S. 37

File With _____

SECTION 131 FORM

Appeal NO: ABP - 321867-25 **Defer Re O/H** ☐

TO: SEO

Having considered the contents of the submission ~~dated~~/received 11/03/2025.

from

Wind Aware Dromahair I recommend that section 131 of the Planning and Development Act, 2000

~~be~~ not be invoked at this stage for the following reason(s): no new material planning issues

E.O.: Karen Byrne **Date:** 7/04/2025.

To EO: _____

Section 131 not to be invoked at this stage. ☐

Section 131 to be invoked – allow 2/4 weeks for reply. ☐

S.E.O.: _____ **Date:** _____

S.A.O: _____ **Date:** _____

M _____

Please prepare BP _____ **- Section 131 notice enclosing a copy of the attached submission**

to: _____

Allow 2/3/4weeks – BP _____

EO: _____ **Date:** _____

AA: _____ **Date:** _____

S. 37

File With _____

CORRESPONDENCE FORM

Appeal No: ABP 321867-25 (Remitted Case)

M _____

Please treat correspondence received on 11/3/25 -email **as follows:**

1. Update database with new agent for Applicant/Appellant _____	
2. Acknowledge with BP 23	**1. RETURN TO SENDER with BP** _____
3. Keep copy of Board's Letter ☐	2. Keep Envelope: ☐
	3. Keep Copy of Board's letter ☐

Amendments/Comments
Response from Wind Aware Dromahair

4. Attach to file	**RETURN TO EO** ☑
(a) R/S ☐ (d) Screening ☐	Karen Byrne
(b) GIS Processing ☐ (e) Inspectorate ☐	
(c) Processing ☐	

	Plans Date Stamped ☐
	Date Stamped Filled in ☐
EO: Lisa Q	**AA:** [signature]
Date: 12/3/25	**Date:** 13/03/25

Karen Byrne

From:	Jack O'Sullivan <jackosullivan2006@gmail.com>
Sent:	Tuesday 11 March 2025 17:15
To:	Appeals2; Bord
Subject:	Observations by Wind Aware Dromahair community group; An Bord Pleanála Reactivated Case Reference No. 321867-25; County Leitrim.
Attachments:	WAD-243 Complete observations to An Bord Pleanála, LEITRIM wind farm, ABP-321867-25, 11-Mar-2025 final.pdf
Follow Up Flag:	Follow up
Flag Status:	Completed

Caution: This is an **External Email** and may have malicious content. Please take care when clicking links or opening attachments. When in doubt, contact the ICT Helpdesk.

Appeals Division,
An Bord Pleanála,
64 Marlborough Street,
Dublin 1,
D01 V902

Dear Sir,

Planning Application by Coillte CGA for an 8-Turbine Wind Farm, Electrical Substation, Grid Connection, Partial Demolition and Alteration of Agricultural Buildings, Upgrading of Existing Tracks and Roads, Construction of New Site Access Roads, and Associated Works in the townlands of Bargowla, Boleymaguire, Braudphark, Derreens, Derrybofin, Derrycullinan, Derrycullinan Beg, Drummanacappul, Garvagh, Garvagh Glebe, Glassalt, Lisfuiltaghan, Seltan, Sheena and Tinnybeg, County Leitrim; and Appeals to An Bord Pleanála against the Decision by Leitrim County Council to Grant Planning Permission

Board's Decision to Refuse Permission (case ref. PL12.310789-21)

High Court Order to Remit the Application to the Board for Reconsideration (case ref. H.JR.2023.0001454)

Leitrim County Council Planning Reference 20 / 120

An Bord Pleanála Reactivated Case Reference No. 321867-25

Observations on Behalf of Wind Aware Dromahair

Our submission, which includes the attached document as well as this cover letter, addresses as fully as possible within the restricted time scale provided, the issues which we consider relevant at this stage to the Board's reconsideration of the original planning application, together with other issues raised in the appeals against the Board's original decision, and further issues raised by the Applicant and by An Bord Pleanála, as Respondent, before and during the Judicial Review proceedings in the High Court.

The **Wind Aware Dromahair** community group is a locally based unincorporated group, representing the interests of residents, farmers, small business owners, ecotourism operators, and other persons living in and around the area where the proposed wind farm would be located. Members of Wind Aware Dromahair have collectively, and also in many cases individually, a *"direct and vital interest"* in the result of the Board's reconsideration of the planning application, and in the new decision to be made by the Board, as they would be directly and seriously affected by the wind farm if it were to be granted permission and if it were to be constructed and operated, even in accordance with the applicant's proposed mitigation measures.

The address of Wind Aware Dromahair is:

c/o Dr Brigitte Christoph,
Beagh,
Dromahair, County Leitrim.

The Board may use the above address, in addition to our own address, as agent, for any communications with the group

Jack O'Sullivan.

Jack O'Sullivan
Environmental Management Services
On behalf of Wind Aware Dromahair

****

****

An Tinteán Nua,
Ballymanus,
Castlepollard,
County Westmeath,
Ireland.

Loc8 Code: MJQ-56-27G Eircode N91 PP76
Telephone +353 44 966 2222
Mobile +353 86381 9811
E-mail jackosullivan2006@gmail.com

****

Environmental Management Services
Comhairleoirí Comhshaoil
Environmental and Planning Consultants

An Tinteán Nua, Ballymanus, Castlepollard, County Westmeath
An Tinteán Nua, Baile Mhánais, Baile na gCros, Co. an Iarmhí, N91 PP76.
Telephone 044 966 2222 Mobile 086 381 9811 E-mail jackosullivan2006@gmail.com

Planning Application by Coillte CGA for an 8-Turbine Wind Farm, Electrical Substation, Grid Connection, Partial Demolition and Alteration of Agricultural Buildings, Upgrading of Existing Tracks and Roads, Construction of New Site Access Roads, and Associated Works in the townlands of Bargowla, Boleymaguire, Braudphark, Derreens, Derrybofin, Derrycullinan, Derrycullinan Beg, Drummanacappul, Garvagh, Garvagh Glebe, Glassalt, Lisfuiltaghan, Seltan, Sheena and Tinnybeg, County Leitrim –

Appeals to An Bord Pleanála against the Decision by Leitrim County Council to Grant Planning Permission; the Board's Decision to Refuse Permission (case ref. PL12.310789-21), and High Court Order to remit the Application to the Board for Reconsideration (case ref. H.JR.2023.0001454)

Leitrim County Council Planning Reference 20 / 120

An Bord Pleanála Reactivated Case Reference No. 321867-25

OBSERVATIONS ON BEHALF OF WIND AWARE DROMAHAIR

11 March 2025

Environmental Management Services
Comhairleoirí Comhshaoil
Environmental and Planning Consultants

An Tinteán Nua, Ballymanus, Castlepollard, County Westmeath
An Tinteán Nua, Baile Mhánais, Baile na gCros, Co. an Iarmhí, N91 PP76.
Telephone 044 966 2222 Mobile 086 381 9811 E-mail jackosullivan2006@gmail.com

11 March 2025

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

Dear Sir,

Planning Application by Coillte CGA for an 8-Turbine Wind Farm, Electrical Substation, Grid Connection, Partial Demolition and Alteration of Agricultural Buildings, Upgrading of Existing Tracks and Roads, Construction of New Site Access Roads, and Associated Works in the townlands of Bargowla, Boleymaguire, Braudphark, Derreens, Derrybofin, Derrycullinan, Derrycullinan Beg, Drummanacappul, Garvagh, Garvagh Glebe, Glassalt, Lisfuiltaghan, Seltan, Sheena and Tinnybeg, County Leitrim; and Appeals to An Bord Pleanála against the Decision by Leitrim County Council to Grant Planning Permission; the Board's Decision to Refuse Permission (case ref. PL12.310789-21), and High Court Order to Remit the Application to the Board for Reconsideration (case ref. H.JR.2023.0001454)

Leitrim County Council Planning Reference 20 / 120

An Bord Pleanála Reactivated Case Reference No. 321867-25

OBSERVATIONS ON BEHALF OF WIND AWARE DROMAHAIR

We have been requested by the **Wind Aware Dromahair** community group to submit the attached observations in response to the Board's letter dated 19 February 2025, which requested observations on the above mentioned reactivated planning appeal, and on the original planning application which was the subject of the appeal, and taking into account the current Leitrim County Development Plan 2023-2029.

Enclosed with the Board's letter was a copy of the High Court Order made by Mr Justice Humphries, and perfected on 19 December 2024, which had the effect of quashing the Board's decision made on 23 October 2023 (which refused planning

permission for the above described wind farm), and remitting the planning application to the Board for reconsideration, and consequentially a new decision in accordance with the Order's references to applicable legislation. The Board consented that a further submission would be requested from the Applicant, Futurenergy Croagh DAC, and from the Notice Parties. As the Board will know, Wind Aware Dromahair was a Notice Party to the Judicial Review proceedings, even though we did not make any submissions to the Court.

Our submission, which includes the attached document as well as this cover letter, addresses as fully as possible within the restricted time scale provided, the issues which we consider relevant at this stage to the Board's reconsideration of the original planning application, together with other issues raised in the appeals against the Board's original decision, and further issues raised by the Applicant and by An Bord Pleanála, as Respondent, before and during the Judicial Review proceedings in the High Court.

We are submitting separate observations on similar issues arising from the planning application made by Futurenergy Croagh DAC to Sligo County Council (planning reference **20 / 251**) the decision by the Council to grant planning permission for a smaller portion of the same wind farm which would be located in County Sligo, the appeals against that decision, the subsequent decision by An Bord Pleanála to refuse planning permission (An Bord Pleanála case reference **310788-21**), and the High Court Order remitting that decision to the Board for reconsideration and a new decision (reactivated case reference **321866-25**).

The **Wind Aware Dromahair** community group is a locally based unincorporated group, representing the interests of residents, farmers, small business owners, ecotourism operators, and other persons living in and around the area where the proposed wind farm would be located. Members of Wind Aware Dromahair have collectively, and also in many cases individually, a "*direct and vital interest"* in the result of the Board's reconsideration of the planning application, and in the new decision to be made by the Board, as they would be directly and seriously affected by the wind farm if it were to be granted permission and if it were to be constructed and operated, even in accordance with the applicant's proposed mitigation measures.

The address of Wind Aware Dromahair is:

c/o Dr Brigitte Christoph,
Beagh,
Dromahair,
County Leitrim.

The members of Wind Aware Dromahair trust that An Bord Pleanála will again refuse to grant planning permission for the proposed wind farm for reasons based on the grounds of our appeal, on these further observations, and for any other reasons which the Board may consider appropriate for refusing permission.

Yours faithfully,

Jack O'Sullivan.

Jack O'Sullivan

Environmental Management Services

On behalf of Wind Aware Dromahair

Also signed by:

Adrienne Diamond ..... A. Diamond .....

Christina Guckian ..... C. Guckian .....

Dr Brigitte Christoph ..... B. Christoph .....

Graham Robertson ....

Environmental Management Services
Comhairleoirí Comhshaoil
Environmental and Planning Consultants

An Tinteán Nua, Ballymanus, Castlepollard, County Westmeath
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Telephone 044 966 2222 Mobile 086 381 9811 E-mail jackosullivan2006@gmail.com

Planning Application by Coillte CGA for an 8-Turbine Wind Farm, Electrical Substation, Grid Connection, Partial Demolition and Alteration of Agricultural Buildings, Upgrading of Existing Tracks and Roads, Construction of New Site Access Roads, and Associated Works in the townlands of Bargowla, Boleymaguire, Braudphark, Derreens, Derrybofin, Derrycullinan, Derrycullinan Beg, Drummanacappul, Garvagh, Garvagh Glebe, Glassalt, Lisfuiltaghan, Seltan, Sheena and Tinnybeg, County Leitrim; and Appeals to An Bord Pleanála against the Decision by Leitrim County Council to Grant Planning Permission

Board's Decision to Refuse Permission (case ref. PL12.310789-21)
and

High Court Order to Remit the Application to the Board for Reconsideration (Record number H.JR.2023.0001454)

Leitrim County Council Planning Reference 20 / 120

An Bord Pleanála Reactivated Case Reference No. 321867-25

OBSERVATIONS ON BEHALF OF WIND AWARE DROMAHAIR

1. INTRODUCTION AND BACKGROUND

These observations are made in response to a letter from An Bord Pleanála dated 19 February 2025, subsequent to the issuing of a High Court Order on 19 December 2024, the result of Judicial Review proceedings *FuturEnergy Croagh DAC (Applicant) -v- An Bord Pleanála (Respondent) Wild Ireland Defence CLG (First Notice Party) and Wind Aware Dromahair (Second Notice Party*) [Record No. 2023/1454 JR].

The request for observations made in the Board's letter dated 19 February 2025, covered such a wide range of issues and a lengthy duration of events leading from the initial planning application in 2020 to the High Court Order dated 19 December 2024, that we consider it would be useful (and possibly very necessary) to set out for the benefit of the Board a time-scale of the principal

events and actions which took place during that 5-year period. Having this time-scale will also enable us to organise our evidence and arguments towards our aim of encouraging a new decision by the Board to refuse planning permission for this wind farm.

1.1 Orgin and Time-scale of Events

The origin of the High Court proceedings and the High Court Order lies in two planning applications made almost five years ago, in July 2020, by McCarthy Keville O'Sullivan Ltd., t/a MKO, to Sligo and Leitrim County Councils on behalf of Coillte Cuideachta Ghníomhaíochta Ainmnithea (Coillte CGA) for planning permission for a proposed wind farm on the above location.

1. On 29 July 2020, Coillte Cuideachta Ghníomhaíochta Ainmnithea (Coillte CGA) applied to Leitrim County Council (planning reference **20 / 120**) for planning permissions for a proposed wind farm consisting of 8 turbines and other ancillary works on a site in County Leitrim — a smaller portion of the proposed wind farm, consistsing of two turbines, would be located in County Sligo (Sligo County Council planning reference **20 / 251**, made on the same date); both applications were accompanied by an Environmental Impact Assessment Report (EIAR), by a Natura Impact Statement (NIS) and other technical reports;

2. In September 2020, both Councils requested further information (FI) from the applicant (section 6.4 below); the information was received from the applicant on 21 April 2021, and, on 25 May 2021, Wind Aware Dromahair submitted detailed observations on the FI (section 6.5 below);

3. On 15 June 2021, Leitrim County Council decided to grant planning permission to Coillte CGA for the Leitrim portion of the proposed wind farm, subject to 34 conditions (section 6.6 below); and, on the same date, Sligo County Council decided to grant planning permission for the smaller portion of the wind farm, to be located in County Sligo, subject to 20 conditions.

4. On 08 July 2021, the decisions of both Councils were appealed to An Bord Pleanála by MKO on behalf of the applicant, Coillte CGA (first party appeal; section 6.7.1 below), by Environmental Management Services on behalf of Wind Aware Dromahair (third party appeal; section 6.7.2 below) and by Mr Peter Sweetman on behalf of Wild Ireland Defence CLG (third party appeal; section 6.7.3 below); (An Bord Pleanála Case Reference Nos. **310788-21** and **310789-21**);

5. On 10 August 2021, Environmental Management Services on behalf of Wind Aware Dromahair submitted to An Bord Pleanála observations (section 6.8.1 below) on the first party appeal lodged by MKO on behalf of

the applicant, Coillte CGA, and on the third party appeal made by Mr Peter Sweetman on behalf of Wild Ireland Defence CLG (section 6.8.2 below);

6. Our observations on the first party appeal were that it was a strategy to enable the applicant to avoid the consequences of the High Court judgment in *Sweetman -v- An Bord Pleanála* (2020 / 557 JR); (section 6.8.1 below);

7. The Board's Inspector prepared a report dated 01 July 2022 on the appeals, recommending refusal of both planning applications; and on 11 November 2022, An Bord Pleanála requested significant further information from the applicant (section 6.9 below), and this was provided on 08 December 2022, by McCarthy Keville O'Sullivan Ltd., t/a MKO, on behalf of Coillte CGA;

8. On 31 January 2023, Environmental Management Services on behalf of Wind Aware Dromahair submitted An Bord Pleanála detailed and lengthy observations on the applicant's further information, including observations on peat stability, peat slippage, site drainage, environmental health effects of noise and disturbance (section 6.10 Below), and on the legal status of the 2006 Wind Energy Development Guidelines for Planning Authorities and the 2019 draft Wind Energy Guidelines;

9. On 22 February 2023, the Board's Inspector submitted an additional report, in which he recommended refusal of both planning applications;

10. On 23 October 2023, An Bord Pleanála made two decisions to refuse planning permission to **Coillte CGA** for the entire wind farm, giving very detailed and extensive reasons for refusal; based on: (i) the risk associated with landslides not being adequately mitigated; (ii) that the proposed peat repositories would not be effective in providing permanent retention of peat and other materials; (iii) that the proposed development would present a significant risk of adverse environmental impact on sensitive natural habitats of the site and the wider area, and (iv) would constitute an unacceptable risk of water pollution, and (v) that the Board was not satisfied that the proposed development, individually, or in combination with other plans or projects would not adversely affect the conservation objectives and the integrity of three named European Sites (section 6.11 below);

11. On 14 December 2023, Mason Hayes and Curran, solicitors acting for the Applicant for Judicial Review, listed as **FuturEnergy Croagh DAC**, filed in the High Court an **Originating Statement**, a **Statement of Grounds** and two Affidavits, with attached Exhibits, as an *ex parte* application to the High Court for leave to take a Judicial Review of the decisions by An Bord Pleanála; and requesting, *inter alia*, an Order of Certiorari quashing the

Orders made by An Bord Pleanála to refuse planning permission for the proposed wind farm, and/or an Order of the High Court remitting the planning applications for Croagh Wind Farm to the Board, to be reconsidered in accordance with law;

11. On **18 December 2023**, the Planning and Environment division of the High Court (Mr Justice Humphreys, remote hearing) made an Order granting leave to the Applicant to apply by way of an application for Judicial Review of the decisions by An Bord Pleanála, to be further heard on **Monday 15 January 2024**;

12. Following the brief hearing (held remotely) on 18 December 2023, solicitors on behalf of the Applicant filed, on **21 December 2023**, the necessary **Notice of Motion** requesting the relevant High Court Orders;

13. The case was mentioned in the High Court on **15 January 2024** (Order and adjournment), on 04 March 2024 (adjournment), on 08 April 2024 (adjournment) and on 29 April 2024;

14. On **29 April 2024**, Byrne Wallace, solicitors acting for the Respondent, An Bord Pleanála, filed in the High Court a **Statement of Opposition**, supported by an Affidavit of Pierce Dillon, a Senior Administrative Officer of An Bord Pleanála, and an attached Exhibit PD1;

15. On **06 June** and **30 July 2024**, further Affidavits, a booklet of Exhibits and correspeonce, and a Notice of Motion were filed in the High Court on behalf of the Applicant; and the case was mentioned in the High Court on 18 September, 14 October, 04 November and 02 December 2024.

16. On **20 November 2024**, the Applicant issued an outline legal submission, followed by a **Statement of Case** on 27 November, and a further Affidvait and Exhibit on 10 December;

17. On **11 December 2024**, the Respondent, An Bord Pleanála, filed outline legal submissions;

18. The hearing of the case in the High Court was scheduled for 17 December, adjourned to **19 December 2024** when it was heard remotely; and the Court issued an Order remitting the two applications for planning permission for Croagh wind farm to the Board for reconsideration in accordance with law, and taking the Leitrim County Development Plan 2023-2029 and the Sligo County Development Plan 2024-2030; and it was agreed by consent that the Respondent, An Bord Pleanála, would request further submissions from the Applicant, Futurenergy Croagh DAC, and from the Notice Parties;

19. On 19 February 2025, An Bord Pleanála wrote to Environmental Management Services, as agent for Wind Aware Dromahair, referring to the High Court Order, noting that the appeals have been reactivated under new case numbers, and inviting submissions (under section 131 of the Planning and Development Act 2000, as amended) on the original planning applications, on the Leitrim County Development Plan 2023-2029 and on the Sligo County Development Plan 2024-2030.

The observations which follow are in response to the Board's letter of 19 February 2025.

2. THE "WIND AWARE DROMAHAIR" COMMUNITY GROUP

Before proceeding to provide obserations as requested in the Board's letter mentioned in paragraph 19 of section 1.1 above, we consider that it would be appropriate to provide some backgound information about the **Wind Aware Dromahair** community group.

This community group was formed in 2018, in response to proposals by Coillte for the construction of a large industrial-scale wind farm consisting of ten 170metre-high turbines, spread across a site of approximately 670 hectares, comprising upland blanket bog and commercial forestry plantations over fifteen townlands in counties Sligo and Leitrim.

The community group includes local residents, land-owners, operators and owners of small businesses, and other persons; and the objective of the community group is to raise public awareness both in Leitrim and throughout Ireland of the potential pitfalls of not challenging inappropriate wind turbine developments.

The community first heard about Coillte's plans for the proposed Croagh Wind Farm in June 2018; the first informal meeting was held in that month, and subsequent meetings were held throughout 2018. Representatives of Coillte attended some of these meetings.

Wind Aware Dromahair was formally established in early 2019; the membership consisting primarily of people living in the immediate area of the proposed wind farm. However, following a public meeting in September 2019, the number of members greatly expanded, and Wind Aware Dromahair (WAD) has a mailing list of more than 100 people, from Dromahair, the Manorhamilton area, and part of County Sligo, in which a portion of the proposed wind farm would be located, if permitted.

The core group (organising committee) of WAD consists of eleven members who hold regular meetings, and the committee's officers (Chairperson, Hon. Treasurer and Hon. Secretary) were elected in June 2020.

Maintaining public awareness is an important function of the organising committee, and WAD has a Facebook page "*Leitrim Wind Industry Awareness"* (https://www.facebook.com/LeitrimWIA/), a Twitter account on "X", also entitled "*Leitrim Wind Industry Awareness"* (https://twitter.com/LeitrimA), an email address (wawaredromahair@gmail.com), and a Credit Union Account.

The committee organised a public petition against the proposed Croagh Wind Farm scheme, which was signed by over 200 members of the local community.

WAD is not opposed to green alternative energy production, but members strongly believe that it must be done in a way which is environmentally sound, socially and environmentally sustainable, not damaging to tourism or farming, while also protecting peoples' health and well-being, their homes and residential amenities, and respecting the unique and very beautiful landscape and natural environment of Counties Leitrim and Sligo. The group also considers that the area of North-west Leitrim and part of County Sligo in which the proposed wind farm would be located, if permitted, also supports too high a concentration of large wind turbines; and that if more were permitted, the natural environment, wildlife and the quality of the landscape would be irretrievably damaged.

WAD community members' detailed knowledge of the area in which the proposed wind farm would be located, together with a consideration of the adverse impacts of the wind farm, led to the conclusion that the application site is inappropriate and unsuitable for the proposed development. The local community also concluded that if the wind farm were to be granted planning permission, other alternative and potentially more suitable and less damaging uses of the subject lands would be ruled out.

On 01 September 2020, Wind Aware Dromahair submitted lengthy and detailed observations to Leitrim and Sligo County Councils in response to the planning applications dated 29 July 2020; and, on 25 May 2021, Wind Aware Dromahair submitted to Leitrim and Sligo County Councils detailed and lengthy observations on the further information provided to both planning authorities by the applicant. When Leitrim and Sligo County Councils decided to grant planning permissions for the relevant portions of the proposed wind farm, Wind Aware Dromahair appealed both of these decisions to An Bord Pleanála.

Wind Aware Dromahair then continued to participate in the planning process by submitting to An Bord Pleanála very detailed observations on two other appeals received by the Board– a first party appeal by MKO on behalf of Coillte CGA, and a third party appeal by Mr Peter Sweetman. And during the six years since WAD was established, this active community group has also submitted observations

on the further information sent by the applicant to the two County Councils and to An Bord Pleanála.

The aims of Wind Aware Dromahair are:

i) to examine the effects of the proposed Croagh Wind Farm on public health (including the health of susceptible individuals), wildlife (including birds), damage to upland blanket bogs, visual impacts on the landscape, impacts on protected areas, local amenities, and other areas of concern;

ii) to share and communicate information about the effects of the proposed Croagh Wind Farm among members and people living locally;

iii) to inform the local community of exactly what is being proposed by the applicant, Coillte Cuideachta Ghníomhaíochta Ainmnithea (Coillte CGA), and to communicate the implications and consequences for the locality and its residents of the current planning application;

iv) to raise wider or national awareness of the fact that the area of North-west Leitrim and part of County Sligo in which the proposed wind farm would be located, if permitted, also supports too high a concentration of large wind turbines; and that if more were to be permitted, the natural environment, wildlife and the quality of the landscape would be irretrievably damaged;

v) to raise awareness of the intention listed in the June 2020 Programme for Government, that the Government will set out to achieve further UNESCO designations for Irish sites, including the nearby Lough Allen region in County Leitrim;

vi) to engage in the planning process, in opposition to the proposal by Coillte CAG to construct a large-scale industrial wind farm on the proposed site in Counties Leitrim and Sligo;

vii) to ensure as far as possible, within the capacity of WAD, that no further planning applications for large-scale wind farms in North-west Leitrim will be tolerated; and that wind farm applicants must respect the integrity of the landscape, must take account of the wishes of local residents, must not damage other sources of livelihood such as tourism and farming, must not damage the environment, wildlife or biodiversity, and must not put public health (including mental health) at risk; and,

viii) to campaign for more appropriate legislation, updated guidelines and a better system for the encouragement of small-scale renewable energy installations, which would favour small producers, especially community groups, and co-operative ownership of renewable energy production facilities.

The elected officers of Wind Aware Dromahair are:

Chairperson: Graham Robertson

Hon. Secretary: Brigitte Christoph

Hon. Treasurer: Tracey Rynn

The address of Wind Aware Dromahair is:

c/o Dr Brigitte Christoph, Beagh, Dromahair, County Leitrim.

3. STRUCTURE OF OUR OBSERVATIONS

When preparing these observations on the above mentioned reactivated planning appeal, as invited by An Bord Pleanála, and as requested by the **Wind Aware Dromahair** community group, we have considered not only the original planning applications and the decisions by Leitrim and Sligo County Councils and the resulting appeals to the Board; but we have also commented on the current Leitrim County Development Plan 2023-2029, and referred to certain over-arching policies and legislation (the planning and legal context) which the High Court Order required the Board to take into account, or which appeared to us to be particuaelry relevant.

The Judicial Review case in the High Court included many comments and observations (from both sides — Applicant and Respondent) on the proposed wind farm, the planning applications, Environmental Impact Assessment Reports (EIARs) and other reports, and on the planning and legal context in which the previous decisions were made by An Bord Pleanála; and we will refer to these where it appears that they might be helpful to the Board in making its decision on the reactivated appeals.

Our submission is structured as follows:

1. Introduction, with brief details of the planning application;
2. The "*Wind Aware Dromahair*" Group – a group of mainly local residents, with information on their concerns about the proposed wind farm (section 2 above);
3. Location and description of the planning application site, and features of the site which render it vulnerable and/or sensitive, including the geology, landform, streams and rivers draining the site; and the proximity of Natura 2000 conservation sites (section 4);
4. Description of the proposed wind farm, including the applicant's rationale and justification of need for the proposed wind farm, and the applicant's consideration of alternatives; the construction and operational impacts of

the wind farm, and indications of its likely significant effects, including site drainage, surface water runoff, effects of heavy rainfall, silt control and the risk of bog slides, transportation of wind farm components, and connection to the national grid (section 5);

5. Planning history of the subject site and the proposed wind farm, information about other wind farms within 10 km of the site, and consideration of their combined effects; requests for further information by Leitrim County Council and by An Bord Pleanála, first party and third party responses to those requests; appeals to the Board, and decision by the Board to refuse planning permission (section 6);
6. Our observations on the applicant's EIAR and NIS (section 7), given the necessity to ensure that the information provided is complete and evidence-based, in accordance with legislation and case law discussed in section 9;
7. Policy context, including relevant policies and objectives of the Leitrim County Development Plan, the Northern and Western Region Spatial and Economic Strategy, Project Ireland 2040, National Planning Framework 2040, the National Development Plan 2018-2027, Ireland's carbon emission reduction obligations, climate policies and strategy, and the current Programme for Government, 2024 (section 8);
8. Legal context, with particular reference to the legislation which the High Court Order considered should be taken into account, together with other relevant Irish and European legislation, including the Paris Agreement, the EU Renewable Energy Directive, the National Renewable Energy Action Plan, the Climate Action Plan 2019, the Climate Action and Low Carbon Development Act 2015 and the amended Act of 2021, Ireland's Climate Change Assessment Report (ICCA) 2024, and the Biodiversity Strategies of the European Union and Ireland (section 9);
9. Alternative measures available for meeting Ireland's carbon reduction goals, including photovoltaic systems (large-scale and small-scale solar), community renewable energy systems, energy storage, offshore wind farms and demand reduction (section 10);
10. Importance of intact peatlands for carbon sequestration, loss of upland blanket bog (section 11);
11. Effects of the proposed wind farm on wildlife (birds) (section 12);
12. Effects on residential amenity, public health and infrasructure – shadow flicker, noise, atmospheric pollution, interference with telecommunications (section 13); and,
13. Concluding observations (section 14).

4. LOCATION AND DESCRIPTION OF THE SUBJECT SITE

4.1 Site Location and Description

The site of the proposed wind farm development consists of 265.14 hectares of upland blanket bog and moorland in the townlands of Bargowla, Boleymaguire, Braudphark, Derreens, Derrybofin, Drummanacappul, Garvagh, Garvagh Glebe, Glassalt, Lisfuiltaghan, Seltan, Sheena, and Tinnybeg, County Leitrim. The entire wind farm, on the proposed site of 309.22 hectares, if permitted, would also occupy 44.08 hectares of land in County Sligo, in the townlands of Carrowmore and Carrownyclowan.

The site is located on the north-eastern slopes of Carrane Hill, approximately 1.7km north-east of its summit, and north-west of Corrie Mountain, and is approximately 5km west of Drumkeeran and 7km south-east of Dromahair. The established land use is primarily evergreen Coillte forestry, together with forestry roads, and bogland and the site also includes agricultural land at its south-eastern end closer to Drumkeeran.

The area within which the proposed wind farm would be located, if permitted, is best described as extensive uplands immediately west of Lough Allen, primarily moorland with blanket bog and areas of rough grazing, with impressive views from the slopes and from higher ground. Extensive areas of coniferous forestry dominate portion of the area around the application site; but, despite existing wind turbines nearby, and the access roads constructed to build and service these wind farms, the area possesses a wonderful sense of isolation.

On the lower slopes of the area, from which the proposed wind turbines would be visible, the landscape includes multiple field boundaries which create strong traditional patterns; and there are many dispersed houses with outbuildings scattered across these lower farmed slopes. Included in the area around the application site are a number of distinctive upland valleys, inhabited by farming communities. Semi-natural woodlands are also found on the steeper slopes and around farms.

While the general area might not be officially considered as an outstanding landscape, it is designated by Leitrim County Council as an area of high visual amenity; and we would submit that the immediate vicinity of the application site possesses a quality which is becoming more rare and difficult to experience in Ireland – a relatively undisturbed landscape with a sense of remoteness and peacefulness.

The proposed development site is located approximately 3.8 km west and south-west of the town of Drumkeeran, and 7.0 km south-southeast of the town of Dromahair. Approximately 86% of the site is forested, and it includes a network

of existing forestry tracks. The development of the proposed wind farm development will require the felling of approximately 55.1 hectares of commercial forestry which will require replanting elsewhere.

The area of the entire site, i.e., the area described in the applicant's Environmental Impact Assessment Report (EIAR), is approximately 670 ha (6.7km^2), including a portion of the proposed construction access road. As we understand that 80% of the application site is in County Leitrim, the area in County Leitrim for which planning permission is being sought for eight wind turbines and other works is 536 hectares. The remining 20% of the site, in County Sligo, for which planning permission is being sought for two wind turbines, is 134 hectares.

The overall elevation of the site ranges between approximately 70m to 330m OD (Ordnance Datum) with the northern section of the site sloping in a northerly direction and the southern section of the site sloping to the southwest.

Blanket peat is the dominant soil type on the application site, with areas of poorly drained mineral soils and peaty topsoil derived from mainly acidic parent rocks which may be seen as areas of outcropping bedrock on the northern section of the site, and towards the southern and eastern edges of the site. On the subject site itself there is also a small area of shallow reasonably drained mineral soil derived from mainly acidic parent materials.

4.2 Ecosystems and Habitats

Ecosystems and habitats on the proposed wind farm site include upland blanket bog (62ha, containing some small areas of fen), a small dystrophic lake (Lough Nacroagh) almost centrally located within the site, and with an adjacent area of quaking bog, a number of small mountainy or upland streams and rivers, drainage ditches, wet grassland, scrub, extensive conifer plantations (581ha), and some small areas of damp mixed willow-alder-ash woodland alongside some of the upland streams. Considered as a whole, the site has a high biodiversity value, despite the existence of a significant area of dense coniferous plantation.

The upland blanket bog is particularly important for its high biodiversity, and this habitat is listed in **Annex I** of the EU Habitats Directive (Blanket Bog [7130]). The further importance of this type of ecosystem for carbon capture and sequestration is described in section 11 below.

4.3 Streams, Rivers and Drainage

The northern part of the wind farm site is drained by the Tullynascreen Stream and the Killanummery River, both of which are located within the River Garvogue catchment. These small rivers drain to the River Bonet, which flows into Lough Gill, within the larger Sligo Bay & Drowse catchment.

The southern part of the wind farm site is located in the Arigna River catchment ; this river flows into Lough Allen approximately 16km downstream of the site. The Arigna River and Lough Allen are within the Shannon River Basin District.

The are high quality watercourses, and there is a requirement under the Water Framework Directive to ensure that they remain high quality; or, if at risk from pollution or other damge, to restore their quality to the high category.

4.4 Protected Areas (NHAs, SACs and SPAs)

Three Natural Heritage Areas are located close to the proposed wind farm site: Corry Mountain Bog NHA (site code 002321) lies to the east and south-east (the planned grid connection route would pass through this NHA, if permitted); Carrane Hill Bog NHA (site code 002415) lies immediately to the south-west, and Kilronan Mountain Bog NHA (site code 000617) lies about 8.0km to the south-east.

The nearest Natura 2000 sites within 15km include Lough Gill SAC (site code 001976), Boleybrack Mountain SAC (site code 002032), Unshin River SAC (site code 001898), Cuilcagh - Anierin Uplands SAC (site code 000584), Lough Arrow SAC (site code 001673), Lough Arrow SPA (site code 004050), Bricklieve Mountains and Keishcorran SAC (site code 001656) and Union Wood SAC (site code 000638).

4.4.1 Corry Mountain Bog NHA (site code 002321) Site Synopsis

Corry Mountain Bog NHA is an area of upland blanket bog, straddling the Roscommon/Leitrim county boundary, located about 4 km west of Lough Allen. The site drains into the Owengar River via surface streams on its northern side and into the Arigna River, which flows into Lough Allen, on its southern side. Mature forestry plantations form parts of the northern and southern boundaries and the site extends down the lower slopes of Corry Mountain as far as fields of heathy grassland and rush pasture. A number of wind power installations are sited on the summit of the mountain.

The site consists primarily of intact upland blanket bog. The bog surface is wet and quaking in places, where bog moss cover is at its highest, notably in flushes and in bog moss lawns.

Small areas of re-vegetated cutover and more recently disturbed peat occur locally, the latter now colonising with cotton grasses, Bog Asphodel (*Narthecium ossifragum*) and bog moss (*Sphagnum tenellum*). Small swallow-holes at the base of rock outcrops are quite common and these are colonised by Bilberry (*Vaccinium myrtillus*), Rowan (*Sorbus aucuparia*) seedlings, Heath Bedstraw (*Galium saxatile*) and Broad Buckler-fern (*Dryopteris dilatata*).

Wet heath, dry heath and acid grassland habitats occur on thinner peat soils forming transition zones to blanket bog. Red Data Book species recorded on this site include **Irish Hare, Hen Harrier, Golden Plover** and **Red Grouse**.

Considerable fragmentation of the blanket bog in this upland area has resulted from afforestation on the lower northern and southern slopes of Corry Mountain. Current land uses on the site include peat cutting and sheep grazing, while on lower slopes new plantation forestry has encroached on heath and bog habitat. Damaging activities associated with these land uses include drainage and accidental fires. Recent fire has damaged vegetation on the blanket bog immediately west of the wind power facility. These activities have resulted in habitat loss and caused localised damage to the hydrological status of the site. Generally, however, there has been little burning of this extensive blanket bog site, while grazing pressure by sheep is notably minimal.

Corry Mountain Bog NHA is a site of considerable conservation significance comprising a relatively intact area of upland blanket bog [our emphasis]. The site supports a good diversity of blanket bog microhabitats, including bog moss lawns and flushes. Blanket bog habitat is a globally scarce resource.

Upland blanket bogs, due to their exposure to severe climatic conditions at high elevations, are particularly vulnerable to erosion by human activities and extensive areas are currently undergoing active erosion due mainly to overgrazing. The current area of intact upland blanket bog in Ireland represents only a fraction of the original resource, due to the combined impacts of afforestation and overgrazing, and intact examples are therefore extremely valuable for nature conservation. Their long-term survival requires sensitive management. The presence of wet heath, dry heath and acid grassland on the site, and the occurrence of Cranberry, a large population of Lesser Twayblade and several Red Data Book species, adds significantly to its conservation value.

5. DESCRIPTION OF THE PROPOSED WIND FARM DEVELOPMENT

The proposed wind farm would consist of the following developments, site works and activities in County Leitrim:

1. Erection of 8 of a total of 10 three-blade wind turbines with a maximum overall blade height of up to 170 metres, with a rated electrical power output of some 3 to 5 megawatts (MW), depending on further wind data analysis and power output modelling. The manufacturers and models of the proposed wind turbines, and the design of the turbine towers, have not been finalised, but their final selection from a number of alternative configurations will be determined by a competitive tender process in the future;

2. Installation of reinforced concrete foundations for the turbine towers, the shape (circular, hexagonal or square) and size of which will be determined by the requirements of the selected turbine manufacturer and installer; with the depth of the foundation determined by the distance below ground to solid rock of sufficient strength to bear the weight of the turbine tower, nacelle, turbine hub, rotor, turbine blades and the forces acting on these components;

3. Associated hardstanding areas, consisting of levelled and compacted hardcore around each turbine base, to accommodate cranes used in the assembly and erection of each turbine, offloading and storage of turbine components, and to provide a safe, level working area around each turbine position; with the size, arrangement and positioning of each hard standing area to be determined by the turbine suppliers;

4. Upgrading of approximately 10.9 kilometres of existing forest roads and tracks, and construction of approximately 6.9 kilometres of new access roads within the wind farm site; the construction techniques, and the depths of excavation and the amount of fill material required for these works to be determined by the ground conditions encountered during construction;

5. Construction of “floating roads” over peat encountered in some areas of the proposed wind farm, together with the installation of berms along one or both sides of these access roads where the peat layer is particularly deep and/or weak or unstable;

6. Construction of six watercourse crossing points, to carry the proposed site access roads over existing watercourses within the site;

7. Two temporary construction compounds, one of which would be approximately 60 metres by 40 metres (approximately 2,370 m^2 in area) at the approximate centre of the site, adjacent to an existing access road near wind turbine number 7; while the second temporary construction compound (approximately 2,110 m^2 in area) would be located adjacent to an existing road near turbine number 4;

8. Removal of some 209,970 m^3 of peat, other vegetation and 196,860 m^3 of spoil excavated from the turbine foundations and hardstanding area (items 2 and 3 above), from the construction compounds (item 7 above), the electricity substation platform and building (item 12 below), from the upgrading and construction of site access roads (items 4, 5 and 6 above), and from the "borrow pit" (items 9 and 10 below) and peat repository areas (this item); followed by the transport and deposition of this material into three peat and spoil repository areas, one of which would be the "borrow pit", while the other two repository areas would be located near turbines numbered 2 and 9 (these repository areas would require approximately 34,500m^2 of the existing peatland to be removed);

9. An on-site 20,930m^2 "borrow pit", from which would be excavated most of all rock and hardcore material required for construction of the proposed wind farm; and into which would eventually be deposited large quantities of excavated rock, subsoil, soil and peat when the needed and useful rock has been removed;

10. Stripping back of vegetation, soil and subsoil from surface of the "borrow pit" location, prior to utilisation of large and heavy hydraulically-operated rock-breaking equipment, together with drilling and blasting (using explosives) to extract, crush and prepare the significant volumes of the type and dimensions of stone needed for turbine locations, hard-standings, and other works;

11. Importation from local quarries of unspecified quantities of finer, crushed stone, to provide the final surface layer for site roads and hardstanding areas;

12. A 38 kV permanent electricity substation including a wind farm control building with staff welfare facilities (including toilets), all associated electrical plant and equipment, 2.6-metre-high steel palisade security fencing, associated underground cabling, wastewater storage or holding tank (wastewater would be tankered off-site), and all ancillary works;

13. A proposed permanent meteorological mast with a maximum height of up to 100 metres, equipped with wind monitoring equipment at various

heights, to be constructed on a hard-standing area sufficiently large to accommodate the crane that will be used to erect the mast;

14. All associated underground electrical (20 or 33kV) and communications cables connecting the turbines to the proposed wind farm substation, would be run in trenches along the margins of the proposed site roads;

15. Connection of the proposed wind farm to the national electricity grid via a 6.2 kilometre 38kV underground cable running alongside the site roads and a public road from the proposed on-site substation to the existing Garvagh 110kV electricity substation in the townland of Seltan; including nine watercourse crossing locations;

16. Opening up and construction of a proposed new site entrance and access road off the L4282 local road in the townland of Derrycullinan, and the upgrading of an existing site entrance off the L4282 local road in the townland of Boleymaguire, which would become the primary site entrance for the access and egress of operational and maintenance staff during construction and operational periods, and would also be used for the delivery of turbine components and abnormal loads during the construction period;

17. Construction of a new link road between the R280 regional road in the village of Drumkeeran and the L4282 local road in the townland of Derryboffin; and construction of a new access road between the L4282 local road at Derrycullinan and the same local road at Bargowla; with this access road to be used during the construction period;

18. Construction of a hardstanding area within agricultural land, adjacent to the L4282, in order to widen the local road between two sharp bends in the townland of Derrycullinan, in order to facilitate the delivery of large turbine components and other abnormal loads;

19. Partial demolition and alteration of two agricultural buildings and the use of agricultural land for road construction in the townlands of Sheena and Derrybofin to provide a link road off the R280, to be used by construction traffic, especially the delivery of abnormal loads to the site during construction, during the operational period if necessary, and during decommissioning of the proposed wind farm;

20. Felling and permanent loss of some 55.1 hectares of commercial forestry to allow the construction of turbine bases, access roads and the other ancillary infrastructure;

21. Replacement or replanting of the same area of commercial forestry on one or more alternative sites in Counties Cavan, Roscommon and Wicklow, provisionally identified as suitable for replanting;

22. Proposed recreation and amenity works, including marked walkways or looped trails for walkers and cyclists, wooden boardwalk and viewing area, viewing platform on the shore of Lough Nacroagh, provision of a visitor entrance and permanent car park, and associated visitor information and amenity signage;

23. Permanent site drainage (including swales, vegetation filters and stilling ponds), and temporary interceptor drains installed upgradient of any works areas; both sets of drains designed to maximise erosion control, and to minimise the volume of sediment-laden water to be managed; and,

24. All other associated site development works not specifically mentioned above.

The applicant is seeking a ten-year permission and 30 year operational life from the date of commissioning of the wind farm.

The proposed wind turbines are expected to have a lifespan of approximately 30 years; and, at the end of their useful life, they may be replaced by a new set of turbines, subject to planning permission, or the wind farm may be fully decommissioned and all visible structures removed.

Turbine foundations would remain in place and would be covered with earth and reseeded as appropriate. Site roadways would be left in situ, for future forestry operations, and the amenity and recreation infrastructure would also be left in-situ. Underground cables, including the grid connection, would be removed, but the ducting would be left in place. The onsite substation would also remain in place, possibly under the ownership of the ESB, and it would form a permanent part of the national electricity grid.

5.1 Our Observations on the Nature and Scale of the Proposed Wind Farm Development

It will be clear from the description above, which is summarised from the detail provided in the applicant's Environmental Impact Assessment Report and other planning documents, that the proposed wind farm is a very large-scale industrial development, on a site of approximately 670 hectares in total; and the construction of the wind farm would require major alteration of the landscape, and the moving of huge quantities of peat, soil, subsoil, rock and other natural materials.

Large quantities of materials such as crushed stone, aggregate, cement, and steel reinforcing would have to be imported to the site, together with turbine towers and turbine components, nacelles, turbine blades and other large objects requiring specialised vehicles for transportation, and requiring the upgrading and improvement of roads to eliminate bends and other constraints. Materials and components for the construction of the electricity substation, wind farm control building and the proposed meteorological mast would also have to be brought to the site.

In addition, some 17.8 kilometres of forest roads and tracks would have to be upgraded or newly constructed; and 55.1 hectares of commercial forestry would have to be felled and permanently lost.

Approximately 406,830m^3 of peat, other vegetation and spoil would have to be excavated, transported and deposited in a "borrow pit" and in dedicated peat and soil repository areas. While the term "borrow pit" is a standard engineering and construction term, it suggests that required materials would be "borrowed" from the pit and would be eventually replaced; but in reality the material extracted is never replaced (though in this case the "borrow pit" would be partly back-filled with peat, soil and other material left over or discarded during construction).

The area to be disturbed has been calculated by the applicant as 153,140m^2, or 15.3ha (Applicant's EIAR, Chapter 4, Description of the Proposed Development, Section 4.3.4, Peat and Spoil Management Plan, Table 4-2, page 4-11); and though we might not doubt the applicant's intention to provide this information as accurately as possible, we believe that a significantly larger area of blanket peat will be adversely impacted. As the Board will be aware from other wind farm developments, construction sites frequently occupy an area greater than was originally planned, unless hemmed in or boxed in by barriers such as walls or other building sites. In a situation where there would be several construction sites in an open area, with no barriers, it is extremely likely that machinery will traverse and damage other areas of the upland peat, to an extent that the total area affected would exceed the applicant's prediction.

A further important issue, which we trust the Board will take note of, is the uncertainty and lack of definite information about many aspects of the proposed wind farm development. For example:

a) the rated electrical power output of the wind farm is not yet known;

b) the manufacturers and models of the proposed wind turbines, and the design of the turbine towers, have not been finalised;

c) the shapes and sizes of the reinforced concrete foundations for the turbine towers are not yet finalised;

d) the sizes and positions of the hard standing areas have yet to be determined;

e) the depths of the excavations and the amount of fill material required for the upgrading of existing forest roads and the construction of new access roads have yet to be determined; and,

f) while a number of sites in Counties Cavan, Roscommon and Wicklow have been provisionally identified as suitable for replanting with commercial forestry to replace the 55.1 hectares of forestry which would be lost if the wind farm were to be constructed, there is no guarantee that these sites would be available, or would be replanted.

It is therefore our observation that there are too many uncertainties in the planning application to allow the Board to consider, or to grant planning permission for the proposed wind farm. These uncertainties must remain as part of the planning application, and **they cannot now be changed**, as the applicant has not sought any pre-planning discussion with the Board, to allow unconfirmed details to be considered under the provisions of Section 37CC of the Planning and Development Act 2000, as amended.

It is our further observation that the generalised description of the proposed wind turbines, excavations for the proposed turbine tower foundations, the design of these foundations, and other significant works, even taking into account the applicant's reponses to the further information requests by Leitrim County Council and by the Board, is inadequate to such an extent that Board cannot carry out an Environmental Impact Assessment or an Appropriate Assessment of the proposed wind farm to the necessary degree of scientific certainty, as required by EU Directives and Irish legislation (summarised in section 9 below).

It is our further observation that the scenic and elevated area within which the proposed wind farm would be located already hosts too high a concentration of very large wind turbines; and, that if more turbines were to be permitted, the natural environment, wildlife and the quality of the landscape would be irretrievably damaged.

The Board's Senior Planing Inspector examined the proposed site on 14 and 15 June, 2022, and in his excellent and very thorough 122-page report (dated 01 July 2022) he describes the scale and type of the proposed wind farm development as "a major intrusive industrial project on this upland bogland location" (Inspector's Report, section 8.5, page 85).

It is our observation, not only from our careful reading of the Inspector's report, but from our knowedge of previous cases on which this Planning Inspector has report (including many highly controversial and very complex cases) that his reasoned conclusions are robust, and should be taken into account by the Board when the remitted application and appeals are being reconsidered.

5.2 Rationale and Alternatives Considered

Among the first questions to be addressed in connection with any planning application for a large-scale development which would have significant impacts on the environment and on a local community are: (i) whether the proposed development is in fact necessary, and (ii) have reasonable alternatives been considered.

While the applicant appears to have addressed both of the questions in the EIAR (and is required to do so, in order to comply with the EIA Directive and the relevant Irish legislation), it is necessary to consider in some detail whether the information provided in the EIAR is adequate and logical.

5.2.1 Rationale or Necessity for the Proposed Wind Farm

In Section 2 of the Environmental Impact Assessment Report, the applicant has asserted that

> *"The primary driver behind the proposed development is the need to provide additional renewable energy to offset the use of fossil fuels within the electricity generating sector. Increasing electricity generation from wind power represents the most economical renewable option to reduce emissions within the power generation sector and is the most mature technology available to achieve national targets that have been established for decarbonisation".*[1]

The applicant further states, quite correctly, that:

> *"Renewable energy resources offer sustainable alternatives to our dependency on fossil fuels as well as a means of reducing greenhouse gas emissions and opportunities to reduce our reliance on imported fuels. These resources are abundantly available in Ireland, yet only a fraction has been tapped so far."*

However, the applicant then asserts that:

> *"… it is clear that wind energy represents the strongest and most deployable renewable energy resource available to reduce dependence on fossil fuels in Ireland".*[2]

This statement is then used to promote the idea that "*the proposed development represents an opportunity to bring forward an additional renewable energy source*

[1] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); section 2.1 (Introduction), page 2-1.

[2] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); section 2.2.2.4, page 2-7.

which will contribute towards achieving further decarbonisation of the electricity generation sector".

The Environmental Impact Assessment Report then examines a number of energy policy and climate change response reports (including the Climate Action Plan 2019), and includes extensive quotations from these reports, and comments on them in support of onshore wind energy, and particularly in support of the proposed wind farm:

- *"Ireland has a strong wind resource potential, with one of the best onshore wind speed averages in Europe";*
- *"Wind energy accounted for 84% of the renewable energy generated in 2018";*
- *"Ireland has immense potential for the development of renewable energy particularly wind energy, both on and offshore and wave energy";*
- *"The proposed wind farm will produce electricity for the domestic market and have the possibility of connecting to wider markets via the existing and planned interconnectors to the UK and France"; and,*
- *"The NPF recognises that the development of on-shore and off-shore renewable energy is critically dependent on the development of enabling infrastructure including grid facilities to connect to major sources of energy demand"* [quoted from the National Planning Framework 2018-2040].[3]

What is remarkable, but not surprising, about the applicant's analysis and conclusions is that they point unswervingly towards onshore wind as the solution to the requirement for greater utilisation of renewable energy sources for electricity generation. References to solar energy and offshore wind are quoted minimally from national reports, without any indication being provided that these renewable energy sources are described in recent policy reports (from which we quote in section 8 below) as the most appropriate technologies for increasing Ireland's share of renewable energy.

It is therefore not surprising that the applicant's EIAR makes only very brief references to the existing problems with the regional and local electricity grid:

- "*Addressing technical grid challenges to incorporating very high levels of asynchronous renewables";* [4]

[3] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); pages 2-8 to 2-18.

[4] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); page 2-5.

- *"… reinforcing our grid (including greater interconnection to allow electricity to flow between Ireland and other countries …";* [5]
- *"new energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system";* [6]
- *"Within the* [Northern and Western] *region it is noted that the existing transmission network is predominantly lower capacity in this regard developing the grid will enable the transmission system to safely accommodate more diverse power flows from surplus regional generation".*[7]

Despite the brief mention of these problems, some of which are also mentioned in the policy documents summarised in section 8 below (especially the Northern and Western Region Spatial and Economic Strategy in section 8.2), the EIAR makes the extraordinary and somewhat unbelievable statement that the proposed wind farm "*will aid in reinforcing grid infrastructure and greater interconnection".*[8]

Given the problems with the lack of grid capacity and the excess or surplus of renewable electricity in the Northern and Western Region (described in section 5.2.3 below), it appears illogical to suggest that the proposed wind farm will help to resolve these issues.

It is therefore our submission that the applicant has failed to justify a necessity or a need for the proposed Croagh Wind Farm, for the following reasons:

i) the EIAR does not examine the potential for other sources of renewable energy to contribute to the reduction of Ireland's dependency on fossil fuels;

ii) onshore wind energy is promoted, without justification, as the solution to a real and perceived lack of renewable energy sources;

iii) the EIAR omits any detailed consideration of the grid-related problems in the Northern and Western Region, namely, the current lack of capacity in the regional grid, and the excess of supply compared with demand;

[5] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); page 2-24.

[6] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); page 2-27.

[7] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); page 2-30.

[8] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); heading on section 2.3.6, page 2-25.

iv) when promoting the development of yet another wind farm in the area of north Leitrim and the adjacent part of County Sligo, the EIAR omits to refer to the fact that the greatest demand for electricity from renewable sources is coming from, and will to come from, the eastern part of the country;

v) the physical distance between supply and demand requires considerable strengthening of the transmission grid; and,

vi) the assertion that the proposed wind farm "will aid in reinforcing grid infrastructure and greater interconnection" does not appear to be based on any evidence.

5.2.2 Consideration of Alternatives

In examining the justification for the proposed wind farm, or the necessity for it (or the lack of justification or necessity), some consideration of alternatives is very necessary.

As the applicant correctly points out, Article 5(1)(d) of Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU (the EIA Directive), requires that the EIAR prepared by the developer contains "*a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.*"

Examining and describing reasonable alternatives to a proposed development should not be difficult, but the task certainly requires an objective and rigorous analysis. Unfortunately, it is our experience that, in many cases, the choice of alternatives for that analysis are frequently subjective and arbitrary – alternatives often reflect narrow project objectives, the agenda of the developer or applicant for consent, and predilection toward a proposed action. As a consequence, more environmentally sound alternatives can be overlooked or eliminated before the formal analyses in the EIA process, and before presentation in the EIAR.

If the intention or the purpose of the proposed wind farm is to "*bring forward an additional renewable energy source which will contribute towards achieving further decarbonisation of the electricity generation sector*" [9] (as stated by the applicant in chapter 2 of the EIAR), then the consideration of alternatives should consider other renewable energy sources which could help to achieve the stated

[9] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 2 (Background); section 2.2 (Renewable Energy Policy and Targets), page 2-7.

aim of the project. But, as we point out in section 5.1 above, other renewable energy sources are not considered to any reasonable extent.

If the intention of the applicant is to construct a wind farm, then the appropriate and reasonable alternatives to be considered should include other potential onshore sites, as well as possible offshore wind farm sites closer to where demand for electricity from renewable sources is greatest, and where wind power density is adequate or at least equivalent to the wind power available at the proposed site. It is clear from section 3.3.1 of the EIAR that the applicant has not undertaken such an exercise – screening for other possible locations considered only lands owned by the applicant, and excluded lands which were not available for development or were considered to be unsuitable for other reasons.

It is therefore not surprising that the result of the process was to identify only five possible locations for the proposed wind farm, all of which are owned by Coillte; and four of these were immediately ruled out because the applicant is preparing separate planning applications for wind farms in these locations. Croagh was thus selected as the candidate site, clearly reflecting the particular agenda of the applicant.

In selecting the Croagh site, the EIAR states that grid constraints were considered as part of the site selection process, "*including in terms of distance to potential connection nodes and the grid capacity at the nodes, in the local area, to accommodate the connection*".[10] This statement is clearly at variance with the information about lack of grid capacity and other grid connection problems which we have identified from our examination of planning policies in section 8 below, and to which we refer in section 5.2.3 below. Instead, the applicant has merely noted the proximity of the proposed Croagh site to three existing electricity substations, and has asserted that a wind energy development at the proposed location would have multiple options for connection to the national electricity grid.[11]

The remaining portions of the applicant's consideration of alternatives describes a "do nothing" scenario; includes a brief mention of utilising solar energy on the Croagh wind farm site (dismissed for several unrealistic reasons, including the greater volume of peat and spoil to be excavated, the greater area of land required, and the glint and glare from the solar array); and provides only an examination of alternative turbine numbers, layout and turbine models.

[10] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 3 (Consideration of Reasonable Alternatives); section 3.3.1.2 (Phase 2 – Grid Constraints), page 3-4.

[11] Proposed Croagh Wind Farm Development; Environmental Impact Assessment Report (EIAR), 2020.07.06, Section 3 (Consideration of Reasonable Alternatives); section 3.3.3.2 (Existing Grid Infrastructure), page 3-8.

While this consideration of alternatives is quite detailed, and considers a very significant number of constraints and alternative layouts and other suggestions, it does not examine the broader alternatives required to comply with the EIA Directive.

We can therefore conclude that the applicant's consideration of reasonable alternatives reflects only the narrow objective of constructing a wind farm on a site owned by Coillte which is not the subject of other competing uses or planning applications for other wind farms; and it is less a consideration of alternatives than a series of arguments leading to the conclusion that the Croagh Wind Farm site is the best possible site for the proposed development, from the perspective of the applicant.

It is therefore our submission that the applicant's consideration of reasonable alternatives fails to comply with the requirements of the EIA Directive, and that it undermines the essential goal of the EIA process — to encourage more environmentally sound and publicly acceptable actions — and therefore the planning application should be rejected by Leitrim County Council for that reason.

5.2.3 Problems Specific to the Deployment of Large Scale Onshore Wind Farms in the North-west

In section 8.2 below, when examining the policies on wind energy in the Northern and Western Region Spatial and Economic Strategy (RSES), we noted that the strategy expresses concern that

> *"The existing transmission network is predominantly lower capacity 110 kV with very little higher capacity of 220 kV and 400 kV transmission infrastructure";* and,
>
> "*The Border Region has significant renewable energy resources and supply exceeds demand, so there is an excess of generation in the area".*[12]

The National Development Plan 2018-2027, from which we also quote (in section 8.3 below), expresses concern about the intermittent nature of renewable power sourced from wind energy, but considered that the problem would not be as serious if large numbers of small-scale producers of renewable energy were to become net exporters, linked by smart metering and a smart grid.

At this point, it is may therefore be useful to consider why large-scale wind power is problematical.

[12] Northern and Western Regional Assembly -- Spatial and Economic Strategy 2020 – 2032; Section 8: Growth Ambition 5: Supporting Infrastructure; Section 8.2 (Electrical Grid Network), page 264.

Firstly, large-scale commercial wind farms (as opposed to dispersed small-scale renewable electricity producers) require significant and costly upgrading and expansion of Ireland's electricity grid.

The capital costs of expanding and developing the grid between 2011 and 2020 have been predicted to amount to approximately €4.5 billion, together with maintenance costs of €4.0 billion. Of this amount, the per annum costs attributed solely to accommodating large wind farms amounts to €176 million annually from2016 to 2020, while the operating costs of the expanded grid to cater for large- scale wind farms has been predicted as rising to approximately €15 million per year from 2016 to 2020.[13]

Eirgrid has been engaged in significant upgrading and strengthening of the national grid in recent years, for a variety of reasons, including a programme of improvement and replacement of existing transmission lines. This programme was required to accommodate new electricity generation units, new high demand customers including data centres, and a variety of other reasons. Identifying which costs could be apportioned to the need to cater for large-scale wind farms in relatively remote areas was not possible; but it is likely to be a substantial proportion of the whole capital costs expended by Eirgrid.

However, the Sustainable Energy Authority of Ireland (SEAI) has made the following estimate, based on an average wind farm investment cost of €1.3 million per MW (based on cost estimates used in the calculation of REFIT prices). SEAI concludes that an additional 1.2 GW of wind energy capacity would require a total of €1.53 billion capital investment in wind farm development in the years leading up to 2020, **with another €1.6 billion investment in expanding the transmission grid up to 2025** [our emphasis].[14]

A second problem arises from the fact that wind farms are not synchronously connected to the national grid in the same way as conventional oil-fuelled or gas-powered generating stations, and wind energy fluctuates with weather (though it is predictable in the short term).

Electricity suppliers are generally scheduled to supply a certain amount of electricity at a particular time, and the supplier is paid for this electricity at a price which fluctuates almost continuously throughout the 24-hour day. When this power is not required, the supplier is paid a *constraint fee* to compensate for the cost of starting up the plant.

Conventional electricity generating plants do not receive constraint payments when they are due to run at a particular time, but only when their output is not required because of the additional amounts of wind-generated electricity. On

[13] Data from Wind Aware Ireland, November 2017.

[14] A Macroeconomic Analysis of Onshore Wind Deployment to 2020. A Report prepared by Sarah Stanley, Matthew Clancy and Jim Scheer for the Sustainable Energy Authority of Ireland; June 2015; section 2.6, page 12.

such occasions, the conventional plant has to reduce output because electricity generated from wind gets priority dispatch onto the grid. On other occasions, when weather conditions allow a large amount of wind-generated electricity to be fed into the grid, it can be necessary to ask some of the wind turbines to shut down or reduce output. This *curtailment*, which is almost directly related to the percentage of wind generation capacity attached to the grid, is a further cost to the consumer, as the wind farm is paid for the electricity **not** generated.

The increased deployment of onshore wind and the planned development of new wind farms is already creating greater challenges in integrating renewable electricity. One of these challenges is that wind farms are more frequently being "*dispatched down"*, that is, they are instructed to reduce the amount of power they generate, because the local or national grid system is unable to cope with the large volumes of power available. For example, in 2019 alone more than 710,000 MWh of renewable electricity, enough to power the city of Galway for a year, was lost.

When wind farms are "*dispatched down",* the electricity which they would be producing is generally replaced by fossil-fuelled power stations, though it could also be replaced by imported electricity via the East-West connector (undersea cable) between Ireland and Britain.

The two main causes of *dispatch down* are "*constraints"* and "*curtailment"*, mentioned briefly above.

To ensure the safe and secure operation of the transmission system, EirGrid sets a limit or "*curtailment"* on the amount of demand that can be met by renewable electricity. This is limit currently set at 65% which means that even when it is possible for wind farms to provide more (for example if it is possible to meet 70 or 75% of our electricity needs), they cannot do so. Instead, they are curtailed, and that demand is met by fossil fuel generators.

The second main cause of "*dispatch down"* is the operational procedure known as a "*constraint".* Unlike the system-wide problem of curtailment, a constraint is localised in nature. It means that the transmission system in a specific part of the country is unable to transport power from where it is generated to where it is needed.

Constraints are already a serious problem in the west and north-west of Ireland; and, as more wind farms are developed, the level of constraints will increase in those areas, and may also rise in the midlands, as greater amounts of wind energy are fed into the grid in these areas.

From the perspective of the wind farming industry, "*the greatest barrier to achieving our 2030 targets is not building new wind farms but the challenge of*

strengthening our electricity system to integrate the renewable electricity we need".[15]

But if we look at this problem from another perspective, the challenge is not to strengthen the national grid in the North-west to accommodate yet more wind farms, but to change the way in which renewable electricity is produced. Instead of large-scale wind farms, one very possible way ahead in the coming decades would be to promote and permit small-scale individual or community-owned producers of renewable electricity, using solar or small wind turbines. And, as may be seen from our examination of the regional and national policy documents in section 8 below, this should be the preferred option; and would certainly be less costly than a major strengthening of the regional and national grid to accommodate the power generated by a large wind farm such as that proposed in the remitted planning application being reconsidered by the Board.

It is therefore appropriate for the Board to take into consideration these issues, which should lead to a refusal of planning permission, given the problems outlined above.

5.3 Site Drainage, Control Of Silt And Surface Water Runoff, Effects Of Heavy Rainfall, and Bog Slides

It is our observation that the control of surface water run-off from the subject site during construction and operation of the proposed wind farm, and prevention of adverse impacts of drainage from the site, are some of the most difficult issues facing the applicant; given the nature and inherent unsuitability of the site.

5.3.1 Site Drainage and Peat Stability

According to section 4.7 of the applicant's EIAR:

> *"no routes of any natural drainage features will be altered as part of the proposed development, and turbine locations and associated new roadways were originally selected to avoid natural watercourses, and existing roads are to be used wherever possible. There will be no direct discharges to any natural watercourses, with all drainage waters being dispersed as overland flows. All discharges from the proposed works areas will be made over vegetation filters at an appropriate distance from natural watercourses. Buffer zones of 100m and 50m around rivers and streams, respectively, have been used to inform the layout of the proposed development"*;

[15] *Saving Power – 70 by 30 Implementation Plan*; Irish Wind Energy Association, August 2020.

> *"the routes of any natural drainage features will not be altered as part of the proposed development"*;
>
> *"Interceptor drains will be installed upgradient of any works areas to collect surface flow runoff and prevent it reaching excavations and construction areas of the site where it might otherwise have come into contact with exposed surfaces and picked up silt and sediment".*

Reports on site drainage prepared for the applicant included:

i) "*Geotechnical and Peat Stability Assessment Report for Croagh Wind Farm",* prepared by Fehily Timoney & Company, and submitted as appendix 8-1 of the EIAR (final version 19 June 2020);

ii) "*Geological, Hydrological & Hydrogeological Responses to Submissions in Relation to Croagh Wind Farm, Co. Leitrim / Co Sligo",* prepared by Hydro-Environmental Services and dated 15 March 2021, in response to a further information request issued by Leitrim County Council on 22 September 2020; and,

iii) "Geotechnical and Peat Stability Assessment Response" report, also prepared by Fehily Timoney & Company and dated 08 December 2022, is the third report on geotechnical and stability issues prepared in response to the request for further information issues by An Bord Pleanála.

The earliest report (June 2020) included a site walkover, ground investigation, and peat stability risk assessment, and the second report (15 March 2021) included a further site walkover, collection of surface water samples, investigation of field hydrochemistry, and stream flow monitoring.

The more recent peat stability assessment reports do not contain updated conclusions, other than the original conclusions in the applicant's EIAR. The letter dated 08 December 2022, from Hydro Environmental Services provides no new information, but draws significantly from the information presented in the previous peat stability and drainage reports; and it concludes that:

> *"Comprehensive drainage proposals have been prepared for the Croagh Wind Farm development. The Updated Drainage Plans submitted with the Further Information submission to the planning authorities in April 2021, are backed up with supporting calculations (HES, 2021(a), 2021 (b)). The details provided are comprehensive, comply with IFI requirements and are of a detailed construction phase design standard that provide the highest level of protection recommended by the EPA.*
>
> *The drainage management proposal for this development, including those at the peat repositories and borrow pit, are technically sound and based*

on many years of experience of working on similar sites. They include fail-safe and several levels of controls in series. The application of the drainage management as outlined will ensure compliance with EU Surface Water Regulations and WFD requirements while also maintaining the baseline hydrology of the site and downstream receiving waters (surface water and groundwater)".

Our observations on this conclusion are as follows:

1. It is our observation that the applicant's proposals for the control of surface water run-off from the subject site during construction and operation of the proposed wind farm, and prevention of adverse impacts of drainage from the site, are not sufficiently robust to eliminate "downstream" damage to vulnerable and sensitive habitats;

2. Constructing the access roads, turbine bases, work areas, crane pads, hard-standings and other facilities will require substantial removal of vegetation cover and the excavation of peat and mineral subsoil, giving rise to potential sources of sediment-laden water, including drainage and seepage water resulting from road and turbine base excavation;

3. Other sources of sediment will include stockpiled excavated material and the erosion of sediment from site drainage channels; and all of these activities could result in the release of suspended solids to surface waters, leading to increased turbidity which in turn could affect water quality in the local drains and for some distance downstream. Dewatering of excavations and especially borrow pits has the potential to impact on local groundwater levels during the construction phase.

4. With the exception of the computer modelling, there is no additional on-site information, investigations or data given in the further informationin response to concerns raised by Leitrim County Council and An Bord Pleanála; all of the ground data used in the current further information response are taken from earlier reports presented with the applicants EIAR (2020) or in the further information response submitted in 2021;

5. The proposed levels of control of the surface water drainage and run off cannot be considered entirely fail-safe, as the proposed system is based on a series or train of precautionary measures, listed as check dams, silt traps, settlement ponds, etc., that will be applied in series to ensure the protection of downstream watercourses, as described in the applicant's responses to Sligo and Leitrim County Councils' requests for further information. While this type of arrangement may provide some degree of safety or protection in the event of rainfall levels above the capacity of the system design, it would be likely to be overwhelmed, with resulting failure, as a consequence of very heavy, intense or extreme rainfall events. One

common mode of failure is for the first installation, e.g., a silt trap or check dam to be overwhelmed, thereby releasing an instantaneous larger volume of water which would overwhelm the downstream installations.

6. Controlling surface water drainage and run-off is extremely difficult to undertake completely safely, and the fact that such a series of installations has been proposed is a clear indication of the unsuitability of the site from hydrological perspective.

7. It is also risky to rely on older information, and thereby not to take into account more recent investigations of peat slides and other evidence of the instability of peat when disturbed.

Our obnservations above are not too dissimilar from those of the Board's Senior Planning Inspector in his own observations that:

> "*I put it to the Board that this is a highly complex system of drainage, involving a very extensive range of drainage measures. This firmly indicates that* ***this is a concerning site*** [our emphasis] *for a development of the nature proposed. This is particularly so in light of the history of peat slides in this area. I ask the Board to observe the very precise nature of so many of these measures, having due regard to the highly sensitive nature of the land on which these man-made, intrusive works are proposed to occur, i.e. a site which the applicant acknowledges is a peat-dominated environment. The Board willnote that the dominant habitat on the site, conifer plantation, has been originally planted on peatland habitats. The destabilising impacts of these proposed engineered drainage works, together with clear felling, at such a sensitive upland location poses a serious environmental threat, in my opinion. There are definite concerns about the functionality of these provisions, particularly for any of those that may arise after a prolonged dry spell followed by the impact of heavy rainfall events.*
>
> *The ability to adequately manage and maintain drainage infrastructure during such events must be called into question and the lack of comprehensive details on the land and ground conditions of the extensive area over which these provisions would be applied is stark".*[16]

The only difference between our conclusion and that of the Inspector is that he describes the proposed location as "*a concerning site",* whereas we would say that it is absolutely the **wrong site** for such a large-scale wind farm.

[16] An Bord Pleanála, Senior Planning Inspector's report on case 310788/789-21. Paragraph 7.8.5, page 45 of 122.

5.3.2 Silt Control and the Consequences of Failure

Swales, interceptor drains, check dams, level spreaders, piped slope drains, vegetation filters, stilling ponds, mobile silt traps, silt bags, sediment entrapment mats, silt fences and other measures will be used to trap silt and prevent run- off. Drainage from the proposed borrow pit, floating road sections, and cable trenches will be controlled by these measures; and an appropriate number of straw bales, clean stone, terram, stakes, and other materials and equipment will be kept on site at all times to implement the drainage design measures as necessary.

Details of the proposed construction methods are provided in section 4 of the EIAR, while a Construction and Environmental Management Plan (CEMP) is provided in Appendix 4-4. This plan repeats some of the measures described in the principal volume of the EIAR, but gives some additional information about the control of pollution which may be caused by the use of cement-based products (CEMP, section 3.2.10).

While these proposed measures seem to be very comprehensive and detailed, we would point out that constructing the access roads, turbine bases, work areas, crane pads, hard-standings and other facilities will require substantial removal of vegetation cover and the excavation of peat and mineral subsoil, giving rise to potential sources of sediment-laden water, including drainage and seepage water resulting from road and turbine base excavation.

Other sources of sediment would include stockpiled excavated material and the erosion of sediment from site drainage channels; and all of these activities could result in the release of suspended solids to surface waters, leading to increased turbidity which in turn could affect water quality in the local drains and for some distance downstream. Dewatering of excavations and especially borrow pits has the potential to impact on local groundwater levels during the construction phase.

The problems with these engineering solutions is that they depend completely on very good design and construction; and if there are any breaks or accidents, or if the mitigation measures are not constructed exactly to specification, the contents of a settlement pond could be released very quickly, with downstream effects even more damaging than would be caused by the contaminated run-off itself. These types of mitigation measures also depend on the absence of rainfall events which could overwhelm the design capacity of the system. Overall therefore, while it may be possible to reduce the risk, it is not possible to eliminate it completely, or satisfactorily.

While it is the applicant's intention to strictly control potential pollution from cement-based products, we must point out that concrete and other cement-based products are highly alkaline and corrosive and can have significant

negative impacts on water quality. They generate a very fine, highly alkaline silt (pH approximately 11.5) that can physically damage fish by burning their skin and blocking their gills. A pH range of between 6 and 9 is required by the Quality of Salmonid Water Regulations 1988 (S.I. No. 293 of 1988), with artificial variations not to exceed ± 0.5 of a pH unit. Accidental release of cement-based products into the site drainage system, into surface water runoff, and therefore directly or indirectly to surface watercourses would present a significant risk to the aquatic environment.

We would also point out that peat ecosystems are dependent on low pH hydrochemistry, and they are extremely sensitive to the introduction of high pH alkaline contaminants into the ecosystem. Batching of wet concrete on site and the washing of transport and other machinery are the activities most likely to generate a risk of cement-based pollution.

The probability of accidents can never be excluded, and the Board should be aware that in September 2008, the Owengar River was severely polluted as a result of a catastrophic landslide caused by construction activities associated with wind farm and site road construction close to the Upper reaches of the Owengar River in Garvagh Glebe, Drumkeerin, County Leitrim.

Water samples collected and analysed by Inland Fisheries Ireland showed that the impact of the pollution spread downstream through the Owengar River as far as Lough Allen over 9 kilometres downstream. The resulting pollution resulted in a fish kill of thousands of fish, mainly brown trout. The peaty material which was displaced into the watercourse led to the destruction of fisheries habitat on a massive scale, and many years will be needed for the impacted section of the river to recover.[17]

5.3.3 Effects of Heavy Rainfall

Potential effects of intense or heavy rainfall are mentioned in Appendix 8-1 of the applicant's EIAR, which examines the possibility of peat slides, but there appears to be no assessment of the effects of future intense rainfall events on the construction site itself.

It is our observation that the applicant did not consider in sufficient detail the effects of extreme rainfall events likely to occur in the area, including the 1-hour, 12-hour, 24-hour and 48-hour events with recurrence intervals of 10, 25, 50 and 100 years. This is the standard method used for determining extreme rainfall

[17] Information from Inland Fisheries Ireland, letter dated 07 February 2019, in response to the scoping request for the proposed development.

volumes, and these are the rainfall events that typically cause most flooding problems.

It is also appropriate to point out that Met Éireann's rainfall projections for the next few decades show that the frequency of heavy precipitation events will increase by approximately 20% during the winter and autumn months.[18]

A relatively recent but very relevant IPCC report on regional climate projections states that over Northern Europe between 1980-1999 and 2080-2099 the median change in precipitation was a 15% increase for the months of December, January and February, 12% for March, April and May, 2% for June, July and August, and 8% for September, October and November. Relative to the wettest period in 1980-1999 there was a 43% increase in heavy precipitation events in December, January and February.[19]

The latest assessment from C4I (Community Climate Change Consortium for Ireland), also quoted in Met Éireann's Technical Note 61, states that over Ireland by mid-century there may well be:

1. An increase of about 15% in winter rainfall amounts;
2. Drier summers with 20% lower precipitation in some areas, most likely the east and southeast;
3. A 20% increase in the two-day extreme rainfalls, especially in northern areas and smaller increases in the one and five day extremes; and.
4. More frequent rainfall extremes in autumn.

All this data would suggest an increase in extreme rainfalls for durations of 24 hours or more, especially in autumn and winter. These predicated increase in rainfall, and especially in the number and frequency of heavy precipitation events, have apparently not been considered by the applicant in any of the documentation provided, and it is our submission that within the next decade the proposed mitigation measures to control surface water run-off from the proposed site would be inadequate and easily overwhelmed.

5.3.4 High Risk of Bog Slides or Peat Slides

The applicant's EIAR, Appendix 8-1, section 3, includes a review of previous "*peat failures", "bog slides" or "landslides"*, and the review notes that "*the Lough*

[18] https://www.met.ie/climate/services/rainfall-return-periods

[19] Met Éireann, Technical Note 61: "Estimation of Point Rainfall Frequencies"; D.L. Fitzgerald, October, 2007.

Allen upland area has a high density of historical landslide, which are dominantly associated with peat failures from the plateau and surrounding steep slopes outside of the proposed development footprint".

The applicant's review of historical landslides in the area provides the following information:

(1) All landslides (except three) in the area are located on the upland plateau or surrounding slopes;

(2) The landslides from the upland plateau and surrounding slopes are mostly peat slides, with occasional slumping of rock-soil at the steep margin of the plateau;

(3) The peat slides from the upland plateau and surrounding slopes have occurred due to mainly a combination of deeper (and weaker) peat on poorly drained sloping ground; most of the slides have been triggered by intense rainfall events;

(4) Within the site, three landslides or bog slides have occurred; these are described as peat slides (2) and a rotational slide (1), and appear to have been identified by aerial photography; and,

(5) A previous walkover inspection identified a peat slide that occurred on the surrounding plateau slopes of Croagh to the southwest on the site in 2016; and this slide travelled approximately 1km downslope and into the proposed wind farm site.

(6) However, on 28 June 2020, a further very serious bog slide occurred at the Dawn of Hope Bridge near Drumkeeran, following heavy rain; and details were reported in the Leitrim Observer on 01 July.

The review notes that the site is generally classified by the GSI (2019) as 'low' to 'moderately low' susceptibility; but, given the historical and the very recent data provided above, it would be more realistic to conclude that the site and the area around it should be classified as "moderate to high risk". If we now take into consideration the June 2020 bog slide, the proposed construction works, the significant amount of human activity around the proposed construction area and the increasing probability and intensity of heavy rainfall events (section 5.3.3 above), a more appropriate classification would be "***high risk***".

This assessment is supported by the concerns expressed by Inland Fisheries Ireland (IFI) in a letter dated 07 February 2019 in response to a scoping exercise undertaken on behalf of the applicant. In that letter, IFI expressed serious concern about the potential for landslides in the area of the proposed wind farm

ite, based on the occurrence of two landslides in close proximity to the site during the construction and clear felling for the neighbouring Garvagh Glebe windfarm, which resulted in significant damage to the fisheries resource and water quality in the Owengar River. IFI noted that the Geological Survey of Ireland has also identified numerous landslides in the same area, indicating significant risks from activities involving large-scale earth works such as would take place during the construction of windfarms.

While the Geotechnical & Peat Stability Assessment Report undertaken on behalf of the applicant is very detailed, and suggests that any risk of a "bog slide" is minimal or low, it is our observation that this is an extremely difficult site on which to undertake engineering works; and that the risk of a "bog slide" is higher than predicted.

The report by the Board's Senior Planning Inspector, and the results of more recent investigations into the causes and effects of peat slides, confirm this high risk assessment. In his report, the Board's Inspector reached the reasoned conclusion that:

> *"In my opinion,* ***the risk of significant environmental damage arising from peat slides is too great on this site*** [our emphasis]. *This is not something that can be readily engineered after proposing to marginally avoid areas of significant risk. There must be serious concerns about peat erosion, peat instability, localised movement of peat, and ultimately peat failure on this site with a development of this nature, particularly from clear felling followed by the construction of the turbine bases and the development of the access road network traversing the contours of this upland site. At times of heavy rainfall, preceded by a prolonged dry spell, when water is channelling down through this site, when felling is underway and excavation is occurring through the peatland, the proposed strict adherence to management plans and drainage control measures can, and will be, seriously challenged on this site.* ***The proposed development is most likely, in my opinion, to pose a significant adverse environmental impact arising from peat failure and ultimately a landslide*** [our emphasis].[20]

Furthermore, two recent papers by Dr Alan P. Dykes reported an increasing incidence of peat slides and blanket bog failures, together with the likelihood that their frequency will increase in the near future because of climatic change. His investigation of recent peat landslides in Ireland found that:

[20] An Bord Pleanála, Senior Planning Inspector's report on case 310788/789-21. Paragraph 8.5, page 87 of 122.

> "*The frequency of occurrence of large blanket bog failures appears to have been increasing throughout the last 130 years—although the average remains just below three per decade. This should perhaps be viewed in the context of apparently increasing annual rainfall for Ireland, although there is no significant statistical relationship. For the failures with known dates of occurrence, a higher frequency associated with higher autumn rainfall is clearly indicated, but very heavy summer rainfall following prolonged hot and dry periods — predicted to become a more common scenario — is a recognised risk factor.*
>
> *Three recent peat landslides seem to reinforce known common risk factors for the respective types of failure, in particular the possibility of very large bog flows from very low gradient (< 5°) convex slopes and smaller, probably less mobile bog slides from steeper slopes — although both types can deliver hundreds or thousands of tonnes of polluting peat particles to watercourses and so cause potentially significant economic as well as ecological damage for many kilometres downstream.*
>
> *Climate change predictions of warmer, drier summers but with a generally higher frequency of high magnitude rainfall events may be expected to cause more such landslides in the spring or summer than has been the case over the last century. Figure 7a suggests an increasing frequency of these types of failures but this may reflect greater scientific and management interest in recent years with more detailed and complete reporting of events.*
>
> *The occurrence of three large bog flows and/or bog slides in a single year is exceptional given the average of 0.3 such (reported) events per year over the last 130 years. Two were most likely triggered by high but not exceptional rainfall, and the third appears to have been initiated by a separate head-loaded peat flow associated with construction of a windfarm access road*.[21]

Another paper by the same author suggests an increasing probability of peal landslides, with climate change identified as major cause:

> "*There is an increasing threat of future peat landslides from several influences. Firstly, climate change scenarios for western Britain and Ireland are consistently predicting warmer, drier summers and wetter winters. More frequent storms bringing high intensity rainfall can be*

[21] Alan P. Dykes, 2022. Landslide investigations during pandemic restrictions: initial assessment of recent peat landslides in Ireland. *Landslides* (2022) 19: 515-525. Published online: 30 December 2021.

expected to result in continuing occurrences of blanket bog failures of various types and sizes. More frequent and intense summer desiccation with associated cracking of the surface peat will make the peatlands more susceptible to failure due to the adverse hydrological effects of subsequent heavy rainfall".[22]

These two papers clearly identify a higher level of risk then suggested in the applicant's further information; and therefore we must conclude that there is significant uncertainty in the risk assessment of peat slides, the probability of which may increase as a consequence of constructing the windfarm in the proposed location.

5.3.5 General Observations on Peat Slope Failures and Peat Slides

Peat slope failures and bog slides are not a recent phenomenon, and possible evidence of peat failures in Ireland has been identified as far back as the Early Bronze Age, around 4,200 year ago, while written accounts of peat failures in Ireland have been traced back to the 1400s.[23]

Historical records show up to 70 failures in last 400 years, which is probably an underestimate of the actual number. There is a notable increase in reported failures from about 1800, and this may in part be due to an increased awareness of the problem as human activities encroached further into peatlands throughout Ireland. An increase in high-intensity rainfall events, known to be a primary trigger of landslides, may also be associated with the greater number of events particularly towards the latter part of the 1900s and during the last two decades (2000 to 2020), as a consequence of climate change.

Following initial failure of the peatland or bog, peat debris tends to rapidly break down into a slurry, which behaves as a viscous fluid. In many cases peat debris becomes confined and flows within a drainage line (stream or valley); and, when the peat debris has entered a drainage line it mixes with any water that may be present and becomes diluted, which further increases its fluidity and mobility.

The volume of peat failures varies widely, from a few thousand cubic metres to a maximum of several million cubic metres, and the distance travelled by a peat slide (the "run out" distance) is more-or-less proportional to the volume. Most peat slides travel less than 1.0km, a few as far as 3.0km, and only a very occasional peat slide travels much further.

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[22] Alan P Dykes, 2011. Natural and anthropogenic causes of peat instability and landslides. Pristine Mire Landscapes, Proceedings of the 13th International Peat Congress, Tullamore, 2008.

[23] Boylan, N., Jennings, P., and Long, M., 2008. Peat slope failure in Ireland. Quarterly Journal of Engineering Geology and Hydrogeology, **41**, 93 – 108.

Triggering factors include intense rainfall, loading of the peat surface, excavation of peat deposits, and the presence of pre-existing factors, such as morphological, geomorphological, hydrological and geological characteristics – all of these increase the risk of a peat slide. High-intensity rainfall or periods of prolonged rainfall are the most common cited causal factor for peat failures. Slope inclination is also a significant factor, with the vast majority of the failures occurring on slopes of between 4º and 8º.

A more recent report on the Shass Mountain peat slide provides some further relevant and useful information about peat slides in general.[24]

The Shass Mountain peat slide report provides a table of recent peat slides or slippages, with brief details of location, length, volume, slope and contributing factors, where known; and we reproduce this table below (see table 5.1 below).

According to this report, site-dependent causes include land use, peat depth, slope angle, slope morphology, hydrogeology and the interface of the peat and underlying stratum. Site-independent causes include intense rainfall events, the appearance of tension cracks due to dry weather and drying out of the peat, loading or compression of peat caused by construction activities, excavation or removal of peat, and historical land uses including peat cutting or forestry.

Weather was the major contributing factor to many of the peat slippage events listed in the table. The sites of most events were subjected to prolonged spells of rainfall in the weeks or months prior to the event or were subjected to intense localised showers just before the event. Many of these peat slides took place in the latter months of the year, i.e. August to December, correlating with the likelihood of increased heavy rainfall events after dry summer periods.

After prolonged rainfall, the unit weight of peat can increase significantly; and, if the area has experienced extended dry spells and warm weather, tension cracks can appear in the peat mass as it becomes desiccated. These cracks can expose the underlying substrate and can increase the chances of shear failure occurring at the peat-rock interface, particularly if the underlying rock is impermeable or has low permeability. After intense showers, water pressure in the peat can increase rapidly, increasing the likelihood of a peat slide. Deep cracks in upland peat have also been recorded in forestry plantations, allowing water to penetrate vertically into the lower peat layers, and increasing the probability of a peat slide.

What can we learn from these and other reports ?

Firstly, while pre-existing factors and immediate causes are generally well known and understood, the precise location and time of a peat slide or slippage cannot be forecast; there are too many variables involved.

[24] Shass Mountain Peat Landslide – Factual Report. RPS, October 2020.

Secondly, while the volume of material which may slide can be approximately correlated with the depth of peat at the site of a slippage, the total volume is impossible to predict, as the cohesion of the peat may have been affected by construction activities at the site of the slippage, or lower down the slope (there is evidence that lower downslope peat may be picked up and carried by the sliding material, adding to the overall volume).

Thirdly, from observation of the moving mass of a peat slide, it would seem very difficult, if not impossible, to stop the flow by creating any form of barrier after the flow has started.

Fourthly, it appears that the best way in which to reduce the probability of a peat slide occurring is to completely avoid any large-scale construction or excavation in areas where the risk of a peat slide is not negligible.

Table 5.3.5 Peat Slope Failures and Bog Slides

Event Location	Date	Slide length	Displaced volume	Slope (°)	Contrib-uting factor(s)	Other comments
Derry-brien, Co Galway	16 Oct 2003 29 Oct 2003	2,450m	450,000m^3	<10°	Windfarm construction activity Zone of weak peat Natural drainage channel Heavy rainfall	750m x 270m rupture Low per-meability underlying rock.
Polla-tomish, Co. Mayo	19 Sept 2003	N/A	200,000m^3	30°-60°	80mm rainfall in 2-hour period Prolonged warm weather periods in preceding summer months	41 distinct slippages Highly impermeable bedrock
Ballincollig - Maghan-knockane, Co. Kerry	22 Aug 2008 23 Aug 2008	+3,000m	130,000m^3	3°	Heavy rainfall in weeks before event. Turf cutting practices.	N/A

Table 5.3.5 Peat Slope Failures and Bog Slides						
Event Location	**Date**	**Slide length**	**Displaced volume**	**Slope (º)**	**Contrib-uting factor(s)**	**Other comments**
Straduff, Co. Sligo	18 Oct 1984	350m	81,000m^3	3-5°	Evidence of recent burning thus reducing the vegetation cover. Dry summer and then over average rainfall in October. Presence of clay rich drift created slip plane.	Month of October 25% more than average rainfall. 25.9mm of rain fell three days previous to the event.
Yellow River, Co. Leitrim	29 June 1986	150m-500m	35,000m^3	6°-12°	Heavy rainfall during thunder-storms.	Weeks preceding the flood were relatively dry.
Drumkeeran, Co. Leitrim	c. 2006	333m	N/A	3°	Unknown	No other inform-ation known
Gowlaun-revagh, Co. Leitrim	23 Sept 2008	N/A	N/A	N/A	Wedge of bog became dislodged during construction of a road on a windfarm extension.	10km south-west of the Dawn of Hope bridge. N o heavy rainfall in the days prior to event.

Table 5.3.5 Peat Slope Failures and Bog Slides						
Event Location	**Date**	**Slide length**	**Displaced volume**	**Slope (º)**	**Contrib-uting factor(s)**	**Other comments**
Slieve-anorra, Co. Antrim	25 Aug 2020	N/A	N/A		Storm Francis weather event.	Slippage in 2004 after 50mm rainfall in 6 hours. 2,500m^3 slippage in 1980 after 47-97mm rainfall in 45 mins.
Derry-sallagh, Co. Sligo	13 Aug 2008	N/A	N/A	17°	Heavy rainfall – 38.7mm on 13 August.	5 distinct slippages. 35,000m^3 slippage at another time in 2008. 29,000m^3 slippage event in 1945.
Aasleagh Falls, Co. Mayo	31 Dec 2006	N/A	N/A	N/A	Intense rainfall.	Slide re-activated in July 2007.
Clare Island, Co. Mayo	14 Dec 2006	N/A	N/A	N/A	Heavy rainfall.	
Gleniff, Co. Sligo	14 Dec 2006			10º	Water trapped in a hollow burst its banks after six weeks of heavy rainfall.	15m high mudbank blocked 300m section of road.
Cuilcagh, Co. Ferman-agh	21 Aug 1992 22 Aug 1992	300m	9,100m^3	N/A	80mm rain recorded in the days prior to event.	75m (L) x 42m (W) rupture.

Table 5.3.5 Peat Slope Failures and Bog Slides						
Event Location	**Date**	**Slide length**	**Displaced volume**	**Slope (°)**	**Contrib-uting factor(s)**	**Other comments**
Carrow-maculla, Co. Ferman-agh	25 Nov 1979	N/A	20,000m^3	N/A	Heavy rainfall in months preceding event.	100m (W) x 2m (D) rupture.
Glen Docherty, Scotland	Aug 2015	N/A	190m^3 (89m^3 peat)	33°	Heavy rainfall in months preceding event. Localised cloudburst.	22m (L) x 9m (W) rupture.
Teesdale, England	06 July 1963	N/A	4,000m^3 and 1880m^3	9°-17°	Heavy rainfall in June and early July 1963. Saturated peat mass and slope of valley slides.	Slide occurred on each side of the valley.
Shetland Islands, Scotland	19 Sept 2003	N/A	23,000 - 59,000m^3	4°	Extreme rainfall	Multiple events occurred through-out the islands on the same date as the Polla-tomish event.

5.3.6 Peat Stability Assessment – Comparison with the Garvagh Glebe Wind Farm site

On 23 September 2008, a major peat slide occurred at the nearby Garvagh Glebe North wind farm, Corrie Mountain, Drumkerrin, Co. Leitrim.[25] Although local rainfall amounts were low during the seven day period leading up to the Garvagh

[25] Dykes and Jennings, 2011. Peat slope failures and other mass movements in western Ireland, August 2008. Quarterly Journal of Engineering Geology and Hydrogeology 44(1); pp 5-16, February 2011.

Glebe North failure, intense rainfall was recorded in the period of seven to fourteen days prior to the slide.[26]

Because this windfarm is extremely close to the Croagh windfarm, a comparison of site conditions at the Garvagh Glebe windfarm and site conditions at the Croagh wind farm was included in the "*Geotechnical and Peat Stability Assessment Report for Croagh Wind Farm"*, prepared by Fehily Timoney & Company, and submitted as appendix 8-1 of the EIAR, section 9, page 34. As this report has been referenced in the current further information response by the applicant, we consider it appropriate to briefly review the comparison.

The report by Fehily Timoney & Company states that the failure at Garvagh Glebe occurred in 2008 in a low strength deep peat area at the head of a watercourse and natural drainage route, and the failure took place following the construction of a section of access track. Ground conditions comprised blanket peat over a thin soft clay layer with an approximate thickness of 0.2m. The failure occurred within the soft clay layer underlying the peat.

A second, and notably smaller peat failure, also occurred at the Garvagh Glebe site while constructing an access road along a ridge line in the southwest of the site; and this failure occurred on relatively thin peat on steep ground.

The key characteristics of the major failure at Garvagh Glebe were listed by Fehily Timoney & Company as:

1. The site is located at the head of a watercourse/natural drainage route;
2. Peat thicknesses are of up to 6.3m;
3. There is a layer of weak clay below peat; and,
4. The undrained shear strengths of the peat ranged from 2 to 4kPa.

The report noted that there is a soft silt/clay deposit underlying the peat at Croagh; and the deposit recorded on the Croagh site, based on descriptions from trial pits, appears similar to the deposit present on the Garvagh Glebe site. However, the presence of an underlying soft deposit is quite common on peatland sites and some of these sites have been successfully developed in the past.

The report goes on to state that, in comparison to the location where the major failure occurred on the Garvagh Glebe site, the proposed development footprint at the Croagh site has significantly less likelihood of a similar failure, for the following reasons:

1. The heads of watercourse/natural drainage routes have been avoided;

[26] Long, Michael, Paul Jennings, and Roselyn Carroll, 2011. "Irish Peat Slides 2006 – 2010"; published March 2011. Accessed via the UCD Research Repository.

2. There is a reduced peat thicknesses at the Croagh site (the deeper peat deposits on the Croagh site are located in areas of flat terrain);
3. Relatively higher strength clay exists below the peat at the Croagh site; and,
4. Higher undrained shear strengths in peat (5 to 45kPa with an average of 18kPa) have been recorded on the Croagh wind farm site.

Our observations are that the proposed Croagh wind farm site would **not** have a significantly less likelihood of a peat slippage or failure similar to that which occurred at Garvagh Glebe, for the following reasons:

1. The heads of watercourses and natural drainage routes have **not** been avoided, as is clear from figure 4-3 on page 16 of Appendix 8-1 of the EIAR; this figure shows that turbines T01, T03 and T10 would be located very close to the headwaters of streams; while the area of the 2016 peat slide is very close to the location of turbine T05 (see copy of **Figure 4-3** below);

2. Even though the report states that there is a reduced peat thickness at the Croagh site, with some deeper areas of peat, this information does not conclusively show that a peat slippage would not occur in the future;

3. Even though the report states that higher undrained shear strengths of the undisturbed peat have been recorded on the Croagh wind farm site, there are some areas with shear strengths as low as 5kPa, very close to the upper range of the shear strength of 4kPa in the undrained peat at Garvagh Glebe; and that leaves little or no margin of safety;

4. The wind turbines on the Garvagh Glebe site are 70 metres high, while the proposed turbines at the Croagh wind farm site would have a height of up to 170 metres;

5. It is obvious that the amount of excavation, construction of the turbine power bases, and the specifications of the road is required to carry these much larger and heavier towers and turbines, would involve much higher heavy loadings on the peat and the underlying clay layer, and it cannot therefore be stated that the proposed wind farm at the Croagh site has less likelihood of a peat slippage or failure similar to which occurred at Garvagh Glebe; and,

6. It is therefore our observation that the Croagh windfarm site is subject to a level of risk of peat slippage or peat failure no less than the Garvagh Glebe site, and possibly even greater because of the larger turbines involved, i.e., the proposed site is inherently unsuitable.

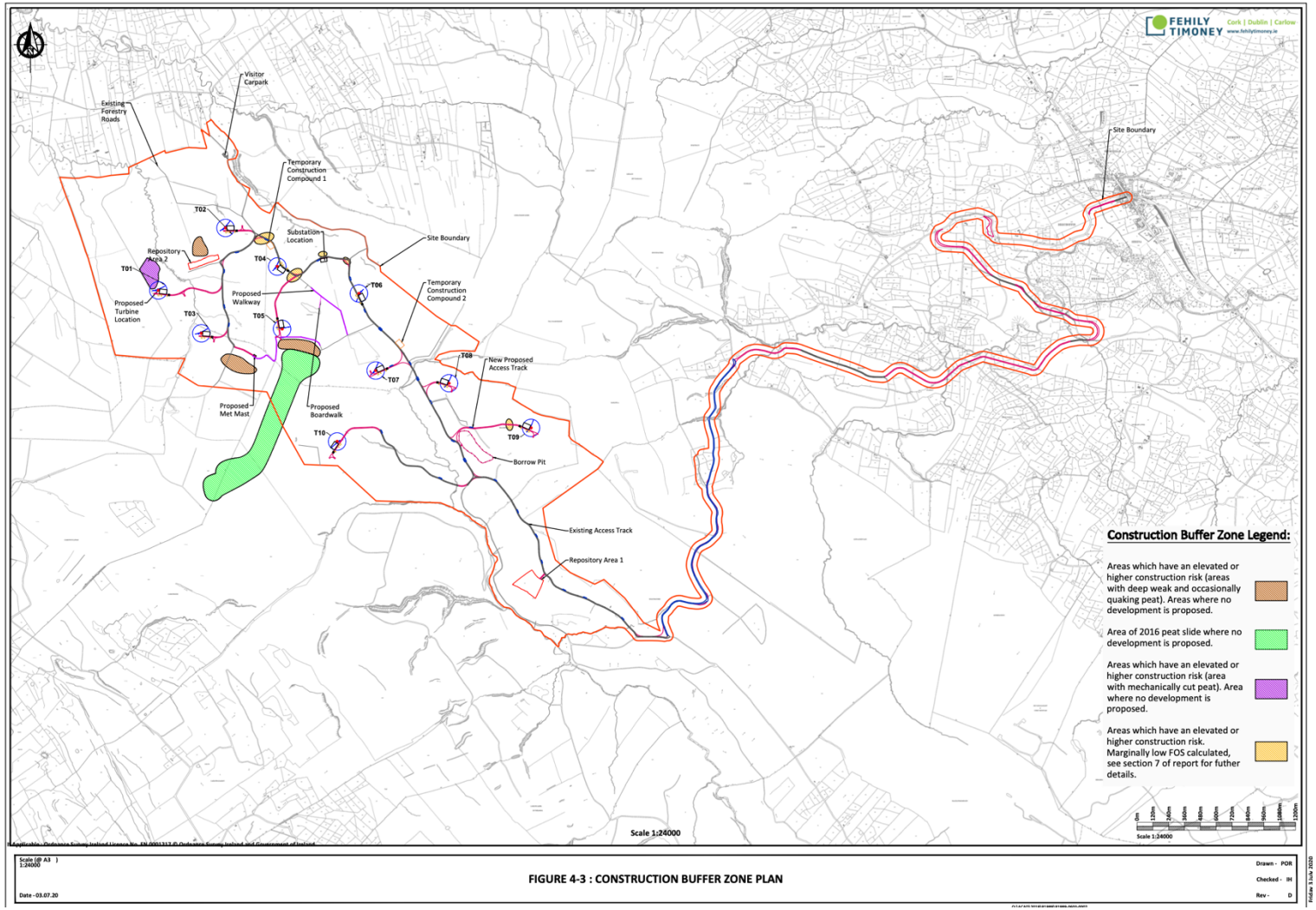


Figure 5.3.6 Copy of Figure 4-3, from page 16 of Appendix 8-1 of the applicant's EIAR, showing area where a peat slide occurred in 2016, close to proposed locations of turbines T01, T03 and T10.

5.3.7 Peat Stability – Reason for the Board's Refusal to Permit the Letter Wind Farm (ABP 319480-24) on a site close to the proposed Croagh Wind Farm

It is our submission that this planning application for a 4-turbine wind farm at Letter and other townlands in County Leitrim, and the reasons for its refusal by Leitrim County Council and by the Board, on appeal, are very relevant to the Board's reconsideration of the proposed Croagh wind farm.

On 19 January 2024, Letter Wind Farm Limited made a planning application to Leitrim County Council for four-turbine wind farm with an expected 40-year operational life, on a site of approximately 45 hectares, in the townlands of Letter, Boleybaun, Stangaun and 10 other townlands (total 13), approximately 4.2km from the site of the proposed Croagh wind farm, and approximately 3km west of Drumkerran, Co. Leitrim (Leitrim Co. Council planning reference **24 / 60008**).

On 13 March 2024, Leitrim County Council refused planning permission for this proposed wind farm; the principal grounds for refusal being:

i) "*the elevated risk of a major accident arising from a landslide event associated with the proposed wind farm",* as a consequence of which which the planning authority considered that "*the proposed development would pose a serious danger to the environment, potentially causing extensive pollution of water bodies within and in the vicinity of the site".*

ii) "*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".*

iii) The Planning Authority aso 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"*;

iv) "*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"*; and,

v) "*The proposed development would be considered contrary to the proper planning and sustainable development of the area".*

Other grounds for refusal of this wind farm included included the "*risk of pollution of watercourses in the area"* and the possibility that the proposed wind farm would adversely affect the integrity of Lough Gill SAC (Site code 001976) and Unshin River SAC (Site code 001898); and, in view of the conservation objectives of these two sites, "*the Planning Authority is precluded from granting planning permission".*

A third reason for refusal is that, "*on the basis of the information submitted with the planning 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, thereby indicating this area to be an ecologically sensitive area of some ornithological significance."*

And, "*given the extent of existing wind farm activity in the wider area, to which the proposed development would add, 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"*; and,

"*In this regard it is considered that the proposed development would be contrary to the proper planning and sustainable development of the area".*

The above decision and grounds for refusal were based on a very comprehensive 97-page report by the Council's Acting Senior Executive Planner.

The decision was appealed to An Bord Pleanála by the applicant, Letter Wind Farm Ltd (First Party Appeal; case ref. **ABP 319480-24**); the Board's Inspector recommended refusal of permission; and following consideration of the Inspector's 142-page report, the Board refused planning permission on the following ground:

> "*Having regard to: -*
>
> *(a) the classification of the site by Geological Survey Ireland as being of low to moderately high landslide susceptibility,*
>
> *(b) the high density of historical landslides in this area, including within the site itself,*
>
> *(c) the tension cracks recorded as being present on the site,*
>
> *(d the upland and sloping nature of the terrain,*
>
> *(e) the high rainfall prevalent in the area,*
>
> *(f) the high density of drainage channels throughout the site, both natural and manmade,*
>
> *(g) the proximity of the Owengar River which bounds the site to the west,*

(h) the volumes of peat and other spoil material requiring excavation, handling, storage and management on the site,

On the basis of the information submitted with the application and appeal, the Board cannot be satisfied that the proposed development would adequately mitigate risks associated with potential landslide as a consequence of the development of the proposed wind farm.

In view of the above, it is considered that the proposed development would constitute an unacceptable risk of pollution of watercourses in the area. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area".

As we have demonstrated in this submission, the environmental factors which provided the Board with grounds for refusal of the much smaller proposed Letter Wind Farm apply equally to the proposed Croagh Wind Farm, the subject of our submission. The Board should therefore refuse planning permission for the Croagh Wind Farm on similar grounds, together with other grounds including risk to protected species of birds and other fauna, loss of a significant area of upland habitats, and the number and excessive concentration of wind farms in this area of County Leitrim. These further reasons are addressed in other sections of our submission.

5.3.8 Impacts of Climate Change as a Risk Factor

One of the most significant issues which An Bord Pleanála has raised in the Board's previous request for further information is that the proposed peat "*repositories would be effective in providing for the permanent retention of peat and other materials"*. It is our understanding that the term "*permanent"* means many decades, perhaps four or five decades at least, and maybe more; in the case of an engineering structure, or a building for example, "permanent" is normally taken to mean at least 100 years!

It is therefore essential that the applicant's EIAR and further information response should have considered the impacts of climate change over a longer term, and not merely for the next 10 or 20 years.

In particular, we would suggest that the applicant should have considered in more detail the effects of extreme rainfall events likely to occur in the area, including the 1-hour, 12-hour, 24-hour and 48-hour events with recurrence intervals of 10, 25, 50 and 100 years. This is the standard method used for determining extreme rainfall volumes, and these are the rainfall events that typically cause most flooding and damage.

It is also appropriate to point out that Met Éireann's rainfall projections for the next few decades show that the frequency of heavy precipitation events will increase by approximately 20% during the winter and autumn months.[27]

An IPCC report on regional climate projections states that over Northern Europe between 1980-1999 and 2080-2099 the median change in precipitation was a 15% increase for the months of December, January and February, 12% for March, April and May, 2% for June, July and August, and 8% for September, October and November. Relative to the wettest period in 1980-1999 there was a 43% increase in heavy precipitation events in December, January and February.[28]

An assessment from C4I (Community Climate Change Consortium for Ireland), also quoted in Met Éireann's Technical Note 61, states that over Ireland by mid-century there is likely to be:

1. An increase of about 15% in winter rainfall amounts;
2. Drier summers with 20% lower precipitation in some areas, most likely in the east and southeast;
3. A 20% increase in the two-day extreme rainfalls, especially in northern areas and smaller increases in the one-day and five-day extremes; and.
4. More frequent rainfall extremes in autumn.

A more recent research report by the Environmental Protection Agency quotes the Flood Risk Assessment made by the Office of Public Works in 2018, which considered "*the assessment of risk for two potential future scenarios, the Mid-Range Future Scenario – increase in rainfall of 20% and sea level rise of 500 mm (20 inches), and High-End Future Scenario – increase in rainfall of 30% and sea level rise of 1000 mm (40 inches)*".[29]

It is our understanding that the predicted increase in winter precipitation will cause damage to buildings and infrastructure, along with "*drainage capacity unable to cope during periods of intense rainfall" and the risk to water quality*".[30]

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[27] https://www.met.ie/climate/services/rainfall-return-periods

[28] Met Éireann, Technical Note 61: "Estimation of Point Rainfall Frequencies"; D.L. Fitzgerald, October, 2007.

[29] Enhancing Integration of Disaster Risk and Climate Change Adaptation into Irish Emergency Planning; EPA Research Report No. 419; by Peter Medway, Dug Cubie and Martin Le Tissier; MaREI, the SFI Research Centre for Energy, Climate and Marine, Environmental Research Institute, University College Cork; August 2022.

[30] Built Environment Climate Resilience and Adaptation; EPA Research Report No. 418; by Mark Scott, Louise Burns, Mick Lennon and Oliver Kinnane, School of Architecture, Planning and Environmental Policy, University College Dublin; August 2022; Section 3.4.1, page 27.

All this data would suggest an increase in extreme rainfall events for durations of 24 hours or more, especially in autumn and winter. These predicted increases in rainfall, and especially in the number and frequency of heavy precipitation events, have not been adequately considered by the applicant in any of the reports provided (including the further information response), and it is our observation that within the next decade the proposed mitigation measures to control surface water run-off from the proposed site would be inadequate and easily overwhelmed, as a consequence of climate change.

It is our observation that by failing to take the long-term effects of climate change into account, the applicant further information response has not adequately answered the question set by An Bord Pleanála, namely, can the proposed repositories provide for the permanent storage of peat and other materials without significant risk of adverse environmental impacts.

And it is therefore our further observation that the proposed wind farm construction and operation, despite applicant's proposed mitigation measures, and taking into account the changing weather conditions which are occurring as a consequence of climate change, would seriously increase the risk of peat slides and/or peat slippages on the site, or in its immediate vicinity.

5.4 Connection to the National Grid

The proposed connection of the Croagh wind farm to the national electricity grid was described in the application as via a 6.2 kilometre 38kV underground cable running alongside the site roads and a public road from the proposed on-site substation to the existing Garvagh 110kV electricity substation in the townland of Seltan; including nine watercourse crossing locations, and passing through the Corry Mountain Bog NHA (site code 002321), if permitted).

The first problem which we suggest should be noted by the Board is that the proposed public road upgrading is not part of the planning application; the applicant does not own the road, and the County Council cannot grant planning permission to the applicant for works on a property which the applicant neither owns nor has control of.

Secondly, the grid connection route maps are not sufficiently detailed in the applicant's EIAR.

For example, the number of road frontages of houses along the road which will carry the underground grid connection cable do not appear to be shown, and there is no information about whether there are any pipes for water or electricity which could be affected by the laying of the cable. Figure 3 on page 13 of Appendix 4-6 of the applicant's EIAR appears to show a house entrance gate.

Neither mains water pipes or the ESB services is marked on any maps, including water pipes that landowners may have laid from one side of the road to the other

for the use of farm animals. If these connections exist, this information should have been shown on the maps accompanying the application.

Section 10 on page 23 of Appendix 4-6 (*Outline Construction Methodology – Croagh Wind Farm 38kV Grid Connection [Garvagh]*) of the EIAR states merely that:

> *"In order to facilitate the installation of the proposed UGC, it may be necessary to relocate existing underground services such as water mains or existing cables. In advance of any construction activity, the contractor will undertake additional surveys of the proposed route to confirm the presence or otherwise of any services. If found to be present, the relevant service provider will be consulted with in order to determine the requirement for specific excavation or relocation methods and to schedule a suitable time to carry out works".*

This brief description provides no information about the existing underground services, disruption of which would require the permission of householders using these service connections, and on which they rely.

It is therefore our submission that the Board should refuse permission for the proposed grid connection on account of the lack of clarity, lack of detail and the significant degree of uncertainty concerning the grid connection route and how the cable will be installed.

A further point which we wish to make is that the Board cannot carry out or undertake an Environmental Impact Assessment of the proposed grid connection (which the Board is required to do, by Irish law and in accordance with the EU Directive on EIA), for the simple reason that there is not a sufficient amount of definitive and precise information, finalised detailed designs, or certainty about what particular works will be carried out, or where and how they will be carried out, in the applicant's EIAR and project description.

When requesting further information, Leitrim County Council raised only one question on the subject of the cable connection to the national grid (section 6.4 below; Question 51), and this was concerned primarily with the locations where the proposed cable would cross watercourses and streams between the on-site electricity substation and the existing Garvagh 110kV Electricity Substation, in the townland of Seltan.

The updated Natura Impact Statement states that:

> *"the grid connection cabling route is approximately 6.2 kilometres in length, and all works required to connect the proposed wind farm to the national grid can be undertaken within the site boundary".*[31]

[31] Updated Natura Impact Statement, paragraph 3.2.6, page 10.

> "*On exiting the windfarm site the grid connection will follow the existing local road (L4282) for approximately 1.8km and will then follow the existing unbound forestry access road (ED2) for approximately 300m into the Garvagh substation"*.[32]
>
> *"The grid connection to the Proposed Development will be via the existing 110KV Garvagh substation with the cable layed* [sic] *on approximately 4.7 kms of the improved L4282 leading to the site"*.[33]

It is our observation that these statements are contradictory – either the grid connection cable route is within the site boundary (as stated in the first quotation above); or, if it traverses or follows an existing public local road (as stated in the second and third quotations), then it cannot be within the site boundary. In the latter case, as the local road is not in the ownership of the applicant, but is presumably under the control of Leitrim County Council, a letter of consent from the Roads Department of the Council should have been included in the planning application. However, no such letter appears in the planning application, even though there are several letters from the owners of land adjacent to the L4282 local road.

Furthermore, the applicant has stated that the L4282 local road will be upgraded as part of the proposed wind farm development, but the public road upgrading is not described in the planning application; the applicant does not own the road, and the County Council cannot grant planning permission to the applicant for works on a property which the applicant neither owns nor has control of.

Neither mains water pipes or the ESB services is marked on any maps, including water pipes that landowners may have laid from one side of the road to the other for the use of farm animals. If these connections exist, this information should be shown on the maps accompanying the application; we drew attention to this issue in our earlier submission in September 2020, but there is no indication that the applicant has considered it.

In the applicant's EIAR, section 10 on page 23 of Appendix 4-6 (*Outline Construction Methodology – Croagh Wind Farm 38kV Grid Connection [Garvagh]*) states merely that:

> *"In order to facilitate the installation of the proposed UGC, it may be necessary to relocate existing underground services such as water mains or existing cables. In advance of any construction activity, the contractor will undertake additional surveys of the proposed route to confirm the presence or otherwise of any services. If found to be present, the relevant service provider will be consulted with in order to*

[32] Updated Natura Impact Statement, paragraph 4.3.1.1, page 38.

[33] Proposed Croagh Wind Farm Development – Environmental Impact Assessment Report, 06 July 2020, Chapter 14, page 14-22.

determine the requirement for specific excavation or relocation methods and to schedule a suitable time to carry out works".

This brief description provides no information about the existing underground services, disruption of which would require the permission of householders using these service connections, and on which they rely.

It is therefore our observation that the application for the proposed connection to the national grid is significantly incomplete, contains conflicting information, and should be a reason for the Board to refuse planning permission.

6. PLANNING HISTORY OF THE APPLICATION SITE, LOCAL PLANNING CONTEXT, REQUESTS FOR FURTHER INFORMATION BY LEITRIM COUNTY COUNCIL AND AN BORD PLEANÁLA, RESPONSES TO THESE REQUESTS; APPEALS TO AN BORD PLEANÁLA, DECISION BY AN BORD PLEANÁLA

6.1 Planning History of the Application Site

There has been only one previous planning application on the subject site, and that was the application made by Coillte CGA on 13 July 2020 (Leitrim County Council Planning Reference **20 / 106**) for the same wind farm as in the present application. This application was deemed by the planning authority to be incomplete, it was invalidated on the date of application, and was withdrawn subsequently by the applicant.

6.2 Other Wind Farms in Proximity to the Application Site

One of the most remarkable aspects of this planning application for the Croagh Wind Farm is the extraordinary number and concentration of wind farms and wind turbines in the area immediately surrounding the subject site, and within 10km of the site. A map showing this density of wind turbines is attached as **Appendix I** to this submission.

The following list is taken from Section 2.5.1 of the applicant's Environmental Impact Assessment Report, supplemented by information from Leitrim and Sligo County Councils; planning websites and from the website of An Bord Pleanála.

1. On 31 January 1995, James T. Kelly applied to Roscommon County Council for permission to erect 10 wind turbines, a substation, access roads, carpark and a meteorological mast, at Largan, County Roscommon (Planning reference **94/582**); planning permission was granted on 06 March 1995, subject to conditions.

2. On 22 December 1995, Arigna Fuels Limited applied to Leitrim County Council for permission to erect two 600kW wind turbines 40 metres in height with a blade diameter of 40 metres, an associated switchroom and a connection to an existing powerline at Spion Kop, Greaghnaslieve, County Leitrim (Planning reference **95/12501**); permission was granted on 13 June 1996, subject to conditions.

3. On 28 June 1996, Colham Energy Ltd applied to Leitrim County Council for permission to erect 8 wind turbines 42 metres in height, with rotor blades of 42 metres in diameter, making a total height of 63 metres, at Corry Mountain, Seltannasaggart and Liscuillew Upper, County Leitrim (Planning

reference **96/12794**); permission was granted on 25 October 1996, subject to conditions.

4. On 23 December 1997, Orliven Limited applied to Leitrim County Council for permission to erect 12 wind turbines with towers of a height not exceeding 50 metres and rotor diameter not exceeding 48 metres, along with a control building and ancillary equipment for generation of electricity at Boleymaguire and Seltan, County Leitrim (Planning reference **97/13602**); permission was granted on 27 January 1999, subject to conditions. The duration of the planning permission was subsequently extended to 26 April 2005.

5. On 22 July 1998, Waterfern Limited applied to Sligo County Council for permission for the erection of 4 wind turbines with towers not exceeding 46 metres in height and rotor diameter not exceeding 54.25 metres with control building and ancillary equipment for generation of electricity at Carrane Hill, Carrownadargny, Geevagh, County Sligo (planning reference **98/533**); permission was refused by Sligo County Council on 11 February 1999; the Council's decision was appealed to An Bord Pleanála and planning permission was granted by the Board on 07 October 1999, subject to conditions.

6. On 26 November 1998, Mr. Conor Ronan applied to Sligo County Council for permission to erect 6 wind turbines, 45-50m in height with rotor diameter not exceeding 55m and a wind measuring mast, height not exceeding 50m, site roads, notice boards, control building, ancillary equipment, etc., at Geevagh, County Sligo (Planning reference **98/861**); the application, was initially invalided, but was subsequently validated on 07 January 1999, and planning permission was granted on 02 July 1999; the decision was the subject of a third party appeal to An Bord Pleanála, and the Board granted permission on 24 February 2000, subject to conditions; the applicant subsequently requested an extension of time; this was agreed on 12 December 2005, with an extension of time to 22 March 2006.

7. On 16 November 1998, Vestas Wind Systems A/S applied to Leitrim County Council for permission to erect 2 Monitoring Wind Masts close to an existing turbine, each with a maximum height of 54.75 metres at Seltannasaggart (Corry Mountain), County Leitrim (Planning reference **98/14248**); permission was granted on 28 July 2999, subject to conditions.

8. On 07 January 2000, Gaoithe Saor Teo (GST) applied to Leitrim County Council for permission to extend an existing windfarm (permission granted in 1996; reference 12797) by installing 6 wind turbines, one substation, one 40-metre monitoring mast and associated equipment, and an extension of an existing access road, at Moneenatieve, County Leitrim (Planning reference **00/7**); permission was granted by Leitrim County Council; the

decision was appealed to An Bord Pleanála by the Irish Peatland Conservation Council; the Board's Inspector recommended refusal for reasons which included fragmentation of the upland blanket bog by the proposed roads and turbines; but permission was granted by the Board (ABP Ref: **PL12.119351**) on 28 November 2000.

9. On 21 December 2000, Gaoithe Saor Teoranta applied to Roscommon County Council for permission to extend an existing windfarm by installing 9 wind turbines, one sub-station, one 45-metre monitoring mast and associated equipment at Altagowlan, Arigna, County Roscommon (planning reference **00/1979**); permission was granted on 21 September 2001, subject to 36 conditions.

10. On 10 October 2002, Seamus Rynn and Thomas Tuohy applied to Roscommon County Council for permission to erect 2 wind turbines, electrical sub-station, site entrance and access roads, at Seltenaveeney, County Roscommon (Planning reference **02/1094**); permission was granted on 28 January 2003, subject to 23 conditions.

11. On 20 December 2002, John & Kevin McLoughlin applied to Roscommon County Council for permission to develop one wind turbine, a site entrance and a site access road at S.H.H. Convent, Ardsallagh Beg, Seltanaveeny, Arigna, County Roscommon (planning reference **02/1374**); permission was granted on 23 April 2003, subject to 21 conditions.

12. On 25 March 2003, Hibernian Wind Power Ltd / Coillte Teoranta applied to Leitrim County Council for permission to develop a wind energy project comprising thirteen wind turbines, up to 70 metres high, with blades of up to 40 metres length, each turbine having a nominal rated capacity of approximately 2.5MW, access tracks, a fenced electrical compound comprising a single-storey control building and switchyard, and an anemometer mast at Garvagh Glebe, County Leitrim (Planning reference **03/257**); an Environmental Impact Statement was submitted; permission was granted on 11 August 2003, subject to 11 conditions. Construction of this wind farm led to a peat slope failure, described in section 5.3.6 above.

13. On 07 April 2003, Airtricity Developments (Ireland) Ltd applied to Leitrim County Council for permission to construct a windfarm consisting of 25 wind turbines of 60m hub height with associated transformers and other associated works at Lackagh, Dergvone,, Buckhill, Barr, Larkfield, and Gortermone, Dromahair, County Leitrim (Planning reference **03/301**); permission was granted by the Council on 22 December 2003, subject to 16 conditions; the decision was the subject of a third party appeal to An Bord Pleanála refused on 02 June 2004.

14. On 14 April 2003, Stewart Hydro Ltd applied to Leitrim County Council for permission to develop an electricity generating windfarm consisting of 12

wind turbines, at Tullynamoyle, County Leitrim (Planning reference **03/331**); permission was refused on 02 June 2004.

15. On 01 December 2003, Hibernian Wind Power Limited applied to Roscommon County Council for permission to construct a wind energy project comprising 11 wind turbines up to 70 metres high, with blades of up to 40 metres length, each turbine having a rated electrical output of approximately 2500kW, access tracks, a fenced switchyard comprising single storey control building, and an anemometer mast; and all associated works at Tullynanaw, Arigna, County Roscommon (Planning reference **03/1486**); permission was granted on 14 June 2004, subject to 26 conditions.

16. On 16 December 2004, Orliven Limited applied to Sligo County Council for permission to retain and complete all works (670 metres of road) previously granted under planning reference 98/533, and for permission to erect 4 wind turbines and ancillary equipment for the generation of electricity at Carrane Hill, County Sligo (Planning reference **04/1315**); permission was granted on 23 June 2005, subject to 12 conditions.

17. On 10 October 2005, Stewart Hydro Ltd applied to Leitrim County Council for permission to erect an electricity generating windfarm consisting of 6 wind turbines, and site works at Tullynamoyle, County Leitrim (Planning reference **05/691**); permission was granted by Leitrim County Council on 02 June 2006 following receipt of further information; and, following a third party appeal to An Bord Pleanála, permission was granted by the Board on 14 May 2008 (An Bord Pleanála reference **218384**), subject to 18 conditions.

18. On 28 February 2006, Orliven Limited applied to Sligo County Council for permission to erect 2 wind turbines with towers 44 metres in height and rotor diameter of 52 metres and ancillary equipment for the generation of electricity (being an extension to the wind farm referred to in planning ref no. 04/1315) at Carrane Hill, Carrownadargny, Geevagh, County Sligo (Planning reference **06/136**); permission was granted on 22 May 2006, subject to 12 conditions.

19. On 03 May 2007, Hibernian Wind Power Ltd and Coillte Teoranta applied to Leitrim County Council for permission to erect a 70m anemometer mast for the measurement of wind speed and directions for the lifetime of the wind farm already permitted at Seltan, County Leitrim (planning reference **07/498**); permission was granted on 27 July 2007, subject to 8 conditions.

20. On 09 April 2008, Mr Thomas Tuohy applied to Roscommon County Council for permission to erect 1 wind turbine up to 63 metres hub height, with a rotor diameter of up to 71 metres; with onsite underground electrical cabling and ancillary works at Seltannaveeney, Arigna, County

Roscommon (Planning reference **08/430**); permission was granted on 19 January 2009, subject to 20 conditions.

21. On 16 April 2008, Mr John McLoughlin applied to Roscommon County Council for permission to construct 1 no. electricity sub-station; with onsite underground electrical cabling and ancillary works at Seltannaveeney, Arigna, County Roscommon (Planning reference **08/466**); permission was granted on 26 November 2008, subject to 6 conditions.

22. On 30 June 2008, Hibernian Wind Power Ltd and Coillte Teoranta applied to Leitrim County Council for permission to extend the duration (granted under planning reference 03/257) of the permission granted for a wind energy project of 13 wind turbines up to 70 metres high, with three blades of up to 40 metres in length, and each turbine with a nominal rated capacity of approximately 2.5 MW, access tracks, a fenced electrical compound comprising a single storey control building and switchyard, and an anemometer mast at Garvagh Glebe, County Leitrim (Planning reference **08/602**); permission was granted on 25 July 2008, subject to conditions.

23. On 25 February 2009, Hibernian Wind Power Ltd applied to Leitrim County Council for permission to alter Garvagh Gleve 110kV/MV substation (granted under planning Reference PL12.VA0001) to include a sewage treatment system and raised percolation area at Seltan, Arigna, County Leitrim (Planning reference **09/76**); permission was granted on 19 May 2009, subject to 3 conditions.

24. On 11 September 2009, Hibernian Wind Power Ltd applied to Leitrim County Council for permission to alter Garvagh Glebe Wind Farm (Planning Ref. No. **03/257**) to install a 67-metre high guyed lattice anemometer mast in substitution for a previously approved 50 metre high guyed pole anemometer mast at Boleymaguire, Arigna, County Leitrim (under planning reference 09/378); permission was granted on 03 December 2009, subject to 9 conditions.

25. On 28 July 2009, Hibernian Wind Power Ltd applied to Roscommon County Council for permission (Planning reference **09/451**) to make an alteration to the Tullynahaw Wind Farm (previously granted under planning reference PD/03/1486) to install a 67 metre high guyed lattice anemometer mast in substitution for a previously approved 50 metre high guyed pole anemometer mast at Tullynahaw, Arigna, County Roscommon; planning permission was granted on 23 October 2009, subject to 2 conditions.

26. On 02 June 2010, Mr John Gillespie applied to Leitrim County Council for permission to construct a windfarm comprising 4 wind turbines, and a 20Kv substation building, at Carrickeeny, Manorhamilton, County Leitrim (Planning reference **10/152**); permission was granted on 24 October 2011, subject to conditions.

27. On 01 May 2012, Kilronan Windfarm Limited applied to Sligo County Council for a 10-year permission to construct a windfarm consisting of 12 wind turbines, a sub-station, a control building and associated equipment, new internal access roads, and upgrading of an existing road, at Derrysallagh, County Sligo (Planning reference **12/133**); permission was granted on 26 April 2013, subject to conditions.

28. On 05 March 2013, Tullynamoyle Wind Farm II Ltd applied to Leitrim County Council for 10-year planning permission (Planning reference **13/52**) for an extension to an existing wind farm permitted under planning reference 05/691; the proposed development would consist of 6 electricity generating wind turbines with a hub height of up to 64 metres and a rotor diameter of up to 71 metres; hardstanding areas, an electrical compound and substation building, associated site roads, drainage and site works, at Tullynamoyle, Killarga, County Leitrim; the planning application was accompanied by an Environmental Impact Statement (EIS) and a Natura Impact Statement (NIS); permission was granted on 12 August 2013, subject to conditions.

29. On 05 March 2015, Kilronan Windfarm Ltd applied to Leitrim County Council for permission to construct an extension to the existing Garvagh Glebe 110kV substation, comprising the construction of a 110kV grid connection substation compound with switchgear housing, equipment plinths, bunds and fencing, oil interceptor and associated site development works at Garvagh Glebe, Seltan, Drumkeeran, County Leitrim (Planning reference **15/53**); permission was granted on 14 January 2016, subject to 6 conditions.

30. On 04 June 2015, Tullynamoyle Wind Farm Ltd applied to Leitrim County Council for planning permission (Planning reference **15/93**) to add two further turbines to the existing 6-turbine wind farm previously granted planning permission under Leitrim County Council Planning Ref. 05/691 and An Bord Pleanála Ref: PL 12.218384, at Tullynamoyle, Killarga, County Leitrim. The application was accompanied by an Environmental Impact Statement and Natura Impact Statement; permission was granted on 31 August 2015, subject to conditions.

31. On 22 September 2015, Tullynamoyle Wind Farm Ltd applied to Leitrim County Council for permission for a development consisting of, and is limited to, the erection of a 3-turbine extension to a permitted wind farm development consisting of twelve (12) electricity generating wind turbines (4 operational, 6 under construction and two permitted); and the overall development would therefore consist of 15 turbines, at Killarga, County Leitrim. The planning application (Planning reference **15/164**) was for three (3) wind turbines which would have a hub height of 64 metres and a rotor diameter of 71 metres, giving an overall height of 99.5 m; hard-standing

areas; a 20 kv electrical substation building, 7.3km underground grid connection one stream crossing, associated site roads, drainage and site works. The planning application was accompanied by an Environmental Impact Statement and Natura Impact Statement. Permission was granted on 01 February 2016, subject to 17 conditions.

32. On 14 March 2017, John Hallinan applied to Sligo County Council for a 10-year planning permission for erection of 4 wind turbines and associated works, at Tawnaghmore, County Sligo (Planning reference **17/93**); permission was granted on 03 June 2017, subject to conditions.

33. On 14 March 2018, Derrysallagh Wind Farm Ltd applied to Leitrim County Council for permission to install approximately 0.46km of underground cable ducting, 1 joint bay and ancillary development laid primarily within the public road corridor, with a section of circa. 0.07km within private lands at Seltan and Boleymaguire, County Leitrim (Planning reference **18/45**); and permission was also sought for the carrying out of remedial works to approximately 0.44km of the installed underground cable ducting which is subject to an application for Substitute Consent to An Bord Pleanála (Ref: **ABP-300811-18**); remedial works include the relaying of backfill material; and permission was also sought for the installation of the electricity cable following the completion of the civil works. The development will comprise part of an overall development in Counties Leitrim, Sligo and Roscommon, consisting of the laying of an underground 38kv electricity cable and associated ducting and ancillary development primarily within the public road to facilitate the connection of the permitted Derrysallagh Wind Farm, Co Sligo (Sligo County Council planning reference: PL 12/133) to the national electricity grid via the existing Garvagh 110kv substation in the townland of Seltan, Co Leitrim. Permission was refused on 08 May 2018 by Leitrim County Council for three reasons; the decision was appealed on 15 June 2018 to An Bord Pleanála by the applicant (first party appeal) (Ref: **301812-18**); the Board's Inspector recommended granting permission; and the Board granted permission on 15 March 2019, subject to 4 conditions.

34. On 08 February 2019, Tullynamoyle Wind Farm 5 Ltd applied to Leitrim County Council for a 30-year planning permission to erect an additional four wind turbines (with hub heights of up to 92 metres with an overall height of up to 150 metres to blade tip) to an existing 15-turbine windfarm, in the townlands of Lackagh, Tullynamoyle, Gowlaun and Altavra, Killarga, County Leitrim, with grid connection to Corderry substation (Planning reference **19/26**); the planning application was accompanied by an Environmental Impact Assessment Report (EIAR) and by a Natura Impact Statement; further information was requested on 03 April 2019; the FI was received on 16 October 2019, and permission was granted on 28 May 2020, subject to 21 conditions.

35. On 05 February 2019, Derrysallagh Wind Farm Ltd. applied to An Bord Pleanála for Substitute Consent, in accordance with section 177E of the Planning and Development Act, 2000, for a 9.58km grid connection from the permitted 10-turbine Derrysallagh windfarm (Sligo County Council planning reference 12/133) and the associated electrical substation (Leitrim County Council planning reference 15/35) to Garvagh Glebe substation, through the townlands of Seltyan and Boleymaguire (County Leitrim), Gubbarudda (County Roscommon); and through Carrowcashel, Tullynure, Straduff, Glen and Ballynashee (County Sligo) (Planning reference ABP **PL21.300811**); the application was accompanied by a "*Remedial Environmental Impact Statement"*; leave to apply was granted by the Board on 21 December 2017, the Board's Inspector recommended that Substitute Consent should be granted, and the application was granted by the Board on 05 February 2019, subject to 4 conditions.

36. On 07 November 2019, AWC Limited applied to Leitrim County Council for permission (a) to decommission and remove from site two existing wind turbines and associated ancillary infrastructure (permitted under planning reference **95/12501**); and (b) to erect one wind turbine with an overall tip height of up to 125 metres and all associated site development works at Spion Kop, County Leitrim (planning reference **19/230**); permission was granted on 16 June 2020, but is the subject of a third party appeal lodged on 16 July 2020 to An Bord Pleanála (Case reference **397627-20**), to be decided by 18 November 2020.

37. On 12 February 2020, Brookfield Renewable Ireland Ltd applied to Leitrim County Council for planning permission to install battery arrays located in 16 container units, a control building, transformer, new site entrance, security fencing, lighting, CCTV, internal access roads and drainage, on a site of approx. 0.44Ha, at Corderry, Belhavel, County Leitrim (Planning reference **20/20**); the application includes a Natura Impact Statement; further information was requested by Leitrim County Council on 01 April 2020; the application is currently on hold, pending receipt by Leitrim County Council of the applicant's response.

38. On 19 January 2024, Letter Wind Farm Limited made a planning application to Leitrim County Council for four-turbine wind farm with an expected 40-year operational life, on a site of approximately 45 hectares, in the townlands of Letter, Boleybaun, Stangaun and 10 other townlands (Leitrim Co. Council planning reference **24 / 60008**). On 13 March 2024, Leitrim County Council refused planning permission for this proposed wind farm; the refusal was appealed to An Bord Pleanála by the applicant (Case reference **ABP 319480-24**); and following consideration of the Inspector's 142-page report, the Board refused planning permission (details of the grounds for refusal are given in section 5.3.7 above).

6.3 Summary of Local Planning Context

The above list of 38 planning applications for wind farms includes 8 in County Sligo, 23 in County Leitrim, and 8 in County Roscommon. All of them are within 10km of the subject site, and they are a subset of the much larger number of wind farms in the Northern and Western Region, shown in Figure 49 on page 163 of the Northern & Western Region Spatial & Economic Strategy, 2020-2032. This map shows a total of 835 wind turbines in the NW Region, with a very strong concentration of wind turbines in the northern part of County Leitrim and the adjacent portion of County Sligo. Maps showing the locations of the nearby wind farms, and a copy of the map in Figure 49 in the Northern & Western RSES are provided in **Appendix I** of this submission.

It is therefore logical that neither the Northern & Western RSES, nor the National Planning Framework should consider that onshore wind farms are the most appropriate way to capture further amounts of wind energy, and that any additional wind farms should be offshore.

Current Government policy clearly favours large offshore wind farms, onshore solar and distributed diverse and multiple small-scale producers, enabled by technological advances in smart metering and intelligent grid systems for distribution of electrical energy. This policy is also helped by the rapidly decreasing price of solar energy, and by the development of floating offshore wind farms, spurred on by technological advances.

Large onshore wind farms are constrained by the capacity of the national grid in the Northern and Western Region, and surplus electricity generation in the area, so that supply exceeds demand.

The previous County Development Plan 2015-2021 emphasised the scenic landscape of County Leitrim, and the importance of the landscape and other elements of the natural heritage for tourism, recreation, human well-being and the basis for a vibrant and diverse social, cultural and economic life in the County. Leitrim, according to the Development Plan, should become a leading centre for eco-tourism and organic agriculture.

That sense of place, culture and the quality, character and distinctiveness of the landscape is also recognised by the Northern and Western Region Spatial and Economic Strategy (RSES).

Any development which damages or diminishes these features of the County should not be permitted unless such development is of vital strategic importance and cannot be located elsewhere, and the proposed Croagh Wind Farm does not fall into this category.

6.4 Planning Authority's Request for Further Information and the Response by the Applicant

On 22 September 2020, Leitrim County Council issued a detailed request for further information, comprising some 78 questions in the areas of:

1. Landscape and visual impact assessment (questions 1, 2 and 3);
2. Nature Conservation and the applicant's Natura Impact Statement, biodiversity loss, and invasive species (questions 5, 6, 7, 9 and 57);
3. Impacts on birds and mammals, including risks to birds, and the cumulative effects on birds, in combination with other nearby wind farm developments (questions 60, 61, 62 and 63);
4. Stability of peat excavated or disturbed by the construction of the wind farm and ancillary developments (questions 10 to 18);
5. The impacts of road construction and earthworks which form part of the overall development (questions 22 to 26);
6. Road access to the site, the proposed haul route for items of heavy equipment, and the impacts of construction traffic on the public roads and on other road users (questions 27 to 36);
7. Site drainage, the existing forestry drainage network; impacts on surface waters; water quality; ecological status of surface waters; fisheries; monitoring of water quality; impacts on groundwater and domestic wells (questions 41 to 49, 52, 59);
8. Impacts of the proposed cable connection to the national grid (question 51);
9. Impacts on aircraft flight procedures, communications and air navigational aids (question 37);
10. Impacts on tourism and residential amenity, including distances to the nearest dwellings; and the impacts of noise and shadow flicker (questions 64 to 71);
11. Proposed mitigation measures and the proposed construction environmental management plan (CEMP) (questions 53 to 56);
12. Details and impacts of proposed tree felling (questions 58, 72 and 73);
13. Proposals for fuel storage on the site, water supply to the site, and wastewater disposal (questions 74, 75 and 76);
14. Detailed proposals for decommissioning of the project at the end of the thirty year period (question 77); and,
15. The applicant's responses to the third party submissions received by the Council (question 78).

On 07 April 2021, McCarthy Keville O'Sullivan Ltd., t/a MKO, submitted to Leitrim County Council on behalf of Coillte Cuideachta Ghníomhaíochta Ainmnithea (Coillte CGA) a detailed response to the request.[34]

6.5 Observations by Wind Aware Dromahair on the Applicant's Response to the Planning Authority's Further Information Request

On 25 May 2021, Environmental Management Services submitted to Leitrim County Council, on behalf of Wind Aware Dromahair, detailed observations on the applicant's reponse to the Council's further information request.

The observations included:

i) Assessment of the impacts of the proposed wind farm construction on surface water, and an assessment of the applicant's proposals to control surface water run-off, site drainage,and peat silt transport; and we noted that while it appears that these measures might be sufficient to protect the downstream SACs and SPA under "normal" conditions, there is a significant risk of failure as a result of very heavy or continuous rain, caused by meteorological conditions which will become more frequent with climate change. In such an event, which is not unlikely, there would be no mechanism to stop silt-contaminated surface water from flowing to Lough Gill and having a damaging effect on the water quality and habitats required by the species for which these sites have been designated;

ii) Potential significant impacts on fisheries, fish populations and fish spawning areas in the upland streams and rivers draining the site of the proposed wind farm; particularly as these impacts were raised as serious concerns by Inland Fisheries Ireland;

iii) peat slope failures and peat slides, including evidence of the loss of stability of peat when it has been mechanically disturbed, leading to the conclusion that the risk of a peat slide is not zero – the possibility of a peat slide cannot be avoided, and therefore the risk of a large quantity of semi-liquid peat and water mixture descending downstream from the proposed wind farm site is not negligible;

iv) the value of intact peatlands for carbon capture and sequestration, and the resulting benefits for climate change mitigation (even though this topic was not mentioned specifically in the further information questions raised by Leitrim County Council), but we considered that the Council

[34] The County Council's request for further information and the applicant's response are available (in the Board's file under the previous case number **PL12.310789**) to the Board's Inspector who will be considering these and other observations.

should be aware of the increasing attention being devoted to this issue in Ireland (this important matter is addressed in greater detail in section 11 below);

v) The possibility of re-wetting, re-vegetating, rehabilitation and integrated management of damaged or cutover peatlands, for biodiversity and climate change mitigation (this matter is also addressed in section 11 below);

vi) Impacts of the proposed wind farm on sensitive and vulnerable species of wild birds (including curlew, whooper swans, golden plover and hen harrier) inhabiting the area around the application site, or observed on the site itself; as these impacts were raised as serious concerns by the Development Applications Unit (DAU) of the Department of Culture, Heritage and the Gaeltacht;

vii) The grid connection between the proposed on-site electricity substation and the existing Garvagh 110kV Electricity Substation, in the townland of Seltan, thereby connecting the wind farm to national grid, especially at the locations where the proposed underground cable would cross watercourses and streams; and our observation that the application for the proposed connection to the national grid is significantly incomplete, and contains conflicting information;

viii) The potential impacts of the proposed wind farm on residential amenity, human health and well-being (for example, the result of noise and shadow flicker, causing sleep disturbance), even though these issues were not mentioned specifically in the further information questions raised by Leitrim County Council, they were raised by third parties, and the applicant was requested to consider them (these impacts are addressed in 13 below);

ix) Potential adverse impacts of the proposed wind farm on tourism in North Leitrim and the surrounding area;

x) Lack of consideration given by the applicant to alternatives, even though. a consideration of reasonable alternatives is required by Directive 2014/52/EU (the EIA Directive) (this issue is addressed in section 5 above); and,

xi) The legal status of the Wind Energy Development Guidelines 2006, and the 2019 Draft Wind Energy Development Guidelines, have neither been finalised nor adopted.

Our observations on the applicant's reponses to the further information questions raised by Leitrim County Council confirmed that there were many reasons why the Council should refuse planning permission for the proposed Croagh Wind Farm.[35]

6.6 Decision By Leitrim County Council To Grant Planning Permission for the Proposed Wind Farm

On 15 June 2021, Leitrim County Council made a decision to grant planning permission for the proposed wind farm, subject to 34 conditions. In addition to the standard planning conditions, the most relevant condtions required the wind farm operator to undertake the following actions:

i) To ensure that the operation of the proposed development, by itself or in combination with any other permitted wind energy development, shall not result in noise levels, when measured externally at nearby noise sensitive locations, exceeding specified levels (condition 8);

ii) To agree in writing with, the Planning Authority a noise compliance monitoring programme for the subject development, including any mitigation measures such as the de-rating of particular turbines (condition 8);

iii) Shadow flicker arising from the proposed development, by itself or in combination with other existing or permitted wind energy development in the vicinity (cumulative shadow flicker), shall not exceed 30 hours per year or 30 minutes per day at existing dwellings or other sensitive receptors; and the proposed turbines shall be fitted with appropriate equipment and software to control shadow flicker in accordance with above requirement (condition 9);

iv) In the event that the proposed development causes interference with radio or television of other telecommunications reception or signals in the area, effective measures shall be introduced to minimise interference with such signals in the area (condition 11);

v) In order to mitigate against interference on viewers' television sets and/or broadcast radio receivers, the developer shall enter into a Protocol Agreement with RTE Transmission Network (condition 12);

vi) The developer shall retain the services of a suitably qualified and experienced bird specialist to undertake appropriate annual bird surveys and monitoring of this site. The monitoring shall include all of the important bird species (Hen Harrier, Golden Plover, Whooper

[35] The observations we provided on the applicant's responses to Leitrim County Council's request for further information are available (in the Board's file under the previous case number **PL12.310789**) to the Board's Inspector who will be considering these and other observations.

Swan and Curlew) and bats identified during the surveys undertaken as part of the preparation of the planning application (condition 15);

vii) The developer shall retain the services of a suitably qualified and experienced Ecological Clerk of Works for the duration of the construction works. The individual shall be based on site for the duration of the works and shall oversee the implementation of all pollution mitigation measures, compliance with environmental management conditions, monitoring and reporting on environmental aspects of the development and liaison with third parties and the Planning Authority (condition 16);

viii) The developer shall ensure that all peat related mitigation and control measures identified in the Peat Stability Risk Assessment are implemented in full and monitored throughout the life cycle of the construction works and monitored throughout the operational phase (condition 17);

ix) Prior to the commencement of development, the developer shall demonstrate to the satisfaction of the Planning Authority, on the basis of the submission of detailed design / on site surveys that the seven (7) locations identified in the Peat Stability Assessment where the Factors of Safety for slopes were below the recommended minimum level of 1.3 calculated on the basis of LIDAR surveys have acceptable Factors of Safety above this minimum accepted level (condition 18);

x) A geo-technical specialist shall be employed on site to supervise the siting of the roads and turbine bases within peat areas identified as high risk or low factor of safety (condition 19);

xi) The Method Statement submitted to the Planning Authority on 7th April 2021 to clear fell 55.1 hectares of forestry within the proposed development site to facilitate turbine erection and construction of the hard standing areas must be fully adhered to along with adherence to best practice guidance during these clear fell works (condition 20);

xii) Where tree felling and replanting are carried out as part of this development, aquatic buffer zones must be provided along all watercourses (condition 21);

xiii) Any alterations to the submitted Construction Transport Management Plan shall be agreed in writing with the Planning Authority, and a condition survey of the roads and bridges along the haul routes shall be carried out (condition 22);

xiv) The developer shall submit to the Planning Authority a site-specific Construction Environmental Management Plan, generally in

accordance with the proposals set out in the Environmental Impact Assessment Report (condition 24);

xv) An Environmental Monitoring Committee shall be established to monitor the construction phase of the development (condition 25);

xvi) The developer shall comply with any reasonable request by the Planning Authority to continue to monitor surface water monitoring on a monthly basis for an agreed period post construction (condition 26);

xvii) No in-stream works shall be carried out without the prior written approval of Inland Fisheries Ireland (condition 27);

xviii) No infrastructure (except for road crossings) shall take place within the 50-metre buffer zone of all water courses (condition 28);

xix) Specified easures to protect watercourses from oil pollution, from pollution by concrete washings, from wastewater and sediment shall be undertaken (conditions 29 and 30);

xx) All plant and machinery used during the works should be thoroughly cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens (condition 31);

xxi) The publicly accessible amenity elements of the development shall incorporate a number of listed requirements (condition 32);

xxii) Prior to the commencement of development, the community gain proposals shall be submitted to Planning Authority (condition 33);

xxiii) On full or partial decommissioning of the wind farm, or if the wind farm ceases operation for a period of more than one year, the turbines concerned and all decommissioned structures shall be removed, and foundations covered with soil to facilitate re-vegetation (condition 34).

The County Council's decision is of no more than historical interest, detailed here for completeness, as the appeals to An Bord Pleanála and the Board's decision have rendered it inconsequential.

6.7 First Party and Third Party Appeals to An Bord Pleanála

Three appeals aginst the above decision were made to An Bord Pleanála by MKO on behalf of the applicant (Coillte CGA), by Environmental Management Services on behalf of Wind Aware Dromahair and by Mr Peter Sweetman on behalf of Wild Ireland Defence CLG.

It is our submission that these appeals include significant observations on the way in which the planning application has been made, significant problems with the application, and the appeals are also mentioned in the Judicial Review case taken by the applicant for planning permission against An Bord Pleanála.

6.7.1 First Party Appeal by the Applicant, 08 July 2021

The grounds of the first party appeal by MKO on behalf of the applicant, Coillte CGA, and the reasons why the applicant is appealing may be summarised as:

1. The appeal supported the decision made by Leitrim County Council to grant planning permission for the proposed wind farm, and asserted that the decision complied in full with the provisions of the County Development Plan and was in accordance with the principles of the proper planning and sustainable development of the area;

2. The principal reason for the appeal was because of the Judgment made by High Court in the judicial review of the Derryadd Wind Farm decision, delivered on 16 June 2021, after Leitrim County Council made its decision on 15 June 2021;

3. The purposes of the appeal, as stated by the applicant, were to:
   - "*allow the provision of greater clarity in relation to the nature of the development"*,
   - "*facilitate the provision of greater clarity in terms of the nature of the consented development"*,
   - "*facilitate the provision of an enhanced definition of the consented development in the interests of clarity"*,
   - "*clarify the nature of the development that has been both assessed and consented",*
   - "*ensure clarity in relation to the turbine parameters"*;
   - "*request that the Board amend the decision to include a condition setting out the detailed parameters of the consented turbines to provide the additional clarity and in so doing acknowledge the requirements of the Derryadd judgment while also ensuring the proper planning and sustainable development of the area"*;

   and for similar purposes throughout the appeal, all of which use the term "clarity", "clarify" or "clarification";

4. A further purpose of the appeal was to request An Bord Pleanála to address the consequences of the Derryadd Wind Farm judgment "*through the provision of additional wording in relation to condition no. 1 of the notification of decision that has issued"*;

5. A further purpose of the appeal requested An Bord Pleanála "*in light of the findings of the Derryadd judgment"* to "*grant permission for the proposed development similar to the decision of the Planning Authority, however, it is*

requested that a condition be included specifying the nature and scale of the turbines which have been consented";

6. This purpose of the appeal is repeated, as the applicant requested the Board to "*amend the decision to include a condition setting out the detailed parameters of the consented turbines to provide the additional clarity and in so doing acknowledge the requirements of the Derryadd judgment"*;

7. An alternative reason and purpose of the appeal was to request An Bord Pleanála to address the consequences of the Derryadd Wind Farm judgment by by asking the Board to request "*revised plans or drawings to be submitted under Article 73 of the Planning and Development Regulations (2001) (as amended)"*.

By any legal standards, this was a most extraordinary and unusual appeal, and our observations on it are provided in section 6.8.1 below.

6.7.2 Third Party Appeal by Wind Aware Dromahair, 12 July 2021

On 12 July 2021, Environmental Management Services submitted on behalf of Wind Aware Dromahair a lengthy and detailed appeal, the principal grounds of which were:

1. There are too many uncertainties in the application to allow An Bord Pleanála to grant planning permission for the proposed wind farm; and, if the Board attempts to undertake an Appropriate Assessment on the basis of the information provided by the applicant, the results of such an Assessment could be legally challenged;

2 An Appropriate Assessment carried out under Article 6(3) of the Habitats Directive cannot have *lacunae* and it must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works on any protected Natura 2000 site – and An Bord Pleanála does not have the legal power to grant planning permission if this exacting standard is not met;

3. The lack of precise detail in the planning application, and the lack of certainty about some critical elements of the proposed wind farm, leave no choice to the Board except to refuse planning permission, given the Judgment of the High Court in *Sweetman -v- An Bord Pleanála [2021] IEHC 390*;

4. The application for the connection to the national grid is significantly incomplete, and contains conflicting information;

5. The applicant has failed to justify a necessity or a need for the proposed Croagh Wind Farm;

6. The applicant's consideration of reasonable alternatives fails to comply with the requirements of the EIA Directive, thereby undermining an essential goal of the EIA process;

7. The Programme for Government does not support further onshore wind farm development; and a decision by An Bord Pleanála to grant planning permission for the Croagh Wind Farm would be to ignore the clear direction expressed in this agreed policy document;

8. The Northern and Western Region Spatial and Economic Strategy (RSES) provides no policy support for the current planning application, which should therefore be refused by An Bord Pleanála;

9. Offshore wind farms are now technically achievable, cost effective and are being promoted by Government policies; and therefore a decision by An Bord Pleanála to permit the proposed Croagh Wind Farm would have the effect of locking into the area of the proposed site for some 30 years a technology which is not only rejected by the local community, but will become out-dated within less than a decade;

10. The Board should not grant planning permission for the proposed wind farm for the reason that the peatlands comprising portion of the subject site could be restored to functionality, and the proposal to construct a wind farm on the application site is completely opposed to the climate mitigation policy to rewet, restore and re-vegetate denuded peatlands, so that they can become active in the removal of CO_2 from the atmosphere;

11. There is an elevated risk of peat slides or bog slides being triggered as a result of the construction of a wind farm on the subject site in an area with a high density of historical landslides; there is a significant risk of an unstoppable peat slide occurring on the subject site as a consequence of construction activities, which include excavation for turbine bases and the building of roads for servicing the construction work on the site;

12. There is a non-negligible risk that an exceptionally heavy rainfall event could overwhelm the proposed surface water containment system; and, if a peat slide were to occur, it could not be effectively controlled and stopped before large quantities of peat fibre and water spread downslope to contaminate sensitive downstream fishery waters;

13. The applicant's response to the risk of a peat slide is unsatisfactory, and the applicant's proposed responses to an imminent peat slide event are inadequate to prevent significant downslope or down-gradient movement of a large mass of peat and water;

14. The applicant's proposed "stilling ponds" or "settlement ponds" would not work effectively, or would fail to work, when confronted with suspended peat

fibres which tend not to sink in water, or which sink very slowly so that they are not precipitated out;

15. The proposed wind farm development could have a significant adverse impact on water quality and the wider environment, and has the potential for cumulative impact because of a cluster of existing nearby wind farms;

16. The proposed wind farm development would create a high risk of increasing the nutrient and suspended solid loading in the downstream receiving waters and receiving environment;

17. The amount of bird mortality caused by collision with turbine blades could be significant for wintering bird species which form part of the Irish breeding population, and the applicant's estimate of 22 collisions per year is very significant, and is certainly not negligible;

18. The area of the proposed wind farm site is a foraging ground for hen harrier, a protected and endangered species;

19. The 34 conditions attached to the decision made by Leitrim County Council to grant planning permission for the proposed wind farm, are not adequate to provide the necessary level of protection to the environment generally, to sites of European Interest (Natura 200 sites: SACs and SPAs), to wildlife, and to the well-being and health of local residents;

20. The layout and description of the proposed wind farm has not been changed in any significant way, despite a number of serious issues and questions raised in Leitrim County Council's detailed request for further information;

21. If the Croagh Wind Farm were to be granted planning permission by An Bord Pleanála, the combined noise levels would become a significant nuisance, especially as the noise would become more continuous;

22. Significant noise nuisance is already occurring as a result of the nearby existing wind farm; the nuisance problem has not been resolved, and if the proposed wind farm were to be permitted, the combined effects of continuous noise would become worse;

23. The proposed wind farm is disproportionate in size for the planned site; and, when considered in combination with other nearby wind farms, would have the effect of transforming the landscape so as to detrimentally alter its character;

24. The scenic and elevated area within which the proposed wind farm would be located already hosts too high a concentration of very large wind turbines; and, that if more turbines were to be permitted, the natural

environment and the quality of the landscape would be irretrievably damaged;

25. The large scale and heights of the proposed turbines are likely to undermine tourism in North Leitrim, and such potential adverse impacts on tourism must be taken into account by An Bord Pleanála; and,

26. The Wind Energy Development Guidelines, 2006, which have not been subject to strategic environmental assessment, do not comply with EU law, and should not be used by An Bord Pleanála as a basis for granting planning permission for the proposed Croagh wind farm; while the Draft Revised Wind Energy Development Guidelines, published in December 2019 by the Department of Housing, Planning & Local Government, have neither been finalised nor adopted.

The appeal included appendices containing a report by Leitrim County Council's Executive Engineer, which raised a number of serious concerns about the proposed development; a report on the increasing importance and potential of offshore wind energy; and a report on peatlands, their instability when disturbed by wind farm construction, their value for carbon capture and climate change mitigation and the benefits of re-wetting, re-vegetation and restoration.

6.7.3 Third Party Appeal by Mr Peter Sweetman, 08 July 2021

The appeal by Peter Sweetman and Associates, on behalf of Peter Sweetman himself and also on behalf of Wild Ireland Defence CLG, stated that An Bord Pleanála has certain legal tasks derived from legal requirements under the Planning Acts, the Environmental Impact Assessment Directive, and Assessment under the Habitats Directive, and these include:

i) The Board must examine the application to ascertain if the contents of the application comply with the Planning Regulations, in particular Articles 22 and 23 of the 2001 Regulations; and he referred to the Judgement of Humphries J, in *Sweetman v An Bord Pleanála* 2020 No. 557 JR;

ii) The Board must also assess the merits of the planning application in accordance with the Planning and Development Act 2000 (as amended) to ensure that the proposed development is in accordance with the proper planning and sustainable development of the area;

iii) The Board must examine the Environmental Impact Assessment Report (EIAR) furnished by the applicant, to ensure that it complies fully with Article 4(4) of the EIA Directive, especially including:

(a) a description of the physical characteristics of the whole project and, where relevant, of any demolition works;

(b) a description of the location of the project, with particular regard to the environmental sensitivity of areas likely to be affected;

(c) a description of the aspects of the environment likely to be significantly affected by the project; and,

(d) A description of any likely significant effects of the project on the environment resulting from the expected residues and emissions, the production of waste, and the use of natural resources, in particular soil, land, water and biodiversity.

iv) The Board is required to form and record a view as to the environmental impacts of the development, considering the **EIA Report** (EIAR) furnished by the applicant, the views of the public concerned, and applying its own expertise or, if no EIAR is submitted, to screen the development for EIA;

v) An Bord Pleanála is the competent authority having responsibilities under the **Habitats Directive**, and must therefore undertake a Screening Report for Appropriate Assessment of the proposed development as required by Article 6(3) of the Habitats Directive 92/43/EEC; and the Board must then make a decision, also required by Article 6(3) of the same Directive, about whether or not the proposed development would adversely affect the integrity of any Natura 2000 site, after having obtained the views of the public concerned.

The appeal by Peter Sweetman cites case law (Irish High Court and the CJEU) which sets out the legal case for screening, the requirement for appropriate assessment, and the legal and scientific standard to which an appropriate assessment must conform.

The appeal by Peter Sweetman then asserted that, because of the total lack of certainty in the information submitted by the applicant, it is not possible for An Bord Pleanála to make a decision to grant permission which would comply with the requirement that:

> *"the assessment carried out under Article 6(3) of the Habitats Directive … cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned."*

and he asserted that "*this is a strict standard and An Bord Pleanála does not have legal jurisdiction to give permission if it is not met".*

Peter Sweetman further asserted in his appeal that:

- the application did not comply with the requirements of the Planning Regulations;

- the EIAR was not compliant with the EIA Directive;
- the Planning Authority had failed to carry out a proper Environmental Impact Assessment;
- the Planning Authority failed to carry out a proper Appropriate Assessment according to the caselaw of the CJEU; and,
- it is not possible for An Bord Pleanála, having carried out its legal functions *de novo*, to grant permission for this development.

6.8 Observations by Wind Aware Dromahair on the First Party and Third Party Appeals to An Bord Pleanála

On 15 July 2021, Wind Aware Dromahair was advised by An Bord Pleanála that two other appeals had been received by the Board, and that submissions or observations could be made to the Board on these apeals.

6.8.1 Observations by Wind Aware Dromahair on the First Party Appeal by MKO on behalf of the Applicant, 10 August 2021

By any legal standards, this was a most extraordinary and unusual appeal, in which the applicant asked the Board to undertake an action which would, in effect, allow a significant change in the description of the turbines and certain other components of the proposed development, for the sole purpose of escaping the consequences of the High Court judgment in *Sweetman -v- An Bord Pleanála* (2020 / 557 JR).

Our first observation was that the real intention of the applicant's appeal was not to clarify the nature of the proposed development, or to bring about any of the "clarifications" repeatedly requested in the appeal; the matter of clarification, we observed, was no more than a smokescreen to cover the obvious intention of the appeal.

Our second observation is that the Board would be more aware than any other agency that Articles 22, 23 and 26 of the Planning and Development Regulations, 2001 to 2020 (as amended), which specify a logical and statutory process which must be followed by all planning authorities, including the Board.

Even though the Regulations allow certain carefully prescribed options which may be availed of by the Board, e.g., to request further information, the legislation was never intended to allow a developer (or a prospective developer) to make a request to interfere with this normal process. For the Board to accede to the applicant's request would be, like the appeal itself, **bizarre and unprecedented**; and it would also, in our opinion, leave the Board open to legal challenge.

Our third observation on the first party appeal by MKO on behalf of Coillte CGA is that the appeal itself constitutes an admission that the original planning application (and it must be stated that this is the only planning application which the Board is legally obliged to consider at that time, and is the only planning application which the Board is now required to reconsider, in accordance with the **High Court Order made on 19 December 2024**) is seriously deficient in terms of the detail provided; or, to state our observation more succinctly: **the applicant's first party appeal is an admission of deficiency**.

In our observations on the First Party Appeal by MKO on behalf of Coillte CGA, we have also considered whether that request could be carried out by the Board.

The request is stated in section 1.2 of the appeal as "*to ensure clarity in relation to the turbine parameters … through the provision of additional wording in relation to condition no. 1 of the notification of decision that has issued*"; and a proposed new text was suggested by the applicant in section 2.2 near the foot of page 8 of the appeal:

> *"(b) The following design requirements shall be complied with in relation to the wind turbines:*
>
> *(i) The total tip heights shall be from 165m minimum to 170m maximum;*
>
> *(ii) The hub heights shall be from 100m minimum to 105m maximum; and,*
>
> *(iii) The blade lengths shall be from 65m minimum to 70m maximum.*
>
> *Reason: In the interests of clarity."*

Our observation on this proposed request, and particularly on the text suggested by the applicant, is that the proposed additional text is incapable of remedying the deficiencies in the planning application, as it falls far short of what is required to rectify the planning application and bring it into line with the strict requirements of Planning and Development legislation.

The appeal alleges that the planning application is supported by

> *"… detailed and accurately scaled and comprehensively detailed site layout plans (19 no. layout plans provided, Drawing no.'s 180511-03 to -22 refer). The submitted layouts detail the locations and extent of all proposed site infrastructure (and amenity works) that include the locations of all proposed wind turbines (with grid references) showing the actual locations that each of the proposed turbines are to be erected, as well as the accurate locations, orientation and extent of the proposed hardstand areas,*

> *roadways, amenity paths, foundations as well as all associated cut and fill requirements. A detailed suite of comprehensive drawings plans and particulars have been submitted including in relation to drainage, construction compounds, borrow pit, peat and spoil repositories, met mast, roads drawings/sections, visitor car park, boardwalk, watercourse crossings, gate details, cable circuits, and all junction arrangements. These drawings show the location and extent of all relevant works associated with the proposed Croagh Wind Farm".*

It was our observation at that time, and it is our observation now, that the details, plans, drawings and particulars which the applicant has alleged have been provided to the planning authority, and therefore to the Board, are not capable of meeting the strict requirements of Articles 22 & 23 of the Planning and Development Regulations; for if they were so capable, the applicant would not need to make the above request to An Bord Pleanála.

It therefore follows that the applicant's proposed amendment alone would fall far short of what is required in terms of details of the development to meet the standards required by Articles 22 & 23 of the Planning and Development Regulations.

As noted in section 6.7.1 above, one of the purposes of the First Party Appeal by MKO on behalf of Coillte CGA was to ask the Board to issue a request for further information, and the appeal threfore suggests (in section 1.2 on page 3 of the appeal) that "*the Board can request revised plans or drawings to be submitted under Article 73 of the Planning and Development Regulations (2001) (as amended)".*

The appeal quoted Article 73 of the Planning and Development Regulations (2001), as amended, which states that;

> *"The Board may, when considering an appeal under Section 37 of the Act, invite the applicant for the permission concerned to submit to the Board revised plans or other particulars providing for the modification of, the development to which appeal relates and an applicant so invited may submit to the Board such number of plans, drawings or particulars as the Board may specify."*

The appeal then implies that the applicant would be very pleased if such a request were to be made by the Board, and would be further pleased to comply with it:

> *"As stated above, it is fully noted that this is matter for the Board to consider, and should additional plans and/or particulars be required, these can be provided".*

It is obvious that the above suggestion has been made by the applicant in the hope that, if the Board were to accept it, compliance with a further information request

would enable the applicant to modify certain details of the planning application, so to assist the applicant and the Board to escape the consequences of the High Court judgment cited above.

It was our observation at that time, and it is our observation now, that while the Board is empowered to make such requests under Article 73 of the PDR, this power has strict limitations, and cannot be directed at reformulating a clearly flawed planning application. It follows that if MKO, who have requested that the Board utilise this power of request, were granted the request, the applicant would attempt to produce revised plans which would detail the proposed development far beyond what has been provided thus far in the planning process at that time.

It is our observation that Article 34 of the Planning and Development Regulations (2001), which empowers a Planning Authority to request revised plans, this power is carefully restricted to a "modification" of the development. Article 34 does not, and cannot, envisage or allow a substantial change to be made to a proposed development. In the first party appeal by MKO, the degree of detail required to rehabilitate what is certainly a substandard planning application is so wide-ranging in so many ways, that it is impossible for plans and particulars to be furnished at that stage, or at this stage now, which do not have the effect of creating an entirely new planning application.

It is thus our observation that clarification cannot be sought for details which have yet to be submitted. The introduction of the words "*clarity"* and "*clarification"* as euphemisms for allowing the applicant to introduce significant amounts of additional detail not seen previously in the planning application, could be considered as is an abuse of the planning process.

Furthermore, **it is our observation** that, in addition to the limitations of the power of the Board under Article 73 of the Planning and Development Regulations (2001), the additional information which would be required to raise the planning application to acceptable levels would require an entirely new EIAR and AA; and we would submit that this is an important point which the Board must take into account when reconsidering the planning application.

The requirements of the Habitats Directive and the EIA Directive envisage a much greater degree of accuracy and public participation than would occur should the developer be permitted to fundamentally alter, not alone the development at this stage, but to produce, for the first time the level of specificity and detail that should have comprised the application from the outset.

It was our final observation on the applicant's first party appeal at that time, and **it is our observation now**, that, should the applicant's request be granted (as urged in the first party appeal), and if the applicant were to be permitted to alter the Plans and Particulars to such an extent, then this would clearly fall foul of the Reporting and Public Participation requirements envisaged by the EIA Directive (Council Directive 2011/92/EU) and the Habitats Directive (Council Directive 92/43/EEC).

In section 9.4.3 below, we have made additional observations on this matter, in the legal context of the Planning and Development Regulations, and the "*Derryadd Judgment".*

6.8.2 Observations by Wind Aware Dromahair on the Third Party Appeal by Peter Sweetman, 10 August 2021

The appeal by Peter Sweetman and Associates, on behalf of Peter Sweetman himself and also on behalf of Wild Ireland Defence CLG (sumarrised in section 6.7.3. above), asserted that the Board must examine the application to ascertain if the contents of the application comply with the Planning Regulations, in particular Articles 22 and 23 of the 2001 Regulations, and the same regulations were cited by Mr Justice Humphreys in *Sweetman -v- An Bord Pleanála* (2020 /557 JR).

Our observations on Peter Sweetman's appeal at that time, and our observations now, are that the appeal is based on information which we have found to be factually correct, the legal cases cited are relevant and appropriate, and the assertions are robust; and we therefore agreed with and supported the grounds of appeal and the conclusions of this third party appellant.

6.9 Further Information Request by An Bord Pleanála, and Response by the Applicant

On 11 November 2022, An Bord Pleanála requested significant further information from the applicant, and this was provided to the Board on 08 December 2022, by MKO, on behalf of Coillte CGA.

The Board's further information request may be summarised as:

1. The Board expressed concern about the adequacy of the further information previously submitted by the applicant in response to separate requests from Sligo and Leitrim County Councils; especially the information received about the stability analysis of borrow pits, peat repositories and settlement ponds, and whether they would effectively provide safe and permanent retention of peat and other materials, without risk of adverse environmental impacts or serious injury to properties;

2. An Bord Pleanála therefore requested information which demonstrated that the applicant had a clear understanding of the existing land and ground conditions underlying the construction of the proposed peat repositories, and the drainage of these repositories, given the type and condition of rock at the repository locations, and the hillside siting of the northernmost peat repository; and,

3. Given that the proposed development is located in a low noise area; and, while recognising that there are substantial separation distances between proposed turbines and existing houses, the Board considers that there is potential for adverse effects arising from low frequency noise and amplitude modulation, and the Board therefore requested further information from the applicant on how such adverse effects would be mitigated in the event that they may arise.

The applicant's responses to the Board's further information request may be summarised as:

1) A lengthy "*Geotechnical and Peat Stability Assessment Response"* report, prepared by Fehily Timoney & Company, and giving details of the construction of the proposed borrow pit and peat repositories, with further stability analyses and contingency measures in the event of failure, using "TALREN 4" slope stability computer software which can model the stability of geotechnical structures, such as the proposed peat repositories;

2) A report by Hydro Environmental Services Ltd, giving information on water quality and drainage control at the proposed borrow pit and at the peat and spoil repositories, supplemented by computer-generated representations of the borrow pit and the peat and spoil repositories, prepared by TANTEK 4D, a Sligo-based engineering firm specialising in digital technology; and,

3) A report by AWN Consulting, addressing the noise and vibration issues raised by An Bord Pleanála, and concluding that there is no residual potential for adverse effects arising from either low frequency noise or amplitude modulation.

All of these reports included, and were based on, references to previous specialist reports, to the relevant sections of the applicant's EIAR (July 2020) and to the applicant's further information responses provided to the two County Councils in March 2021.

6.10 Observations by Wind Aware Dromahair on the Applicant's Replies to the Board's Request for Further Information

The applicant's further information was forwarded to Wind Aware Dromahair on 04 January 2023, with a request by the Board to make submissions or observations.

On 31 January 2023, Environmental Management Services on behalf of Wind Aware Dromahair submitted An Bord Pleanála detailed and lengthy observations on the applicant's further information, including observations on peat stability, peat slippage, site drainage, environmental health effects of noise and disturbance, and

the legal status of the 2006 Wind Energy Development Guidelines for Planning Authorities and the 2019 draft Wind Energy Guidelines.

It is recognised that peat stability, drainage of the site, and the control of surface water run-off are some of the most difficult issues facing the applicant; given the nature of the site; and it was our observation at thatime, and it is our continuing observation now, that these difficulties are a strong indication of the inherent unsuitability of the site.

6.10.1 Surface Water Drainage Control Measures

In response to the applicant's additional information on proposed measures to address drainage of surface water from the wind farm site, we stated that, while these measures appeared to be comprehensive and detailed, we also pointed out that constructing the access roads, turbine bases, work areas, crane pads, hard-standings and other facilities would require substantial removal of vegetation cover and the excavation of peat and mineral subsoil, giving rise to potential sources of sediment-laden water, including drainage and seepage water resulting from road and turbine base excavation.

In our observations on the applicant's further information, we also pointed out that other sources of sediment would include stockpiled excavated material and the erosion of sediment from site drainage channels; and all of these activities could result in the release of suspended solids to surface waters, leading to increased turbidity which in turn could affect water quality in the local drains and for some distance downstream. Dewatering of excavations and especially borrow pits has the potential to impact on local groundwater levels during the construction phase.

The problems with these engineering solutions is that they depend completely on very good design and construction; and if there are any breaks or accidents, or if the mitigation measures are not constructed exactly to specification, the contents of a settlement pond could be released very quickly, with downstream effects even more damaging than would be caused by the contaminated run-off itself. These types of mitigation measures also depend on the absence of rainfall events which could overwhelm the design capacity of the system (as pointed out above). Overall therefore, while it may be possible to reduce the risk, it is not possible to eliminate it completely, or satisfactorily.

6.10.2 Peat Slides and Blanket Bog Failures

Our submission to the Board stated that the applicant's initial review of historical peat slides in the area had not been updated in response to the Board's request, and therefore it did not include more recent events, nor the results of recent investigations into the causes and effects of peat slides.

In sections 5.3.4 to 5.3.6 above we have provided information on the numbers of peat slides and blanket bog failures, together with an assessment of the risks and consequences of these events occurring on the proposed wind farm site, most likely triggered by a combination of construction activties, ground disturbance and heavy precipitation events.

6.10.3 The Influence of Climate Change as a Risk Factor

In section 5.3.7 above, we referred to the request by An Bord Pleanála that the applicant should provide evidence that the proposed peat "*repositories would be effective in providing for the permanent retention of peat and other materials"*, i.e., for at least 100 years!

It was our observation at that time, and it is our observation now, that the applicant's EIAR and further information response should have considered the impacts of climate change over a longer term, and not merely for the next 10 or 20 years. As no such consideration has been given, the Board should consider that the long-term stability of the peat repositories has not been assured, and that there is a residual risk of failure, with severe consequences.

6.10.4 Observations on the Applicant's Reliance on the Wind Energy Development Guidelines

One of the outstanding issues raised by the planning application for the Croagh Wind Farm, and not fully clarified in any of the further information responses provided by the applicant, is the status of the "*Wind Energy Development Guidelines for Planning Authorities"* (DoEHLG, 2006), commonly referred to as the "2006 Guidelines".

The status and legal legitimacy of the 2006 Wind Energy Development Guidelines (WEDG)and the draft 2019 Wind Energy Guidelines are examined in section 9 below, where we conclude that neither the 2006 WEDG nor the 2019 WEDG were satisfactory from either a technical or a legal perspective, each of them being unsafe to rely on, for different reasons in each case.

6.10.5 Noise and Vibration

In making its request for further information (section 6.9 above), An Bord Pleanála noted that the proposed wind farm development would be located in a low noise environment; there is residual potential for adverse effects arising from low frequency noise and amplitude modulation; and the Board therefore sought further information from the applicant on how this problem would be mitigated in the event that adverse effects might arise.

In its response to the above request, the applicant stated in a letter dated 08 December 2022 from AWN Consulting to the applicants agent MKO (Appendix 4 of the further information response), that:

1. "*Measures to mitigate low-frequency noise at noise sensitive locations will be implemented through operational controls for the relevant turbine type, which may include turbine curtailment and/or stopping turbines under specific operational conditions"*;

2. "*Low-frequency noise issues due to the operation of the proposed wind turbines are not expected at the noise sensitive locations"*;

3. "*Neither the EIA or nor the FI documents state that there is a residual potential for adverse effects arising from amplitude modulation"*;

4. "*In the event of a confirmed complaint which indicates potential amplitude modulation associated with turban operation, the operator will employ a qualified acoustic consultant to assess the level of AM"*; and,

5. "*These measures to mitigate amplitude modulation, if required, would consist of the implementation of operational controls for the relevant turban type, including turbine curtail meant and/or stopping turbines on the specific operational conditions"*.

It is was our observation at that time, and it is our observation now, that these proposed measures are not satisfactory, for the reason that the existing smaller wind farm at Garvagh Glebe continues to produce adverse effects on residential amenity because of the almost continuous noise produced by the turbines.

Members of the Wind Aware Dromahair Community Group and other local residents have direct experience of the noise from the existing nearby wind farm, to which they and their families will be exposed; and they have described how the wind turbines produce different types of noise — normal noise from the swoosh of the blades and perhaps the most damaging, low frequency noise and infrasound.

The rotating turbines produce an audible noise like a swish and a thump sound, together with an inaudible but deeply troubling (felt) sounds that penetrate walls, roofs and loft spaces causing health issues such including stress, sleep deprivation, headaches, high blood pressure, anxiety, tinnitus and depression.

In this context, we might remind the Board that the World Health Organisation night noise guidelines are 40db; while the Irish DoEHLG guidelines are 43db at night; and it must be remembered that an increase of just 3db represents a doubling of noise pressure.

Wind turbine developers and planning authorities also ignore infrasound – sound levels lower than normal human frequency thresholds – despite evidence that our

inner ears do detect these infrasound's and at much lower intensities than audible sounds. Infrasound has been linked with effects on short-term memory, concentration, maths, reading, multi-tasking, and with balance disturbances. Infrasound also carries over longer distances, some studies recording it more than 10km from the source.

Recent reports of noise impacts from wind farms comment on the lack of studies on sound levels near wind turbines, and there are suggestions for a minimum acoustic safety distance to be defined. Reports also refer to health complaints caused by stress induced by exposure to noise, with resulting depression, anxiety, and headaches.

Construction work would produce noise and pollution, dust, exhaust from vehicles and construction machinery, and other emissions. During construction, traffic on the local road would increase. Much of the increased traffic will be HGVs and plant machinery. These vehicles will repeatedly be passing close to busy junctions, schools and local housing. This will cause disruption and danger to the inhabitants and the potential for accidents.

Peace and quiet is an important factor for people when buying a home, with one in five prospective home buyers rating it as the most important consideration when choosing where they will buy.

In section 13.2 below, we provide further evidence of the detrimental effects of wind turbine noise on human health.

6.11 Decision by An Bord Pleanála to Refuse Planning Permission

Following two comprehensive reports by the Board's Inspector, dated 01 July 2022 and 22 February 2023, both of which (when considered together) recommended on very sound and appropriate reasons that planning permission should be refused for the wind farm, An Bord Pleanála made two decisions on 23 October 2023 to refuse planning permission to Coillte CGA for the entire wind farm. The two decisions are in identical terms:

1. *Having regard to:*

(a) *The classification of the site by Geological Survey Ireland as being of low to moderately high landslide susceptibility;*

(b) *The high density of historical landslides in this area, including within the site itself;*

(c) *The numerous mapped faults in the area, including two within the site;*

(d) *The upland and sloping nature of the terrain;*

(e) The high rainfall levels prevalent in this location;

(f) Blanket bog being the dominant soil type at the site and the importance of assessing any biodiversity impact on this natural resource;

(g) The low permeability of the limestone bedrock on the site, leading to a high water table;

(h) The high density of drainage channels throughout the site, both natural and man made;

(i) The timing of construction works outside the breeding season for birds coinciding with wetter periods;

(j) The expansive areas of trees to be clear felled, with peat soils and subsoils subsequently exposed;

(k) The extensive water crossings and crossing upgrades required;

(l) The deep peat at turbine locations and along existing and proposed access roads;

(m) The significant volumes of peat and other spoil material requiring excavation, handling, storage and management on the site;

(n) The instability associated with the works and movement of waste material, including the necessity for placement of vast volumes of waste peat and other spoil materials in three large repositories on bogland hilly terrain;

(o) The construction of high retaining stone buttresses required to contain waste peat and other spoil;

(p) The peat-dominated nature of the soils at the repository locations;

(q) The lack of a clear understanding of the land and ground conditions associated with the development of the proposed peat repositories, including matters relating to the final construction of the primary repository, the drainage of the peat repositories, measures required for the control of groundwater, the type and condition of rock at the repository locations, and the hillside siting of the northernmost repository and the associated clear felling of forestry;

(r) The construction works culminating in interference with the natural terrain by the development of the turbine bases and the hardstanding areas, the construction of access roads cutting across contours on bogland, the provision of preferential flow paths for surface waters, and road widening and improvement works along existing internal roads; and

(s) The proposed highly complex system of drainage and the very precise nature of the application of many of the proposed measures required for their functionality;

on the basis of the information submitted with the application and appeal, the Board cannot be satisfied that the proposed development would adequately mitigate risk associated with a potential landslide as a consequence of the development of the proposed wind farm, with potential for causing pollution of waterbodies within and in the vicinity of the site. Furthermore, the Board is not satisfied on the basis of the information submitted with the application and appeal, that the proposed repositories would be effective in providing for the permanent retention of peat and other materials and that the mitigation measures, inclusive of the proposed drainage system, would be adequate to ensure the protection of the environment.

In view of the above, it is considered that the proposed development would present a significant risk of adverse environmental impact on the sensitive natural habitats of the sites and of the wider area and would constitute an unacceptable risk of pollution of watercourses in the area. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

2. On the basis of the information submitted with the application and appeal, including the Natura Impact Statement, and in light of the assessment of the Board by reference to the issues set out under reason no. 1 above, including the risk of pollution of watercourses in the area, the Board cannot be satisfied that the proposed development, individually, or in combination with other plans or projects would not adversely affect the integrity of European Sites, Lough Gill Special Area of Conservation (Site Code: 001976) the Cummeen Strand/Drumcliff Bay (Sligo Bay) Special Area of Conservation (Side Code: 000627), and the Cummeen Strand Special Protection Area (Site Code: 004035), in view of the sites' conservation objectives. In such circumstances is precluded from granting permission

3. On the basis of the information submitted with the application and appeal, the Board noted the range of bird species of conservation value that have been observed on, over and in close proximity to the site indicating this to be an ecologically sensitive area of significant ornithological value. In the absence of data monitoring the impacts, if any, of existing wind farm developments in this area on these birds of conservation value and their habitats together with the particular sensitivity of some species such as Whooper Swan, Golden Plover

and Hen Harrier to relatively low levels of mortality, the Board 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."

This decision, or Order by An Bord Pleanála, accurately reflects the conclusions reached by the Board's Inspector who recommended that permission should be refused on additional grounds of visual impact and noise.

The Board's decision was summarised in the Respondent's Statement of Grounds at paragraph 19 to 21 as follows

19. *In summary, therefore, the Board first refused permission because it was not satisfied that the development proposal adequately mitigated the risk associated with landslides, with the consequence that there was potential for the pollution of waterbodies, or that there were adequate proposals for the storage of peat which would ensure the protection of the environment. The Board therefore concluded that there was a significant risk of adverse environmental impact on sensitive natural habitats and the wider area and there would be an unacceptable risk of pollution of watercourses in the area.*

20. *Second, the Board concluded that in light of the conclusions reached in respect of the risk associated with landslides, the storage of peat and the risk of pollution to watercourses, it could not be satisfied that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of certain identified European Sites. Having reached that conclusion, the Board was precluded by section 177V of the 2000 Act and Article 6(3) of the Habitats Directive from granting permission for the proposed development.*

21. *Third, the Board concluded that, in the absence of monitoring data, it could not be satisfied that the cumulative environmental assessment of the likely effects of the proposed development on avifauna could reasonably exclude the possibility of a significant impact.*

Having read carefully the reports by the Board's Inspector, dated 01 July 2022 and 22 February 2023,on which the above decision was based, **it is our submission** that the Inspector's first report accurately describes the location of the proposed

wind farm, the site and its surroundings, the wind farm itself (to the extent that a complete description was not possible, given the absence of certain specific information to which we have referred above), the high probability and risk of damage to the environment and to wild birds, loss of biodiversity, and an an unacceptable risk of pollution of watercourses in the area; and therefore the Baord's decision is robust on environmental matters.

The robustness of the Board's decision in the context of relevant policies and applicable law is discussed in section 8 below.

7. OBSERVATIONS ON THE APPLICANT'S ENVIRONMENTAL IMPACT ASSSESSMENT REPORT (EIAR) AND NATURA IMPACT STATEMENT (NIS)

7.1 Observations on the Applicant's Environmental Impact Asssessment Report (EIAR)

Throughout these observations we have made a number of comments on the contents of the applicant's Environmental Impact Asssessment Report (EIAR) which we summarise as:

i) The report is inadequate in that it is based on a project description which contains too many uncertainties;

ii) The report does not adequately reflect the unique and vulnerable nature of the elevated site on which the proposed wind farm would be constructed if permitted;

iii) The EIAR does not give adequate recognition to the in-combination effects of the proposed wind farm when considered together with the high concentration of wind turbines in the general area of the proposed site;

iv) The report does not provide sufficient detailed evidence for the Board to be able to conclude that there would be no risk of peat slippages for peat slides;

v) the report does not provide sufficient evidence for the Board to be able to conclude that there would be no risk to the high quality status of streams and rivers flowing from the proposed site to a number of nearby Natura 2000 SACs and SPAs.

7.2 Observations on the Applicant's Natura Impact Statement (NIS)

The section of the NIS which considers the possible impact of the proposed wind farm on the White-clawed Crayfish (*Austropotamobius pallipes*) in Lough Gill SAC makes the assumption that because:

- there are no proposed alterations to the natural watercourses occurring on the subject site;
- no crayfish were recorded within the site; and,
- there is no potential for any deterioration in water quality in the SAC,

there will be no effect on this sensitive species.

The NIS then continues to make the unbelievable and unfounded statement that:

> *"There is **no scientific doubt** about the effectiveness of the mitigation measures incorporated into the proposed development and there is no lacunae or gaps in the available data"* (NIS, sections 6.1.1.1 and 6.1.2.1, page 52).[our emphasis]

While it would be acceptable for the NIS to say that the mitigation measures have been carefully considered and designed, and that they will reduce as far as possible the risk to the identified downstream Natura 2000 sites, it cannot be stated that "*there is no scientific doubt".*

When considering the potential effects of the proposed wind farm development on Brook Lamprey (*Lampetra planeri*), the NIS reaches a more reasonable conclusion that:

> *"in view of best scientific knowledge, beyond reasonable scientific doubt and based on objective information, that the proposed development will not adversely affect Brook Lamprey within the Lough Gill SAC"* (NIS, section 6.1.3.1, page 53.

However, when considering the potential adverse effects of the proposed wind farm development on River Lamprey (*Lampetra fluviatilis*), Salmon (*Salmo salar*) and Otter (*Lutra lutra*), the NIS repeats the "***no scientific doubt"*** finding that there will be no adverse effects on any of these three species.

The applicant's updated NIS makes similar "***no scientific doubt"*** findings when considering potential adverse effects of the proposed wind farm development on Cummeen Strand / Drumcliff Bay (Sligo Bay) SAC and Cummeen Strand SPA.[36]

The concluding statement on residual impacts arrives at a similar finding that:

> *"… it can be concluded in view of best scientific knowledge, on the basis of objective information that the proposed development will not adversely affect the Qualifying Interests / Special Conservation Interests associated with any European Designated Sites including in particular the following:*
>
> *Lough Gill SAC (001976)*
>
> *Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (000627)*
>
> *Cummeen Strand SPA (004035)"* [37]

[36] Natura Impact Statement; Croagh Wind Farm, Co. Leitrim & Co. Sligo; Further Information Response – March 2021; section 6.2 pp 61-68.

[37] Natura Impact Statement; Croagh Wind Farm, Co. Leitrim & Co. Sligo; Further Information Response – March 2021; section 6.4 page 69.

A further reason why we observe that a finding of "***no scientific doubt"*** is an impossibility derives from the many uncertainties surrounding the construction of the proposed wind farm. In addition to the risk of surface water control measures being overwhelmed by heavy rainfall, the risk of a peat slide must also be considered.

The need for absolute certainty of "no adverse effect" is a critical issue because of the responsibility which has been placed on the competent authority, i.e., Leitrim County Council, by the EU Habitats Directive, by Irish legislation and by recent Irish High Court and European Court (CJEU) Judgements; and our observations on these legal issues follow in section 9 below.

8. COUNTY, NATIONAL AND EUROPEAN POLICY CONTEXT

8.1 Leitrim County Development Plan 2023-2029

The following objectives and policies of the Leitrim County Development Plan, 2023 to 2029, are relevant to the overall consideration of this proposed wind farm development:

- Development Plan Context, County Profile, and Vision for the Future of the County (section 8.1.1);
- Core Strategy of Leitrim County Development Plan 2023-2029 (section 8.1.2);
- Economic Vision for Co. Leitrim (section 8.1.3);
- Economic Development (section 8.1.4);
- Local Economic and Community Plan (section 8.1.5);
- Renewable Energy Strategy (section 8.1.6);
- Protection of the Natural Environment and Natural Heritage, including the County's Upland Areas and Peatlands (section 8.1.7);
- Wetlands (section 8.1.7.1);
- Peatlands (section 8.1.7.2);
- Trees, Woodlands & Hedgerows (section 8.1.7.3);
- Pollinators (section 8.1.7.4);
- Landscape Character, and its capacity to absorb the visual impact of wind farms (section 8.1.8);
- Climate Action (section 8.1.9); and,
- Comment on the conflicts with policies and objectives of the Leitrim County Development Plan, 2023-2029 (section 8.1.10).

8.1.1 Development Plan Context, County Profile, and Vision for the Future of the County

The Introductory Section 1 of the Leitrim County Development Plan sets out the context for the Plan, provides a profile of the County, and outlines an agreed vision for the future of the County during the lifetime of the Plan.

The Plan covers the administrative area of County Leitrim which encompasses an area measuring approximately 1,590 square kilometres with a population of 32,044 people recorded in 2016. Within the county, 89.3% of the population reside in rural area and outside of defined urban areas.[38]

Co. Leitrim also possesses a network of attractive towns and villages, with varied landscapes and a high-quality natural environment. The county has a rich and varied natural and built heritage which contributes to the county's character, identity and sense of place. [39]

For descriptive and geographical purposes, County Leitrim can be divided into a northern and southern half, generally separated by Lough Allen. The northern half of the county is characterised by mountains, expansive lakes and deep glacial valleys which forms a spectacularly scenic landscape. The southern half of the county is characterised by a drumlin belt interspersed with small lakes and rolling hillocks. The resultant soil type in the southern half of the county is primarily the product of retreating glacial masses.[40]

The predominant soil types within the county generally comprise peats and gleys from glacial drift derived from a mix of limestone, sandstone, shale and other rocks. The predominant groupings of gleys and peats together make up 75% of the total county land mass. [41]

The River Shannon with its associated lake systems forms the county's southwestern boundary with County Roscommon while Donegal Bay demarcates the northern extremity of the county along its 4.6-kilometre long coastline.[42]

The Plan demonstrates how the vision for the future development of the county is consistent with current national and regional strategies as set out in the National Planning Framework and in the Regional Spatial and Economic Strategy for the Northern and Western Region (section 8.2 below).[43]

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38 Leitrim County Development Plan 2023-2029, section 1.2 Profile of the County, page 4.

39 Leitrim County Development Plan 2023-2029, section 1.2 Profile of the County, page 5.

40 Leitrim County Development Plan 2023-2029, section 1.2 Profile of the County, page 5.

41 Leitrim County Development Plan 2023-2029, section 1.2 Profile of the County, page 5.

42 Leitrim County Development Plan 2023-2029, section 1.2 Profile of the County, page 5.

43 Leitrim County Development Plan 2023-2029, chapter 1, Introduction, page 2.

This Plan seeks:

- *To ensure the sustainable physical and social development of the county, ensuring the conservation and protection of the built and natural environment;*
- */…/ to develop a thriving rural community, protect our environment and celebrate our rich and varied heritage;*
- */…/ to ensure that wildlife species and habitats are conserved, features of heritage interest protected, watercourses and ground water safeguarded from pollution and the beauty of the landscape maintained*
- */…/ to grow sustainable tourism, diversify rural enterprise and encourage remote working hubs throughout the county, all facilitated by the rollout of broadband infrastructure; and also,*
- */…/ to reduce greenhouse gas emissions and capitalise on projects that allow us to become a low carbon, climate resilient and environmentally sustainable economy".*[44]

The importance of these statements lies in the fact that the County Council places a very high value on the maintenance and **further enrichment of the County's spectacularly scenic landscape, a clean environment, conservation of important wildlife species and habitats** [our emphasis], a thriving rural community, and a vibrant and diverse social, cultural and economic life.

It therefore follows that any development which damages or diminishes the features of the County which are enshrined in this over-arching policy should not be permitted unless such development is of vital strategic importance and cannot be located elsewhere. As we hope to demonstrate in this submission, the proposed Croagh Wind Farm would, if permitted, conflict significantly either this important policy, and it is neither a vital nor a strategic development.

8.1.2 Core Strategy, Leitrim County Development Plan 2023-2029

The county has a rich and varied natural and built heritage which contributes to the county's character, identity and sense of place. Resources in the county must be carefully managed to develop our society, economy and people in a sustainable manner.

The Core Strategy of the 2023-2029 County Development Plan covers a very wide range of issues, including natural resources, environment, natural and built heritage, economic and social development, and provides a strategic development

[44] Leitrim County Development Plan 2023-2029, Chapter 1, Introduction, page 2.

framework for the Plan. It also provides a medium to longer term strategy for the spatial development of Co. Leitrim.

The vision for Leitrim proposed for the County Development Plan 2023-2029 is:

> **"***Co. Leitrim to be a vibrant, creative, economically strong, socially inclusive, progressive and distinctive county, providing a quality experience for all who live in, work in, invest in and visit our county, fostering the development and wellbeing of our communities, offering excellent opportunities for employment across a diverse range of sectors, embracing the challenges which climate change presents in a responsible and practical manner while protecting, conserving and enhancing the best of the natural and built environment".*[45]

Underpinning the strategic aims above /…/ the future spatial development of Leitrim county are the following complementary strategic objectives which are integral in delivering the vision for the county during the period 2023-2029:

> *"7. To protect, conserve and enhance the built, natural and cultural environment through promoting awareness, utilising relevant heritage legislation and promoting good quality urban and rural design;*
>
> *8. To support the development of key infrastructure such as telecommunications, electricity and sources of renewable energy to enable and facilitate economic development;*
>
> *9. To ensure co-ordination between land use zoning and infrastructure availability through the implementation of the 'Tiered Approach to Land Use Zoning' as required under the NPF"* .[46]

Leitrim County Council will ensure that the future spatial development of Leitrim is underpinned by means of a plan led approach and in accordance with national and regional policy, in facilitating residential and employment generating development at locations of sufficient environmental carrying capacity.

> *"**CS Obj 7** To incorporate measures for the promotion of sustainable settlement and transportation strategies in urban and rural areas including the promotion of measures to reduce energy demand, reduce anthropogenic greenhouse gas emissions, and address the necessity of*

[45] Leitrim County Development Plan 2023-2029, section 2.2 Vision and Strategic Aims, page 18.

[46] Leitrim County Development Plan 2023-2029, section 2.2 Vision and Strategic Aims, page 21.

adaptation to climate change, having regard to the location, layout and design of new development .

*"**CS Obj 19** To ensure that development is promoted, supported or facilitated through the County Development Plan that provides for climate action including that related to the increased risk of flooding and the promotion of sustainable transport options and renewable energy where possible to achieve a successful transition to a low carbon economy".*[47]

8.1.3 Economic Vision for County Leitrim

Relevant strategic economic policies for County Leitrim are:

"ED SP 4 To promote rural economic development, recognising the need to advance the long term sustainable social and environmental development of rural areas and encouraging economic diversification and facilitating growth of rural based enterprises 73."

(*ED SP 6 To support the transition towards a low carbon economy including the support of the provision of 'Green Infrastructure'".*[48]

8.1.4 Economic Development

The Development Plan contains several key principles which are important in facilitating the economic growth of the County.[49]

A Development Plan is primarily focused on spatial planning. The role of the Development Plan is therefore to facilitate the delivery of both the economic and community elements of the LECP in a manner consistent with the proper planning and sustainable development of the county.[50]

8.1.5 Local Economic and Community Plan

The Leitrim Local Economic and Community Plan (LECP) is required to complement the County Development Plan which sets the spatial planning framework for the county.

The vision of our LECP is "*Leitrim, A Vibrant County with Big Ambition where our communities are safe and healthy, our resources and heritage are sustained, and*

[47] Leitrim County Development Plan 2023-2029, section 2.11 Core Strategy Policies and Objectives, Objectives 7 and 19; page 35.

[48] Leitrim County Development Plan 2023-2029, section 4.5 Economic Vision for County Leitrim, page 73.

[49] Leitrim County Development Plan 2023-2029, section 4.4, Key Principles, page 71.

[50] Leitrim county development plan 2023-2029, section 4.1 introduction, page 68.

our economy is thriving".[51] The LECP then outlines a roadmap consisting of themes, objectives, targets and actions to realise this vision.

The LECP sets out economic and community objectives that will promote and support the economic development and the local and community development of the county. The LECP addresses a wider range of community issues, including developing infrastructure to address social exclusion, poverty and disadvantage, reverse social and economic decline and to realise growth potential and the sustainability of communities.

The Economic Themes each contain a number of Strategic Economic Development Objectives (SEDOs) with specific targets identified for each SEDO:

> "***SEDO 3:*** *Support and facilitate the development and maintenance of an infrastructure across Leitrim which will meet current and projected economic, social, community and sustainability needs*." [52]
>
> *"**SEDO 4:*** *Strengthen the fabric of our towns and villages by developing strong 'place related' economic activities and supporting community development initiatives to build on an area's particular strengths".* [53]
>
> *"**SEDO 5:*** *Enhance the potential for economic development in individual sectors based on Leitrim's physical, social, environmental and cultural character and quality*". [54]
>
> *"**SEDO 5A:*** *Enhance the potential for economic development in the Energy and Green Economy sector so that Leitrim will be an exemplar county for addressing Climate Change*." [55]
>
> *"**SEDO 5E:*** *Enhance the potential for economic development in the Tourism Sector by ensuring a united cohesive approach by the tourism trade and agencies in the county."* [56]

There are policies, strategies in place to assist in the realisation of the Economic Vision and structures within the Local Authority and wider collaborate groupings

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51 Leitrim County Development Plan 2023-2029, section 4.6 Local Economic and Community Plan, page 74.

52 Leitrim County Development Plan 2023-2029, section 4.6 Local Economic and Community Plan, page 76.

53 Leitrim County Development Plan 2023-2029, section 4.6 Local Economic and Community Plan, page 76.

54 Leitrim County Development Plan 2023-2029, section 4.6 Local Economic and Community Plan, page 76.

55 Leitrim County Development Plan 2023-2029, section 4.6 Local Economic and Community Plan, page 76.

56 Leitrim County Development Plan 2023-2029, section 4.6 Local Economic and Community Plan, page 76.

which the Council forms part of to drive the delivery of our shared Economic Vision. The following sections outline some of these strategies and structures.

The main function of the LCDC is to prepare, implement and monitor the community elements of the six-year Local Economic and Community Plan (LECP). It must consider the economic elements of the plan in order to enhance co-ordination with the community elements. It has a general role in seeking to ensure effectiveness, consistency, co-ordination and avoidance of duplication between the various elements of statutory body activities in the community.

> "***EC DEV PoI 2*** *[Economic Development Support Role]**:*** *To continue to promote the county to attract enterprise and investment through the Economic Development Department and the Local Enterprise Office, with a focus on a number of established and emerging sectors including tourism, manufacturing, renewable energy, ICT, food and agri-food and to maximise the opportunities afforded by remote working".* [57]
>
> "***EC DEV PoI 4*** *[Economic Development Support Role]**:*** *To maximise opportunities to strengthen links with higher level institutions and the Atlantic Technological University (ATU) and investigate opportunities for employment creation in relation to climate change, biodiversity and developing a carbon neutral economy."* [58]
>
> "***INTLAND USE POL 1*** *[Integration of Land Uses]**:*** *To encourage mixed use settlement forms and sustainable centres, in which land identified for economic development and enterprise/ employment are located in close proximity to housing, education and local services/amenities in order to reduce the need to travel*." [59]
>
> "***ENT EMPL POL 10*** *[Enterprise and Employment] To support the development of a SMART county to develop and diversify the rural economy, to build on local enterprise and infrastructure assets, to drive innovations around energy, transport, agri-food, tourism, e-services and remote working."* [60]
>
> "***ENT EMPL POL 6*** *[Enterprise and Employment]: To clearly indicate what uses are permitted or open for consideration on enterprise and employment zoned land and to ensure that such uses afford adequate*

[57] Leitrim County Development Plan 2023-2029, section 4.7.6 Economic Development Department, page 83.

[58] Leitrim County Development Plan 2023-2029, section 4.7.6 Economic Development Department, page 83.

[59] Leitrim County Development Plan 2023-2029, section 4.8 Role of Urban Centres, page 84.

[60] Leitrim County Development Plan 2023-2029, section 4.10 Services and Manufacturing, page 91.

flexibility to cater for a wide range of employment uses subject to ensuring residential amenity and environmental protection." [61]

"***ENT EMPL POL 6*** *[Enterprise and Employment*]: *To support the development of a SMART county to develop and diversify the rural economy, to build on local enterprise and infrastructure assets, to drive innovations around energy, transport, agri-food, tourism, e-services and remote working"*. [62]

8.1.6 Renewable Energy Strategy

Chapter 9 "Infrastructure and Energy" of the Leitrim County Development Plan 2023-2029 refers to the need to significantly improve the electricity grid throughout the County, and states that:

"*the Council supports upgrading of the electrical transmission network both within the county and adjoining counties. The Council recognises that an adequate and reliable electricity and gas supply/infrastructure is essential if the county is to develop and compete nationally for investment and is committed to advocating and facilitating the extension and consolidation of networks in the county".* [63]

The Council recognises that essential electricity infrastructure upgrades are necessary, and these have been detailed in EirGrid's "*Tomorrow's Energy Scenarios 2019 Systems Needs Assessment*". and the Council will support EirGrid where practicable in the delivery of their requirement to facilitate electricity targets set out in the Government's Climate Action Plan 2019 and The National Energy and Climate Plan 2021 – 2030.

An understanding of locations of the higher voltage electricity infrastructure acknowledged in the Northern and Western Region Spatial and Economic Strategy (RSES) which includes RPO 16 which states that:

"*The NWRA shall co-ordinate the identification of potential renewable energy sites of scale in collaboration with Local Authorities and other stakeholders within 3 years of the adoption of the RSES. The identification of such sites (which may extend to include energy storage solutions) will be*

[61] Leitrim County Development Plan 2023-2029, section 4.10 Services and Manufacturing, page 91.

[62] (**Leitrim** County Development Plan 2023-2029, section 4.10 Services and Manufacturing, page 91).

[63] Leitrim County Development Plan 2023-2029, section 9.15 Energy Networks Infrastructure – Electricity and Natural Gas, page 230.

based on numerous site selection criteria including environmental matters, and potential grid connections".[64]

The county is also particularly rich in renewable energy resources as identified in the Renewable Energy Strategy. One of EirGrid's strategic projects within the NWRA is the North West Project known as the Renewable Integration Development Project which will traverse counties Donegal, Sligo and Leitrim. This is a cross-border project to identify the necessary reinforcement of the electricity transmission grid in the north-western region of Ireland to cater for expected power output from renewable energy sources. This will require new power lines to be built, and this plan is supported by the following policy:

*"**ENI POL 4:** To support the renewal, reinforcement and strengthening of the electricity transmission network with particular reference to the regionally important projects such as Renewable Integration Development Project*". [65]

Co. Leitrim has an abundance of natural resources that can be harnessed in a sustainable manner, without negatively impacting on the environment. There is potential for a range of renewable energy technologies, including:

- Wind energy
- Solar energy
- Bioenergy (biomass, biogas, biofuel)
- Geothermal energy
- Hydropower
- Waste-to-energy

The scale of developments can range from micro to large-scale, providing energy for a single dwelling, a commercial property, or being exported to the electricity grid for distribution. Renewable energies will play an increasing role in the future in the drive to reduce GHG emissions and transition to a low carbon society. Moreover, the previous Programme for Government (2020) commits to the rapid decarbonisation of the energy sector and seeks to deliver at least 70% renewable electricity by 2030.

County Leitrim has a longstanding record of promoting and accommodating the development of renewable energy technologies, principally wind energy, with the

[64] County Development Plan 2023-2029, section 9.15 Energy Networks Infrastructure – Electricity and Natural Gas, page 230. A more detailed summary of the RSES for the Northern and Western Region is provided in section 8.2 below.

[65] Leitrim County Development Plan 2023-2029, section 9.15 Energy Networks Infrastructure – Electricity and Natural Gas, page 231.

county containing excellent wind resources and a grid infrastructure which requires considerable reinforcement.

To facilitate the sustainable growth of renewable energy technologies within the county, the Leitrim County Renewable Energy Strategy (RES) has been prepared as part of the Plan and is included in an appendix to the County Development Plan. The RES is underpinned by the following agreed vision:

> *"To encourage and support the transition of Leitrim to a carbon-neutral county through community engagement, energy efficiency and the sustainable development of renewable energy, whilst providing environmental and economic benefit at a local and national level and preserving the cultural heritage and visual amenity of the county".*[66]

The RES contains a comprehensive assessment and spatial evaluation of the county to identify the most suitable locations for renewable energy technologies, taking account of available natural resources, grid infrastructure, environmental considerations, impacts on local communities and quality of life.

The RES contains an up to date policy context for the consideration of renewable energy development proposals and provides the spatial framework to enable the county to maximise its contribution to achieving EU and national targets through the optimum use of natural resources:

> *"**RE POL 1:** To encourage and facilitate the production of energy from renewable sources, such as from wind, solar, bioenergy, hydroelectricity, and geothermal, subject to compliance with proper planning and environmental considerations.*
>
> *"**RE POL 2:** To promote and support developments and actions that assist in achieving the national targets for energy from renewable resources and reducing greenhouse gas emissions associated with energy production.*
>
> *"**RE POL 3:** To ensure environmental assessments for new energy developments should address reasonable alternatives for location. Where existing infrastructural assets such as sub-stations, powerlines and roads already exist within proposed development areas, then such assets should be considered for sustainable use by the proposed development where the assets have capacity to absorb the new development.*
>
> *"**RE OBJ 1:** To seek to achieve a minimum of 200 MW of renewable electricity in the county by 2030, by facilitating renewable energy*

[66] County Development Plan 2023-2029, section 12.6.1 Leitrim County Renewable Energy Strategy, page 323.

developments, including micro-generation renewable technologies incorporating solar, wind, hydro-electric and bioenergy". [67]

8.1.7 Protection of the Natural Environment and Natural Heritage, including the County's Upland Areas and Peatlands

The unique and diverse built, natural and cultural heritage of the county is key to Leitrim's identity and sense of place. The protection and enhancement of our heritage is vital to the health, well-being and quality of life of our communities. Co. Leitrim's heritage also plays a key role in planning for climate change in the county.

Natural heritage, including biodiversity, comprises all types of plants and animals (including humans), fungi, algae and micro-organisms, the habitat where they live and their genetic diversity. It also includes the physical and geological foundation that forms landscapes.

Within the general policies and objectives of the County Development Plan, there are some which are relevant to the consideration of this wind farm planning application and the current submission. These include policies on the natural environment, water quality, landscape, and the protection of designated areas such as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) for wildlife.

The goals which this Plan seeks to realise in relation to natural heritage and biodiversity are:

1. *"The protection of fragile ecosystems and species and habitats so as to ensure that biodiversity is maintained, and vulnerable habitats protected.*

2. *The protection and conservation of non- renewable resources and their settings, where settings are considered important.*

3. *The enhancement of opportunities for the enjoyment of the natural heritage".*[68]

It is considered that certain developments within areas adjoining and in the vicinity of environmentally sensitive areas may impact on the integrity of such sensitive areas. Accordingly, areas adjoining environmentally sensitive sites, including Natura 2000 sites, Natural Heritage Areas, proposed Natural Heritage Areas, Areas of Outstanding Natural Beauty, Areas of High Visual Amenity, and other features such as lakes, rivers, waterways, wetlands, peatlands and deciduous

[67] County Development Plan, section 12.6.1 Leitrim County Renewable Energy Strategy, page 323.

[68] Leitrim County Development Plan 2023-2029, section 11.3 Natural Heritage and Biodiversity, page 262.

woodlands, shall be protected from inappropriate development through the Development Management process.

Therefore, the policies and objectives of Leitrim County Council as set out in *section 11.3 Natural Heritage and Biodiversity* on page 262 are:

> *"**NH POL 1** To protect and conserve Special Areas of Conservation and Special Protection Areas.*
>
> ***NH POL 3** To protect designated Natural Heritage Area (NHA) sites, including proposed Natural Heritage Area sites (pNHA) and seek to develop linkages between designated sites and other non-designated sites of ecological importance, where feasible and as resources permit.*
>
> ***NH POL** 4 To consult with relevant prescribed bodies, such as the National Parks and Wildlife Service (DoHLGH), and take account of any licensing requirements when undertaking, approving and authorising development which is likely to affect plant, animal or bird species or habitats protected by law*
>
> ***NH POL 5** To ensure that development does not have a significant adverse impact on plant, animal or bird species or habitats protected by law, subject to satisfactory mitigation measures.*
>
> ***NH OBJ 1** To ensure that no project or programme giving rise to significant adverse, direct, indirect, secondary or cumulative impacts on the integrity of any Natura 2000 site(s), having regard to their qualifying interests and conservation objectives, arising from their size, scale, area or land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either alone or in combination with other plans or projects). *** Except as provided for in Article 6(4) of the Habitats Directive which states that there must be: a) no alternative solution available, b) imperative reasons of overriding public interest for the project to proceed; and c) Adequate compensatory measures in place".*** [our emphasis]. [69]

Developments in or near ecologically sensitive sites will need to satisfy the Planning Authority that the development proposal will not adversely affect the integrity of the area concerned. This applies to all development proposals likely to have a significant impact on the area of ecological importance, irrespective of

[69] Leitrim County Development Plan 2023-2029*, section 11.3 Natural Heritage and Biodiversity, page 266.*

whether they are actually located within the area or not, i.e., through hydrological linkage to designated sites of ecological importance.

The Planning Authority will consult with the National Parks and Wildlife Service in respect of any proposed development where there is a possibility that such development may have an impact on a protected area of international or national importance, and shall take account of any licensing requirements, when undertaking, or approving development which is likely to affect plant, animal or bird species protected by national or European legislation.

The full extent of Leitrim's natural heritage of wild species, geological features and landforms, and natural and semi-natural habitats, extend to more than just those sites which benefit from statutory protection.

Protected natural areas cannot thrive in isolation. Maintaining and re-establishing connectivity between these natural areas is needed to restore the health of ecosystems and allow species to thrive across their entire natural habitat. Under Article 10 of the EU Habitats Directive, it states that Member States shall endeavour, where they consider it necessary, in their land-use planning and development policies to encourage the management of features of the landscape, which are of major importance for wild fauna and flora. Such features are those, which by virtue of their linear and continuous structures such as rivers, or their functions as stepping stones such as ponds and small woods, are essential for the migration, dispersal and genetic exchange of wild species. Connectivity can be achieved through 'Green Infrastructure' which seeks to harness biodiversity as a natural infrastructure for the benefit of both people and nature.

'Green Infrastructure' can be defined as strategically planned and interconnected networks of green space and water capable of delivering ecosystem services and quality of life benefits. Green Infrastructure can include parks, open spaces, rivers, farmland, playing fields, woodlands, allotments and private gardens which surround and intersperse our towns and villages. The NPF highlights the importance of the interrelationships between biodiversity, natural heritage, landscape and our green spaces. The NPF states that integrated planning for 'Green Infrastructure' and ecosystem services will be incorporated into the preparation of statutory land use plans.

Green Infrastructure should be designed and managed as a multifunctional resource capable of delivering a wide range of economic, environmental and quality of life benefits for local communities including:

- *"adaptation to the impacts of climate change and flooding;*
- *high-quality environment which can attract investment and new business;*

- *places for people to access nature, outdoor recreation and for social interaction local food production - in allotments, gardens and through agriculture;*
- *space for nature and wildlife to flourish;*
- *a sense of place and local distinctiveness; and,*
- *a resource for environmental education".*[70]

Green Infrastructure planning has a significant role to play in assisting in the protection of Natura 2000 sites, biodiversity in the wider countryside and climate resilience. The Council's land use plans will protect, manage and provide, where possible, *'Green Infrastructure'* in an integrated and coherent manner.

In the previous Leitrim County Development Plan, the Council referred to the importance of a number of ecological corridors within the County; and these were listed as including water bodies such as the River Shannon, the Shannon-Erne Waterway, the Lough Allen System, the Bonet River System (including their tributaries and lakes where relevant). That list in the previous County Development Plan also includes the land mass of the Leitrim Uplands, a Special Protection Area (SPA) for wildlife, the qualifying interests of which include the Peregrine (*Falco peregrinus*) and the Chough (*Pyrrhocorax pyrrhocorax*).

The policies and objectives of the current Leitrim County Development Plan as set out in *section 11.5 Biodiversity Outside of Habitats Designated for Nature Conservation* on page 268 are:

"NH POL 6 *To protect and where possible enhance wildlife habitats and landscape features which act as ecological corridors/networks and stepping stones, such as river corridors, hedgerows and road verges, and to minimise the loss of habitats and features of the wider countryside (such as ponds, wetlands and trees) which are not within designated sites.*

NH POL 7 *To treat the uplands of North Leitrim located above the 160 metre contour, as an ecologically-sensitive entity, where these uplands are not already designated as such.*

NH POL 8 *To protect ecological networks linking protected and designated important sites within the county, in accordance with Article 10 of the Habitats Directive.*

NH POL 9 *To ensure that appropriate mitigation and/or compensation measures to conserve biodiversity, landscape character and*

[70] Leitrim County Development Plan 2023-2029, section 11.5 Biodiversity Outside of Habitats Designated for Nature Conservation, page 267.

'Green Infrastructure' networks are required in developments where habitats are at risk or lost as part of a development

NH OBJ 7 *To encourage appropriate management of landscape features, particularly through the development management process and using planning agreements with landowners and developers, where appropriate.*

NH OBJ 8 *To identify and map over the lifetime of the Plan habitats and 'Green Infrastructure'/sites of local biodiversity value of county importance and to raise awareness and understanding of the county's natural heritage and biodiversity".*[71]

Geological heritage is part of Leitrim's natural heritage, and its uniqueness reflects the county's geological makeup. For its relatively modest size, Co. Leitrim has an extensive and diverse range of geological heritage sites. Many of them represent the primary geological foundation of uplands composed of Carboniferous age limestone and sandstone rocks. Associated with the upland areas are coal and iron deposits and extensive development of caves and other karstic landscape.

Geology is recognised as a fundamental component of natural heritage and as such the conservation of geological heritage features is considered an important aspect of conserving our natural heritage. /…/ Under the Irish Geological Heritage Programme, important sites that are capable of being conserved as Natural Heritage Areas (NHA) are being identified. Those not selected for NHA designation are being promoted as County Geological Sites (CGS). An Audit of Leitrim's Geological Heritage Sites was carried out in 2020 and the audit report documents what are currently understood by the Geo-heritage Programme of the Geological Survey Ireland to be the most important geological sites within the county. 33 no. CGS sites have been identified for inclusion within the County Development Plan, details of which are listed in Appendix XII of the Plan.

8.1.7.1 Wetlands

Co. Leitrim contains a wide range of wetlands which provide a habitat for a range of species of national and international importance. These wetlands include water courses, water bodies, marshes, fens, reed beds, raised bogs, blanket bogs, cutover bogs, heath and wet woodlands.

Wetlands tend to have high biodiversity value for a broad range of flora and fauna, protect water quality and reduce flood risk. Wetlands are important assets that deliver a range of economic benefits for water supplies, fisheries, the maintenance

[71] Leitrim County Development Plan 2023-2029, section 11.5 Biodiversity Outside of Habitats Designated for Nature Conservation, page 267.

of water tables, pollution control, timber and agricultural production, carbon sequestration, and a recreation and tourism asset.

*"**WET POL1**: To have regard to the Co. Leitrim Wetlands Survey 2019 and subsequent wetland surveys that may be published during the lifetime of this Plan in assessing individual development management proposals. This will include the protection of surveyed wetland sites that have been rated as A (International), B (National) and C+ (County) importance.*

***WET POL2:** To implement the relevant parts of the Planning and Development (Amendment) (No. 2) Regulations 2011 and the European Communities (Amendment to Planning and Development) Regulations 2011 which require planning permission has to be applied for where the area impacted by works relating to the drainage or reclamation of a wetland exceeds 0.1 hectares or where such works may have a significant effect on the environment. Such planning applications may also require the undertaking of an Appropriate Assessment where considered necessary.*

***WET POL3**: To ensure that all proposed land zonings take cognisance of appropriate riparian setback distances that support the attainment of high ecological status for water bodies, the conservation of biodiversity and good ecosystem health, and buffer zones from flood plains".* [72]

8.1.7.2 Peatlands

The Council is aware of the importance of several peatlands in the county and recognise that they are an irreplaceable resource that act as a carbon sink, play an important role in water regulation and are of significant ecological value.

Peatlands are protected under the EU Habitats Directive and 9 bogs have been designated as Natural Heritage Areas in the county (Listed in Table 11.3, page 264).[73]

The National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022 has been developed taking account of the various viewpoints and offers a way forward by outlining how a representative network of raised bogs will be conserved, restored and managed.

The Council recognises the importance of peatlands as a major natural, archaeological and non-renewable resource in addition to recognising the

[72] Leitrim County Development Plan 2023-2029, section 11.8 Wetlands, page 271.

[73] Leitrim County Development Plan 2023-2029, section 11.9, Peatlands, page 272.

important historical traditions and peat management skills associated with cutting turf for domestic use. /…/ Leitrim County Council will work in conjunction with interested parties including landowners, the National Parks & Wildlife Service, the Irish Peatland Conservation Council, The Irish Wildlife Trust and BirdWatch Ireland, in the management of these ecologically important sites.

*"**PEAT POL2:** To seek hydrological reports for significant developments within and close to peatlands, to assess potential impacts on the integrity of the peatland ecosystems".*[74]

It is our submission that the uplands comprising the application site are equally ecologically sensitive, and should therefore be protected from further industrial or any large-scale development. A decision to grant planning permission for the proposed wind farm would therefore be contrary to the policies and objectives intended to protect the natural environment.

Peatlands, as a specific type of habitat, are given a special mention in the Plan, which notes that "*the Council is aware of the importance of a number of peatlands, or bogs as they are more commonly known, in the County and recognise that they are an irreplaceable resource that act as a carbon sink and are of significant ecological value".* [75]

8.1.7.3 Trees, Woodlands & Hedgerows

Trees, woodlands and hedgerows are a vital part of a network of habitats, ecological '*corridors*' and 'stepping stones' essential for wildlife to flourish and move between and within habitats. They also have a vital role to play in climate adaptation. They filter out noise, dust and pollutants and help minimise flooding by retaining moisture.

The Council will protect and preserve existing hedgerows where possible and seek their replacement with new hedgerows, consisting of appropriate native species, where their removal is necessary during roadworks or other works:

"*TWH OBJ 1:* *The Council will protect and preserve existing hedgerows where possible and seek their replacement with new hedgerows, consisting of appropriate native species, where their removal is necessary during roadworks or other works*".[76]

[74] Leitrim County Development Plan 2023-2029, section 11., section 11.9 Peatlands, page 272.

[75] Leitrim County Development Plan 2023-2029, section 11., section 11.9 Peatlands, page 272.

[76] Leitrim County Development Plan 2023-2029, section 11., section 11.10 Trees, Woodlands & Hedgerows, page 273.

8.1.7.4 Pollinators

One third of our bee species are threatened with extinction from Ireland. Habitat loss, loss of food sources, pests and disease, pesticide and climate change all contribute. In addition to their intrinsic value, they are vital to our agricultural and horticultural industries, contribute to our health and wellbeing, and also pollinate up to 78% of flowering plants.

Leitrim County Council has adopted the All Ireland Pollinator Plan (www.pollinator.ie) (NBAP Action 4.1.8), a national framework which aims to make Ireland a place where pollinators thrive:

"***POL OBJ 1:*** *To manage and restore semi-natural habitats and their native plants on Council land in as far as is practicable and affordable*".[77]

8.1.8 Landscape Character, and Its Capacity to Absorb the Visual Impact of Wind Farms

County Leitrim has an exceptional landscape of unspoilt natural beauty which must be protected for the enjoyment of the people who live here, tourists who visit and for future generations. Landscape contributes to overall wellbeing and a greener, healthier lifestyle. The protection of landscape is recognised as a priority at European, national, regional and local level.

Landscape character is defined as a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. Landscape Character Assessment (LCA) is a process which describes, maps and classifies landscapes.

The new Landscape Character Assessment forms Appendix VII of the Plan. The assessment classifies 17 different Landscape Character Types across the county and defines 14 distinct Landscape Character Areas.

Landscape Character Types (LCTs) are as "*distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation, historical land use, and settlement pattern*".[78]

[77] Leitrim County Development Plan 2023-2029, section 11, section 11.11 Pollinators, page 274.

[78] An approach to Landscape Character Assessment, 2014 Natural England.

The LCTs identified in the LCA review broadly align with those published in the 2002 report although some differences are noted and are outlined on pages 277-278 of the current Leitrim County Development Plan 2023-2029. [79]

The revised Landscape Character Types (together with the assigned numbers) in Co. Leitrim are as follows:

4 Coastal Plain
5 Coastal Drumlin Farmland
6 Wooded Lakeside Farmland
7 Cliffed Uplands and Landslips
8 Moorland Plateau
9 Moorland Hills
10 Upland Farmland and Foothills
11 Valley Farmland
12 Drumlin Farmland
13 Major Loughs
14 Drumlin Loughs and Stream Margins
15 River Floodplain
16 Low Limestone Outcrops
17 Drumlin Farmland with Peat Bogs
18 Undulating Hill Farmland
19 Steep Mountain Peaks
20 Tabular Hills

The Plan seeks to ensure the sustainable physical and social development of the county, ensuring the conservation and protection of the built and natural environment.

NPO 22 notes the importance of maintaining and protecting the natural landscape and built heritage which are vital to rural tourism.[80]

Heritage is a key component of quality of life in our towns, villages and rural communities. /…/ Landscapes, drumlins, rivers, woodlands, hedgerows, geology, plants and animals are all part of our natural heritage. Archaeological sites and many other buildings and structures such as houses, shops, churches, bridges and mills are features of our built heritage. /…/ Cultural heritage includes aspects

[79] Leitrim County Development Plan 2023-2029, section 11.14.1 Landscape Character Types, page 277-278.

[80] Leitrim County Development Plan 2023-2029, section 5.2.4 National Planning Framework 2040, page 116

of heritage such as traditions, practices, knowledge and skills, which are an expression of our distinctive culture.[81]

8.1.9 Climate Action

The aim of this chapter of the Leitrim County Development Plan is to enable the transition of Co. Leitrim to a low carbon and climate resilient county, with an emphasis on reduction in energy demand and GHG emissions, through a combination of effective mitigation and adaptation in responses to climate change.

The Plan seeks to ensure that the County Council will promote spatial planning policies that are consistent with climate mitigation and adaption objectives. This chapter outlines the approach to climate change adaptation and GHG emissions mitigation, as required by the Planning and Development Act 2000, as amended.

This Plan incorporates a series of policies and objectives across a number of development themes in which mitigation and adaptation of the effects of climate change are a key focus. This is central in Chapter 2 – *Core Strategy* of this Plan which sets out the overall development strategy of the county with a focus on accommodating the future development of the settlements primarily within their existing built-up footprint in order to achieve more compact forms of growth. In Chapter 9 – *Infrastructure and Energy,* a number of policies and objectives are included aimed at promoting and facilitating more sustainable forms of transport and energy generation within Co. Leitrim.

In Chapter 11 – *Heritage,* a number of measures are outlined seeking to protect and enhance the levels of biodiversity within the county, and these proposed measures have the additional aim of facilitating a reduction in GHG emissions, encouraging more sustainable forms of development and protecting and enhancing critical natural resources and assets.[82]

Climate legislation and policies listed in the County Development Plan include the principal national policies on climate change mitigation and adaption; and these are summarised in section 9 below.

Climate mitigation examples mentioned in the Plan include reductions in energy use, switching to renewable energy sources and enhancement of carbon sinks, as well as reducing future risks associated with climate change.

[81] Leitrim County Development Plan 2023-2029, section 11.1 Heritage& Biodiversity: Introduction, page 260.

[82] Leitrim County Development Plan 2023-2029, section 12.1: Climate Action & Renewable Energy. Introduction, page 308.

Climate adaptation involves taking steps to adjust human and natural systems in response to existing and anticipated impacts, and to take advantage of new opportunities that may arise; and the relevant policies in the Plan include

"CA POL 4: *To provide for a reduction in energy demand and greenhouse gas emissions by providing for consolidated development forms in settlements in Co. Leitrim.*

CA POL 5: *To promote and encourage positive community and/co-operative led climate action initiatives and projects that seek to reduce emissions, improve energy efficiency, enhance 'Green Infrastructure' and encourage awareness on limate change issues.*

CA POL 6: To encourage innovation and facilitate the development of pilot schemes that support climate change mitigation and adaptation measures".[83]

8.1.10 Observation on Possible Conflicts between the Proposed Wind Farm Development and Certain Policies and Objectives of the Leitrim County Development Plan, 2023-2029

From our analysis of the policies and objectives of the current Leitrim County Development Plan, 2023-2029, it appears obvious that a significant number of these would be breached if planning permission were to be granted for the proposed Croagh Wind Farm.

For example, the a decision to grant planning permission for the proposed wind farm would be in conflict with the Development Pla's policies and objectives to protect wildlife and habitats, to protect or restore natural and semi-natural habitats which have become damaged or degraded, and to protect vulnerable landscapes.

Furthermore, there is nothing in the County Development Plan to suggest that the area in which the proposed wind farm would be located ease suitable for the installation of a further wind farm, given the concentration of wind turbines in that area.

[83] Leitrim County Development Plan 2023-2029, section 12.5 Climate Action – Mitigation and Adaptation, page 321.

8.2 Regional Planning Context – the Northern and Western Region Spatial and Economic Strategy (RSES)

The Regional Spatial and Economic Strategy for the Northern and Western Region (RSES, 2020 – 2032), which includes the province of Connacht and the Ulster Counties of Cavan, Donegal, and Monaghan, provides a high-level development framework for the Northern and Western Region, and is intended to support the implementation of the National Planning Framework (NPF), Project Ireland 2040, and the economic policies and objectives of the Government. The strategy covers a period of 12 years, to deliver the transformational change necessary to achieve its objectives and vision.[84]

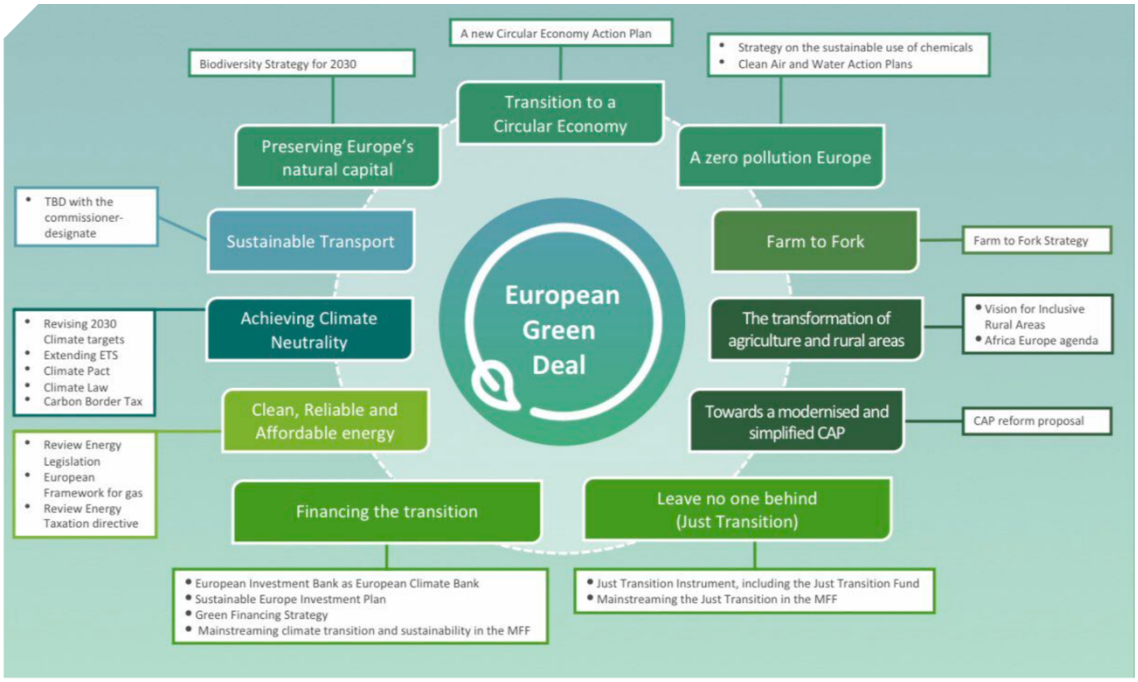


Figure 8.2.1 The European Green Deal (Source: Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy (RSES) 2020 – 2032; page 6).

The policy context of the N&W RSES includes the UN Sustainable Development Goals (SDGs) the 2030 Agenda for Sustainable Development,[85] the Europe 2020 Strategy[86] and the EU Green Deal, a package of policy initiatives, which aims to

[84] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; page vii and Section 1.1, Background, page 2.

[85] Transforming our World: the 2030 Agenda for Sustainable Development. United Nations finalised text for adoption, 01 August 2015; and https://sdgs.un.org/2030agenda. Summarised in section 1.3.5 below.

[86] EUROPE 2020 – A European strategy for smart, sustainable and inclusive growth. Communication from the Commission COM (2010) 2020; Brussels, 03 March 2010.

set the EU on the path to a green transition, with the ultimate goal of reaching climate neutrality by 2050 (see Figure 8.2.1 above).

Relevant policy objectives in the N&W RSES include:

> "*A Greener, carbon-free Europe, implementing the Paris Agreement and investing in energy transition, renewables and the fight against climate change".*[87]

8.2.1 The Natural Heritage

Under the heading of "*Environment and Heritage"* (section 5.2, page 190), the N&W RSES states that protecting the country's stock of natural capital, which includes air, land, water, soil, biodiversity, Atlantic Ocean and geological resources, is fundamental to a healthy and resilient economy; and this capital supports sectors such as agriculture, forestry, fisheries, tourism, renewables and construction.

Protection of the environment, under the title of "Our Natural Heritage", is a major policy aim of the strategy:

> "*A significant area of the region are designated conservation areas, including SACs, SPAs, NHAs or proposed NHAs. It is important that this strategic approach to the* ***management and conservation of our assets is promoted*** [our emphasis] *and the benefits to be accrued are harnessed sustainably. These site designations are informed by the Birds Directive (2009/147/EC) and the Habitats Directive (EU/92/43/EEC)".*[88]

The Strategy also states that the Northern and Western Region has a major opportunity to play a leading role in Ireland's adaptation to climate change through the utilisation of natural assets, as the Region has the highest proportion of carbon sinks, such as bogs and large areas of forestry.

8.2.2 Bogs, Peatlands and Forests – Important for Biodiversity and as Carbon Sinks

One of the most relevant policy statements in the RSES is that:

> "*The region also hosts extensive areas of peatlands, which are of high biodiversity value. This includes a network of raised bogs that present bog restoration potential, which* ***will help Ireland meet its biodiversity targets***

[87] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032, Section 1.2, Policy Context, Policy PO2, page 5

[88] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 5.4, Our Natural Heritage, page 192.

> ***including targets in the EU Habitats Directive and the National Biodiversity Action Plan***. [our emphasis]. *Cutaway peatland has the capacity to develop high biodiversity value habitats with a mosaic of wetlands, heathland, grassland, scrub and woodland. The* ***re-wetting and the development of new wetland habitats also have the potential to reduce Greenhouse Gas (GHG) emissions from these lands and eventually develop new Carbon sinks, helping Ireland to achieve its GHG emission targets*** [our emphasis].[89]
>
> "*Our climate is conducive to the widespread development of bogs of different types ranging from the blanket bogs in the west to the raised bogs in the midlands. The biodiversity supported by the different bog types varies considerably and in many cases make them* ***unique within Europe*** [our emphasis], *which presents a unique value proposition for our region. Active* ***bogs also play an important role in combating climate change by removing excess carbon dioxide from the air and placing it into long term storage for thousands of years*** [our emphasis].[90]
>
> "*Bogs … have remained untouched for thousands of years, and represent a window to our past. Additionally, there are areas not subject to legislative protection although they are of* ***high biodiversity and conservation value*** [our emphasis] *and contribute to the concept of 'green infrastructure' that* ***needs to be conserved and utilised for our health and well-being****"* [our emphasis].[91]

Biodiversity is also mentioned earlier in the strategy, where one of the over-arching environmental regional policy objectives is to:

> *"… support the integration of biodiversity considerations in a positive, proactive and precautionary way and promotes the protections of the environment and biodiversity conservation as key principles of this strategy"*.[92]

Protection of unique and valuable peatland ecosystems is supported by two important and relevant regional policy objectives:

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89 Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 5.4, Our Natural Heritage, page 192.

90 Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 5.8, Our Natural Networks, Our Bogs and Peatways, page 205.

91 Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 5.8, Our Natural Networks, Our Bogs and Peatways, page 205.

92 Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 1.5, Environmental Assessment, Overarching Environmental Regional Policy Objectives, page 13.

> "*To protect and conserve our designated peatlands and bogs for reasons of biodiversity, ecosystem services, carbon sinks, areas of habitat importance, amenity and landscape value"* (Regional Policy Objective **RPO 5.22,** page 208), and
>
> "*To establish a Regional Fora that shall prepare an audit of worked out bogs and peatlands within our region and to identify strategic sites and propositions of regional value, including but not limited to areas such as renewable energy, tourism, biodiversity, climate mitigation, education, recreation and amenity"* (Regional Policy Objective **RPO 5.23,** page 208) .

The importance of forestry is also emphasised in section 5.9 of the Strategy (pages 207 and 208) which states that the Region's forestry is diverse and encompasses large areas of native woodland, both privately and publicly owned. The Region's forests are valued for their biodiversity and mitigation of climate change, through the sequestration of carbon, and also for their recreational value and tourism potential.

Regional policy objectives advocated to address these land uses include the establishment of Regional Fora which would set out a framework for sustainable afforestation across the region, enabling government policy to grow the sector, while addressing community concerns and perceptions.[93]

8.2.3 Renewable Energy

Energy supplies and energy resilience are important components of the Strategy, and sources of renewable energy include:

> *"… harnessing both the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and connecting the richest sources of that energy to the major sources of demand"*.[94]
>
> "*Energy is needed for economic growth, and access to affordable and reliable energy is an essential development objective. Historically most incremental energy demand has been met through fossil fuels, however in future that energy will have to be low carbon and ultimately zero-carbon"*.[95]

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[93] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 5.9, Forestry and Woodlands, page 207-208; Regional Policy Objective (RPO) 5.2.4, page 208; and Section 8.5, Water Infrastructure, page 273.

[94] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Section 1.2, Policy Context, Transition to a Low carbon and Climate resilient Society, page 8.

[95] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Growth Ambition1: 4 Economy and Employment – Vibrant Region: Renewable Energy and Low Carbon Future, page 162.

> "*Wave energy, tidal energy, and offshore wind energy will continue to expand in line with technological advances and subject to feasibility, and environmental assessment"*.[96]

The RSES also notes that:

> "In the past, *the primary focus within the State has been on land-based renewables, with a record 65% renewable loading achieved in April 2018. However, with technology advances in Solar, and Off-Shore wind becoming more cost-effective,* ***this focus is likely to shift during the lifetime of the RSES. Off-Shore renewables will be critically important if the Country is to meet the energy targets set out for 2030 "*** [our emphasis].[97]

An overall ambition of the strategy includes maximising Ireland's marine and other natural assets, addressing climate change obligations and protecting the environment. Land use is a key consideration within the strategy, including developing sustainable land use management strategies to help balance competing land uses in planning for the growth of the region.

The protection of bogs and wetlands, and the encouragement of sustainable land use practices are recognised as important components of the RSES; and the key land use challenges will be to identify suitable areas for protection of biodiversity, protection of wetlands and bogs, and to provide for ecologically sustainable afforestation and regeneration of native woodland.

Renewable energy sources – wind wave and solar – are mentioned as providing a pivotal role in delivering a successful transition to a zero carbon economy; but the principal emphasis on wind energy has been offshore, which is considered as becoming more competitive because of techncological advances. The Strategy also mentions briefly the grid capacity problem to which we have referred elsewhere in this submission, noting that: "*The need for reinforcement of the grid in the north-west is being investigated"*.[98]

It is therefore our submission that this long-term Regional Spatial and Econimic Strategy does not foresee or consider any significant examnation of wind energy in the Northern and Western Region as being either possible or desirable.

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[96] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Growth Ambition1: 4 Economy and Employment – Vibrant Region: Marine Renewables, page 177.

[97] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Growth Ambition1: 4 Economy and Employment – Vibrant Region: Marine Renewables, page 177.

[98] Northern and Western Regional Assembly, 2020. Regional Spatial and Economic Strategy 2020 – 2032; Growth Ambition1: 4 Economy and Employment – Vibrant Region; section 8.2 Electrical Grid Network. page 264.

8.3 National Planning Context – Project Ireland 2040, the National Planning Framework 2040, and the National Development Plan 2018-2027

These three national policy documents will be considered together, as **Project Ireland 2040** is the overarching policy and planning framework for the social, economic and cultural development of the major portion of the country, and it includes the **National Development Plan 2018-2027**, a capital investment plan for the period 2018 to 2027, and the 20-year **National Planning Framework 2040**.

As may be expected in a high-level national planning document, Project Ireland 2040, the National Planning Framework 2040, does not provide detailed policies or guidelines on wind energy.

On the topic of energy production, the National Planning Framework states that:

> *"Rural areas have significantly contributed to the energy needs of the country and will continue to do so, having a strong role to play in securing a sustainable renewable energy supply. In planning Ireland's future energy landscape and in transitioning to a low carbon economy, the ability to diversify and adapt to new energy technologies is essential. Innovative and novel renewable solutions have been delivered in rural areas over the last number of years, particularly from solar, wind and biomass energy sources.*
>
> *In meeting the challenge of transitioning to a low-carbon economy, the location of future national renewable energy generation will, for the most part, need to be accommodated on large tracts of land that are located in a rural setting, while also continuing to protect the integrity of the environment and respecting the needs of people who live in rural areas".*[99]

Offshore wind energy is mentioned on many occasions, for example on pages 15, 99, 101, 103, 104 (section 7.5 specifically mentions that the commercial development of offshore floating wind farms will be accelerated by technological advances), 122 and 147. In contrast, **onshore renewable energy is mentioned only twice**, on pages 122 and 147, with none of the praise which appears to be given to offshore energy. Solar energy, for example, is mentioned 8 times; while wave energy is mentioned 7 times.

There is little doubt that this policy framework visualises offshore wind and wave energy, together with solar energy, as the primary sources of renewable energy in the future, and this is confirmed by National Policy Objective 42 which commits the Government "*to support, within the context of the Offshore Renewable Energy*

[99] Project Ireland 2040 – National Planning Framework; Section 5 (Planning for Diverse Rural Places), Section 5.4 (Planning and Investment to Support Rural Job Creation,) Energy Production, page 77.

Development Plan (OREDP) and its successors, the progressive development of Ireland's offshore renewable energy potential, including domestic and international grid connectivity enhancements".[100]

It is therefore our submission that the National Planning Framework 2040 does not support further onshore wind farm development; and that a decision to grant planning permission for the Croagh Wind Farm would conflict with this planning and policy framework document.

The National Development Plan 2018-2027, which is a capital investment plan for the period 2018 to 2027, has very little to say about wind farming, except for the following brief statements:

> *"The main renewable energy technology that the companies [ESB, Bord na Móna and Coillte] have invested in to date is on-shore wind. The companies had 438 megawatts at the end of 2016, estimated to be c. 15% of the overall operational wind farm fleet in the State. These companies plan to continue to invest in these technologies over the coming years, with some investments expected to be delivered on a joint-venture basis. This investment is currently expected to be predominantly in wind generation …"* [101]

Wind energy is mentioned again on page 79, but is not seen as a major energy source because of its intermittent nature:

> *"A significant proportion of this renewable power generation is being delivered from wind energy but, given the intermittent nature of this technology, a proportion of Ireland's electricity needs will likely continue to be generated from gas over the medium to longer term. It will therefore remain necessary for a certain level of gas fired generation to continue to be available to ensure continuity of supply and the integrity of the electricity grid …"* [102]

Small-scale wind energy and solar energy installations, located at homes and farms, together with smart metering and smart grids, are seen as the way ahead for renewable energy:

> *"Further innovation and new measures will include:*

[100] Project Ireland 2040 – National Planning Framework; National Policy Objective 42, pages 104 and 165.

[101] Project Ireland 2040 – National Development Plan 2018-2027; Section 5.2 (National Strategic Outcome 8 – Transition to a Low-Carbon and Climate-Resilient Society); Commercial State Sector Investments, page 78.

[102] Project Ireland 2040 – National Development Plan 2018-2027; Section 5.2 (National Strategic Outcome 8 – Transition to a Low-Carbon and Climate-Resilient Society); Commercial State Sector Investments, page 79.

- *piloting of 'climate-smart countryside' projects to establish the feasibility of the home and farm becoming net exporters of electricity through the adaptation of smart metering, smart grids and small-scale renewable technologies, for example, solar, heat pumps and wind".*[103]

It appears that the National Development Plan 2018-2027 has clearly identified one of the significant problems of large-scale wind energy, i.e., its intermittent nature, but the Plan considers that this problem is not as serious if electricity from renewable sources is generated by a multiplicity of small producers, using solar or wind, and connected via smart metering and a smart grid. This approach is consistent with our own knowledge and experience – that dispersed small-scale producers and consumers, using solar and/or wind can provide a more stable and reliable electricity supply, but this has become possible only recently (within the last two decades) as a result of the development of reasonably priced electronic controls.

It is therefore our submission that the National Development Plan 2018-2027 does not support further onshore wind farm development; and that a decision to grant planning permission for the Croagh Wind Farm would conflict with this planning and policy framework document.

8.4 Ireland's Fourth National Biodiversity Action Plan, 2023 – 2030

Ireland's 4th National Biodiversity Action Plan (NBAP), published on 25 January 2024, was prepared by the National Parks and Wildlife Service at the Department of Housing, Local Government and Heritage, in collaboration with stakeholders across government and wider society. This collaborative approach was considered to be vital, given the multi-faceted, multi-sectoral nature of the threats and pressures on the natural world: research has shown that agriculture, forestry, invasive species, resource extraction and development are having significant adverse impacts on biodiversity in Ireland. Many of these issues were addressed in the landmark report by the Citizens' Assembly on Biodiversity Loss.

Ireland's 4th NBAP is also the first Irish NBAP to be backed by legislation, published on a Statutory basis, under the Wildlife Amendment Act 2023. The legislation also requires selected public service bodies to integrate biodiversity into their plans, policies and programmes, and report to the Minister on progress.

Actions include expanding National Parks, tackling invasive species, strengthening efforts on wildlife crime and working with communities; and key

[103] Project Ireland 2040 – National Development Plan 2018-2027; Section 5.2 (National Strategic Outcome 8 – Transition to a Low-Carbon and Climate-Resilient Society), page 81.

recommendations from the Citizen's Assembly on Biodiversity Loss are also addressed in the Plan.

The plan sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4th NBAP has been developed with the support, advice and input of the interdepartmental Biodiversity Working Group and the independent Biodiversity Forum.

The 4th NBAP strives for a "*whole of government, whole of society"* approach to the governance and conservation of biodiversity. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to "*act for nature".*

This National Biodiversity Action Plan 2023-2030 builds upon the achievements of the previous Plan. It will continue to implement actions within the framework of five strategic objectives, while addressing new and emerging issues: [104]

1. Adopt a whole of government, whole of society approach to biodiversity (Objective 1);

2. Meet urgent conservation and restoration needs (Objective 2);

3. Secure nature's contribution to people (Objective 3);

4. Enhance the evidence base for action on biodiversity (Objective 4); and,

5. Strengthen Ireland's contribution to international biodiversity initiatives, including the achievement of targets in the Global Biodiversity Framework adopted by parties to the UN Convention on Biological Diversity (Objective 5).

Chapter One considers what biodiversity is, and why it is important; while pointing out that healthy ecosystems are essential, and that biodiversity includes all living species and the living communities they create: genes, species, habitats and landscapes.

In Chapter 2, the NBAP asks the question of what scientific studies say about biodiversity in Ireland, and reaches the conclusion that even though Ireland is

[104] Ireland's 4th National Biodiversity Action Plan 2023-2030. National Parks and Wildlife Service and the Department of Housing, Local Government and Heritage; January 2024; Government's Press Release at the launch of the Plan on 25 January 2024; and brief description of the Plan on the NPWS website: https://www.npws.ie/legislation/national-biodiversity-action-plan

home to globally important populations of birds, fish, mammals, invertebrates, plants and fungi across a wide range of terrestrial, freshwater and marine habitats, the country's biodiversity is in serious trouble.[105]

The 4th NBAP also cites the Report on Biodiversity, launched in November 2022 by the Joint Committee on Environment and Climate Action, and the NBAP also sets targets and objectives, among which "*Objective 2"* is to act on the most urgent national conservation and restoration challenges facing Ireland.

The 4th NBAP also recommends that Ireland's Biodiversity Action Plan should maintain an alignment with the Global Biodiversity Framework, and Appendix 1 of the Plan includes a target (Target 10) which states that Ireland will:

> "*Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices, such as sustainable intensification, agroecological and other innovative approaches, contributing to the resilience and long-term efficiency and productivity of these production systems, and to food security, conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services"*.[106]

Given the identified threats to the biodiversity of the area in which the proposed wind farm would be located if permitted, it is our submission that a decision to grant planning permission for this development would be in conflict with Ireland's 4th National Biodiversity Action Plan 2023-2030.

8.5 The European Union's Biodiversity Strategy for 2030

The European Union Biodiversity Strategy for 2030,[107] subtitled "*Bringing Nature Back into our Lives",* aims to assist in the recovery of biodiversity in the EU, protect nature and reverse the degradation of ecosystems. It also makes up a key part of the EU Green Deal; a framework to help support a green economic recovery following the Covid-19 pandemic. The Strategy requires, and depends on, a wide range of actions by citizens, businesses, social partners and the research and

[105] Ireland's 4th National Biodiversity Action Plan 2023-2030. Chapter 2 – What does science say about biodiversity in Ireland?; page 16.

[106] Ireland's 4th National Biodiversity Action Plan 2023-2030. Appendix 1 – Alignment with the Global Biodiversity Framework; Target 10; page 120.

[107] EU Biodiversity Strategy for 2030 – Bringing Nature back into our Lives. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM(2020) 380 final; Brussels, 20-May-2020.

knowledge community, as well as strong partnerships between local, regional, national and European level.

The Strategy points out that biodiversity loss and ecosystem collapse are one of the biggest threats facing humanity in the next decade; they also threaten the foundations of our economy, and the costs of inaction are high and are anticipated to increase. Specifically, biodiversity loss results in reduced crop yields and fish catches, increased economic losses from flooding and other disasters, and the loss of potential new sources of medicine.

One of the principal aims of this Strategy is to demonstrate that the EU is aiming to reverse biodiversity loss, and to "*help agree and adopt a transformative post-2020 global framework at the 15th Conference of the Parties to the Convention on Biological Diversity. This should build on the headline ambition to ensure that by 2050 all of the world's ecosystems are restored, resilient, and adequately protected. The world should commit to the net-gain principle to give nature back more than it takes. As part of this, the world should commit to no human-induced extinction of species, at minimum where avoidable*".[108]

The principal objectives of this important EU strategy are:

to ensure that Europe's biodiversity will be on the path to recovery by 2030;

to address the five main drivers of biodiversity loss;

to set out an enhanced governance framework to fill remaining gaps;

to ensure the full implementation of EU legislation; and pulls together all existing efforts; and,

to help build society's resilience against the impacts of climate change, forest fires, food insecurity and disease outbreaks (including the protection of wildlife and fighting illegal wildlife trade).

By 2030, the following commitments and ambitions are planned to be reached:

- ✓ Establish a larger EU-wide coherent **Trans-European Nature Network** of protected areas on land and sea – enlarging the already existing Natura 2000 network and integrating the ecological corridors;
- ✓ Legally protect at least 30% of the land and 30% of the sea in the EU, while 10% of EU land and 10% of EU sea should be **strictly protected** by 2030;
- ✓ Restore the good environmental status of marine ecosystems;

[108] EU Biodiversity Strategy for 2030 – Bringing Nature back into our Lives. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. 1. Biodiversity – The need for Urgent Action; page 3. COM(2020) 380 final; Brussels, 20-May-2020

- ✓ Restore freshwater ecosystems and the natural functions of rivers;
- ✓ Effectively manage all protected areas, define clear conservation objectives and measures, and monitor them appropriately;
- ✓ Define, map, monitor and strictly protect all the EU's remaining **primary** and **old-growth forests** [our emphasis], and increase the quantity, quality and resilience of EU **forests** (see section 1.3.15.2 below);
- ✓ Launch an **EU Nature Restoration Plan** – including restoration measures to restore damaged ecosystems, with an emphasis on those which have the capacity to capture carbon and/or prevent/reduce natural disasters;
- ✓ The EU has proposed its first ever **Nature Restoration Law**, which has the objective of long-term recovery of the EU's land and sea areas;
- ✓ At least **25% of the EU's agricultural land must be organically farmed by 2030;** and, in addition to CAP measures, the Commission will put forward an Action Plan on organic farming, helping Member States stimulate both supply and demand of organic products;
- ✓ Reduce the use of **agricultural fertilisers** by at least 20%, to be achieved by implementing and enforcing the relevant environmental and climate legislation in full;
- ✓ Step up efforts to **protect soil fertility, reduce soil erosion** and **increase soil organic matter**, including updating the EU Soil Thematic Strategy;
- ✓ Adopt, by 2021, a **Zero Pollution Action Plan** for air, water and soil;
- ✓ Establish a new comprehensive European **biodiversity governance framework**;
- ✓ Step up implementation, enforcement and compliance assurance of EU **environmental legislation**, given that although the existing legislative framework is fit for purpose, implementation on the ground is lagging behind;
- ✓ Build an integrated and **whole-of-society approach** to addressing biodiversity loss;
- ✓ Ensure that EU funding supports biodiversity-friendly investments by strengthening the existing **biodiversity proofing framework** and using the EU **sustainable finance taxonomy** to help guide investment towards a green recovery and the deployment of nature-based solutions;

- ✓ Measure the **environmental footprint of products and organisations on the environment**, including through life-cycle approaches and natural capital accounting;
- ✓ Include in the future Horizon Europe programme a long-term **strategic research agenda for biodiversity**;
- ✓ Establish in 2020 a new **Knowledge Centre for Biodiversity** in close cooperation with the European Environment Agency;
- ✓ Encourage better cooperation in **education for environmental sustainability**;
- ✓ Introducing measures to tackle the global biodiversity challenge – with the adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity, to ensure that, **by 2050, all of the world's ecosystems are restored, resilient, and adequately protected**.;
- ✓ Ensure that the **EU trade policy** will actively support and be part of the ecological transition, including taking steps to stop illegal wildlife trade; and,
- ✓ Strengthen the links between **biodiversity protection and human rights**, gender, health, education, conflict sensitivity, the rights-based approach, land tenure and the role of indigenous peoples and local communities.

8.6 National Climate Objectives and Climate Action Plan (CAP) 2023

The Climate Action Plan 2023 (CAP23)[109], launched on 21 December 2022, is the second update of the initial Climate Action Plan 2019, the first update of which was made in 2021 (CAP21). CAP23 now sets out a roadmap for the delivery of Ireland's climate goals and ambitions, aligning with the legally binding carbon budgets and sectoral ceilings agreed by the Government in 2022.

These legally binding objectives are set out in the Climate Action and Low Carbon Development (Amendment) Act 2021.[110]

The overarching goals are to halve Ireland's emissions by 2030, and to reach net zero no later than 2050. These aims are to be achieved through government policy, measures and initiatives that will drive the transition to a low carbon society and economy. CAP23 also relies on the empowerment of individuals and

[109] Climate Action plan 2023. CAP23. Changing Ireland for the better. *Department of the Environment, Climate and Communications. December 2022.*

[110] Climate Action and Low Carbon Development (Amendment) Act 2021; Number 32 of 2021; 23 July 2021.

communities to help implement the plan's policies and initiatives; while government agencies and commercial stakeholders are responsible for capital investments, electricity, industry, buildings, transport, agriculture, land use, circular economy and the public sector.

All policy and initiatives must follow a 'just transition' approach, aimed at equipping the public with skills which will enable them to benefit from the changes resulting from the implementation of CAP23. This is of particular importance due to the inequality of climate burdens that will be carried by certain industries.

8.7 Climate Change Assessment 2024

Ireland's Climate Change Assessment Report (ICCA), launched on 25 January 2024, is the principal and most recent scientific assessment which describes the current situation in Ireland, and the implications for Ireland of the global climate assessments undertaken by the Intergovernmental Panel on Climate Change (IPCC), the latest of which were published in 2021 and 2022.

ICCA may be described as Ireland's first comprehensive science-based report on our knowledge and understanding of climate change, the available options to respond to the challenges of rapid climate change, and the opportunities derived from the planned transition to a climate-neutral and climate-resilient economy and society. Preparation of the Climate Change Assessment Report was led by the Environmental Protection Agency (EPA) and funded by the Department of the Environment, Climate and Communications, with additional funding by the Sustainable Energy Authority of Ireland, Science Foundation Ireland, and the Department of Transport. ICCA comprises a *Synthesis Report*, and four volumes: *Summary for Policymakers* (Vol. 1), *Achieving Climate Neutrality by 2050* (Vol. 2), *Being Prepared for Ireland's Future Climate* (Vol. 3), and *Realizing the Benefits of Transition and Transformation* (Vol. 4).

While this very large report is not intended specifically to influence policy on wind farming, or to influence decisions on granting or refusing planning permissions for wind farms, it contains nevertheless a very large number of statements, observations and policy recommendations, some of which are relevant and should be taken into consideration by the Board

8.8 Programme for Government 2025

The Programme for Government, issued at the end of January 2025, is a document approved by the current Government, and which must be considered as an expression of Government policy. The Programme describes itself as "*a programme of investment and reform, backed by ambitious and credible actions*

… and supporting significant progress in addressing critical social, economic, political, demographic and environmental challenges".[111]

Commitments include "*Sustained action to tackle the climate crisis",* "*mitigate against the worst effects of climate change and prevent catastrophic levels of global warming"* (page 30), "*achieve a 51% reduction in emissions from 2018 to 2030 and net-zero emissions no later than 2050"* (page 50), and many other proposals to address the effects of climate change.

In a brief section entitled "***Supporting Economic Growth with Renewable Energy***" (page 54), the Government states that it will:

- aim to leverage renewable energy to attract new industries and support existing ones;
- develop Green Energy Industrial Parks to attract large-scale investments in regional locations, co-located with renewable generation;
- advance battery development and take-up to allow portable energy and reduce grid dependence; and,
- work to progress recommendations of the Shannon Estuary Economic Taskforce on renewable energy planning.

Under the heading of "***Accelerating Renewables***" (page 53), a number of policies on wind anergy are listed, and these include commitments to:

- ✓ Deliver **9GW of onshore wind** [our emphasis], 8GW solar and at least 5GW of offshore wind by 2030;
- ✓ Move to holding at least one Renewable Electricity Support Scheme (RESS) auction per year to ensure that Ireland continues to bring renewable energy projects onstream at a fast pace;
- ✓ Prioritise the publication of Wind Energy Development guidelines, having regard to international best practice and standards.
- ✓ Fast-Track Offshore Wind Development by prioritising the publication of Designated Maritime Area Plans (DMAPs) and ensure the relevant agencies are sufficiently resourced to accelerate these developments.
- ✓ Expand the Offshore Wind Energy Taskforce to include IDA Ireland and focus on attracting and retaining capital investment to drive offshore wind development;

[111] Programme for Government, Introduction; Dublin, January 2025.

- ✓ Ensure a policy is put in place to streamline repowering and life extension of existing onshore wind farms that are nearing end of life.

It appears clear that, while there is a policy to deliver more onshore wind farms, the amount of energy to be delivered is relatively small (almost equivalent to the amount of solar energy planned), and there is much greater emphasis on realising the long-term and greater potential of offshore wind energy.

If we examine what the Programme for Government 2025 states about the natural environment, we find a reasonably comprehensive and robust policy under the heading of "***Protecting Heritage and Nature***" (page 57). Policy and action statements include:

- *"Ireland is rich in unique natural and historic heritage, a vital national asset that we must cherish, protect and bequeath to future generations";*
- *"The Infrastructure, Climate & Nature Fund will also ensure ongoing protection for our environment for future generations";*
- *"new legislation now requires all public bodies to integrate biodiversity into their plans and policies";*
- [the Government] *"will implement a comprehensive action plan to strengthen our national heritage";*
- [the Government will] *"further develop and strengthen the NPWS as Ireland's leading natural heritage agency";*
- [the policy includes an] *"active commitment to heritage and nature is grounded in partnership with local communities and sustainable conservation, ensuring that Ireland's unique environment and cultural landmarks are cherished for years to come"; and,*
- ***Develop Ireland's Nature Restoration Plan*** [our emphasis] *with prioritisation of restoration actions on State lands and in consultation and partnership with farmers and local communities on voluntary measures*

It is therefore our submission that the Programme for Government 2025 does not support an onshore wind farm where its construction or operation would increase the risk of environmental damage to any significant area of Ireland's unique natural heritage, which the Programme has committed to cherish and protect for future generations. Compared with the great length of time during which our peatlands have existed, and for which they must continue to be protected for generations, the life-span of a wind farm is no more than a transient "blip" on the time-scale of longevity. It would therefore appear to be even more incongruous for the Board to grant planning permission under such circumstances.

9. REGULATORY AND LEGISLATIVE CONTEXT

9.1 Introduction – Legislation Mentioned in the High Court Order

The High Court Order stated clearly that the planning applications and appeals must be deeremined "in accordance with law", and the Order referred specifically to the following legislation and case law:

i) Sections 3 and 4 of the Environment (Miscellaneous Provisions) Act 2011;

ii) the CJEU Judgement in Case C-470/16 *North East Pylon Pressure Campaign Ltd. -v- An Bord Pleanála*; and,

iii) Articles 4 and 9(3) of the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the Aarhus Convention).

In addition to the above legislation and case law, our observations will also refer to the Planning and Development Act 2000, as amended, the Habitats and Birds Directives of the EU, the Environmental Impact Assessment Directive, and a number of other relevant CJEU and recent Irish High Court cases and Judgments which have an influence or an effect on the current legal context, and which should be taken into account, including *Coolglass Wind Farm -v- An Bord Pleanála* and *Nagle View Turbine Aware Group -v- An Bord Pleanála.*

Other relevant legislation is mentioned in appropriate sections of our observations.

9.2 Environment (Miscellaneous Provisions) Act 2011

This Act amends environment protection legislation in Ireland on a variety of matters including: civil proceedings in relation to environmental damage; fines and fixed payment notices for air pollution offences; modification of waste generation levy; development, including development for which an environmental impact assessment or an appropriate assessment is required, exempted from development authorisation requirements; investigations in unauthorized development by a planning authority; observations at an appeal made by a Member State or another state which is a party to the Transboundary Convention; development regarding a European site for the protection of habitats and plant and animal species.

However, we are concerned only with sections 3 and 4 which address the costs of civil proceedings to be borne by each party in certain circumstance (Section 3), and a failure to ensure compliance with, or enforcement of, statutory requirements,

conditions or other requirements attached to a licence, permit, permission, lease or consent (Section 4).

*"**3**.— (1) Notwithstanding anything contained in any other enactment or in —*

(a) Order 99 of the Rules of the Superior Courts (S.I. No. 15 of 1986),

(b) Order 66 of the Circuit Court Rules (S.I. No. 510 of 2001), or

(c) Order 51 of the District Court Rules (S.I. No. 93 of 1997),

and subject to subsections (2), (3) and (4), in proceedings to which this section applies, each party (including any notice party) shall bear its own costs.

(2) The costs of the proceedings, or a portion of such costs, as are appropriate, may be awarded to the applicant, or as the case may be, the plaintiff, to the extent that he or she succeeds in obtaining relief and any of those costs shall be borne by the respondent, or as the case may be, defendant or any notice party, to the extent that the acts or omissions of the respondent, or as the case may be, defendant or any notice party, contributed to the applicant, or as the case may be, plaintiff obtaining relief.

(3) A court may award costs against a party in proceedings to which this section applies if the court considers it appropriate to do so —

(a) where the court considers that a claim or counter-claim by the party is frivolous or vexatious,

(b) by reason of the manner in which the party has conducted the proceedings, or

(c) where the party is in contempt of the court.

(4) Subsection (1) does not affect the court's entitlement to award costs in favour of a party in a matter of exceptional public importance and where in the special circumstances of the case it is in the interests of justice to do so.

(5) In this section a reference to "court" shall be construed as, in relation to particular proceedings to which this section applies, a reference to the District Court, the Circuit Court, the High Court or the Supreme Court, as may be appropriate.

***4**. — (1) Section 3 applies to civil proceedings, other than proceedings referred to in subsection (3), instituted by a person—*

(a) for the purpose of ensuring compliance with, or the enforcement of, a statutory requirement or condition or other requirement attached to a licence, permit, permission, lease or consent specified in subsection (4), or

(b) in respect of the contravention of, or the failure to comply with such licence, permit, permission, lease or consent,

and where the failure to ensure such compliance with, or enforcement of, such statutory requirement, condition or other requirement referred to in paragraph (a), or such contravention or failure to comply referred to in paragraph (b), has caused, is causing, or is likely to cause, damage to the environment.

(2) Without prejudice to the generality of subsection (1), damage to the environment includes damage to all or any of the following:

(a) air and the atmosphere;

(b) water, including coastal and marine areas;

(c) soil;

(d) land;

(e) landscapes and natural sites;

(f) biological diversity, including any component of such diversity, and genetically modified organisms;

(g) health and safety of persons and conditions of human life;

(h) cultural sites and built environment;

(i) the interaction between all or any of the matters specified in paragraphs (a) to (h).

(3) Section 3 shall not apply—

(a) to proceedings, or any part of proceedings, referred to in subsection (1) for which damages, arising from damage to persons or property, are sought, or

(b) to proceedings instituted by a statutory body or a Minister of the Government.

(4) For the purposes of subsection (1), this section applies to —

(a) a licence, or a revised licence, granted under section 83 of the Environmental Protection Agency Act 1992,

(b) a licence granted pursuant to section 32 of the Act of 1987,

(c) a licence granted under section 4 or 16 of the Local Government (Water Pollution) Act 1977,

(d) a licence granted under section 63, or a water services licence granted under section 81, of the Water Services Act 2007,

(e) a waste collection permit granted pursuant to section 34, or a waste licence granted pursuant to section 40, of the Act of 1996,

(f) a licence granted pursuant to section 23(6), 26 or 29 of the Wildlife Act 1976,

(g) a permit granted pursuant to section 5 of the Dumping at Sea Act 1996,

(h) a licence granted under section 40, or a general felling licence granted under section 49, of the Forestry Act 1946,

(i) a licence granted pursuant to section 30 of the Radiological Protection Act 1991,

(j) a lease made under section 2, or a licence granted under section 3 of the Foreshore Act 1933,

(k) a prospecting licence granted under section 8, a State acquired minerals licence granted under section 22 or an ancillary rights licence granted under section 40, of the Minerals Development Act 1940,

(l) an exploration licence granted under section 8, a petroleum prospecting licence granted under section 9, a reserved area licence granted under section 19, or a working facilities permit granted under section 26, of the Petroleum and Other Minerals Development Act 1960,

(m) a consent pursuant to section 40 of the Gas Act 1976,

(n) a permission or approval granted pursuant to the Planning and Development Act 2000.

(5) In this section —

"damage", in relation to the environment, includes any adverse effect on any matter specified in paragraphs (a) to (i) of subsection (2);

"statutory body" means any of the following:

(a) a body established by or under statute;

(b) a county council within the meaning of the Local Government Act 2001;

(c) a city council within the meaning of the Local Government Act 2001.

(6) In this section a reference to a licence, revised licence, permit, permission, approval, lease or consent is a reference to such licence, permit, lease or consent and any conditions or other requirements attached to it and to any renewal or revision of such licence, permit, permission, approval, lease or consent".

Incidentally, **Section 37** of the Environment (Miscellaneous Provisions) Act 2011 makes one further change to the pre-existing legislation by amending Section 181A of the Planning and Development Act, 2000, by replacing the words "*effects on the environment"* by "*effects on the environment or adverse effects on the* ***integrity*** [our emphasis] *of a European site, as the case may be."* This may appear to be a minor change, but it has the effect of bringing firmly into Irish legislation the requirements of the Habitats and Birds Directives (section 9.5.1 below).

The principal Regulations transposing the EU Habitats and Birds Directives into Irish law are the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), and we refer the these regulations again in section 9.6.1 below.

Sections 3 and 4 of the Environment (Miscellaneous Provisions) Act 2011 are mentioned in the Applicant's Statement of Grounds, which seeks from the Court –

"*a Declaration that Section 50B of the Planning and Development Act 2000, as amended, and / or Sections 3 and 4 of the Environment (Miscellaneous Provisions) Act 2011, and/or that the interpretative obligation set out in Case C-470/16 North East Pylon Pressure Campaign Limited v. An Bord Pleanala whereby in proceedings where the application of national environmental law is at issue, it is for the national court to give an interpretation of national procedural law which, to the fullest extent possible, is consistent with the objectives laid down in Article 9(3) and (4) of the Aarhus Convention apply to these proceedings".*

To our knowledge, there are no further references to the Environment (Miscellaneous Provisions) Act 2011 in the Statement of Opposition on behalf of

the Respondent, nor in any of the other legal submissions filed in the High Court case.

It is not until we come to the **Order of the High Court** dated 19 December 2024 do we find a reference to Sections 3 and 4 of the Environment (Miscellaneous Provisions) Act 2011. Taken together, these sections are concerned primarily with costs, they are applicable to the Judicial Review proceedings, and Section 4 contains a useful definition of "*damage to the environment".*

The principal effect of the High Court Order is to link national legislation which cites "damage to the environment" with the State's obligations under Articles 4 and 9(3) of the "*UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters"* (the Aarhus Convention).

9.3 CJEU Judgment in Case C-470/16 *North East Pylon Pressure Campaign Ltd. -v- An Bord Pleanála*

This particular case began with an application made in 2015, when EirGrid plc requested authorisation to erect approximately 300 pylons carrying high-voltage cables over a distance of 138 km, with a view to connecting the electricity grids of Ireland and Northern Ireland and ensuring reliable electricity supply throughout the entire country.

The electricity interconnector, which is one of the 'projects of common interest' designated by the European Commission under Regulation No 347/2013, was challenged by the North East Pylon Pressure Campaign (NEPP). An Bord Pleanála, as the competent authority responsible for granting or withholding development consent for the project, convened an oral hearing on 07 March 2016; and, on 04 March 2016, NEPP sought to challenge the development consent process, by attempting to prevent the oral hearing being held, and by making an application for leave to seek a Judicial Review and an interlocutory injunction.

The application for an interlocutory injunction was refused, and the hearing before An Bord Pleanála went ahead as planned. On 30 January 2018, the High Court dismissed the application for Judicial Review of the decision made on 19 December 2016 by An Bord Pleanála to grant planning permission to EirGrid plc, pursuant to section 182B of the Planning and Development Act 2000. The principal reason for the High Court's refusal to grant the application for leave to apply for Judicial Review was that Irish law appeared to require the applicants to wait until An Bord Pleanála had adopted a final decision before bringing a challenge, and therefore the action for which leave was sought would be premature.

On 25 June 2018 the Supreme Court granted leave to appeal on the following issues ([2019] IESC 8]):

(i) whether the Board was lawfully designated as the "competent authority" pursuant to Council and Parliament Regulation (EU) No. 347/2013 on guidelines for trans-European energy infrastructure, as amended by Commission Delegated Regulation (EU) 2016/89 of 18 November 2015 (the PCI Regulation);

(ii) (ii) whether the Board's role as competent authority created a conflict (or a situation of objective bias) in respect of its role determining the planning application under the 2000 Act;

(iii) (iii) if the designation of the Board as competent authority was invalid, whether there were legal consequences for the impugned decision of 19 December 2016 to grant planning approval, pursuant to s. 182B of the 2000 Act; and,

(iv) whether an obligation existed to conduct an environmental impact assessment of alternative proposals considered by EirGrid

Even though the Suprme Court expressed some doubt about whether An Bord Pleanála had been validly designated as the competent authority in Ireland for the purposes of Article 8(1) of Regulation (EU) No 347/2013 of 17 April 2013 on guidelines for trans-European energy infrastructure, as amended by Commission Delegated Regulation (EU) 2016/89 of 18 November 2015, the appeal failed.

The question was then referred to the CJEU (case C-470/16), which ruled that:

"1. Article 11(4) of Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment must be interpreted as meaning that the requirement that certain judicial procedures not be prohibitively expensive applies to a procedure before a court of a Member State, such as that in the main proceedings, in which it is determined whether leave may be granted to bring a challenge in the course of a development consent process, a fortiori where that Member State has not determined at what stage a challenge may be brought.

2. Where an applicant raises both pleas alleging infringement of the rules on public participation in decision-making in environmental matters and pleas alleging infringement of other rules, the requirement that certain judicial procedures not be prohibitively expensive laid down in Article 11(4) of Directive 2011/92 applies only

to the costs relating to the part of the challenge alleging infringement of the rules on public participation.

3. *Articles 9(3) and 9(4) of the Convention on access to information, public participation in decision-making and access to justice in environmental matters, signed in Aarhus on 25 June 1998 and approved on behalf of the European Community by Council Decision 2005/370/EC of 17 February 2005, must be interpreted as meaning that, in order to ensure effective judicial protection in the fields covered by EU environmental law, the requirement that certain judicial procedures not be prohibitively expensive applies to the part of a challenge that would not be covered by that requirement, as it results, under Directive 2011/92, from the answer given in point 2 of the present operative part, in so far as the applicant seeks, by that challenge, to ensure that national environmental law is complied with. Those provisions do not have direct effect, but it is for the national court to give an interpretation of national procedural law which, to the fullest extent possible, is consistent with them.*

4. *A Member State cannot derogate from the requirement that certain judicial procedures not be prohibitively expensive, laid down by Article 9(4) of the Convention on access to information, public participation in decision-making and access to justice in environmental matters and Article 11(4) of Directive 2011/92, where a challenge is deemed frivolous or vexatious, or where there is no link between the alleged breach of national environmental law and damage to the environment."*

Most of this Judgment relates to cost protection, and it establishes that a national court in a Member State must have regard, when interpreting the Member State's national legislation, to Articles 9(3) and 9(4) of the Arhus Convention and to the EU Council Decision 2005/370/EC of 17 February 2005, so as to ensure that legal challenges would not be prohibitively expensive, and that the national court must act consistently to the fullest extent possible with these two over-arching legal requirements.

Even though only Articles 9(3) and 9(4) of the Aarhus Convention are mentioned in the High Court Order dated 19 December 2024, **it is our submission** that the Board, when determining the remitted and reactivated planning applications and appeals (case numbers 321866-25 and 321867-25), must provide for the public to have access to full and complete environmental information as soon as possible (Article 4 of the Aarhus Convention), that the necessary information must be appropriately disseminated to ensure that the public are informed (Article 5 of the Aarhus Convention), and that there is adequate public participation in the Board's decision-making process (Article 6 of the Aarhus Convention).

It is our submission that Article 5 is quite important in view of the unusual length of time between the making of the original planning applications in 2020 and the Board's current reconsideration of the applications and the appeals. Informing members of the public that the original applications are being reconsidered by Order of the High Court will be necessary to ensure compliance with the Aarhus Convention, and with EU Directive 2003/35/EC of 26 May 2003 which provides for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice (alignment of EU legislation with the Aarhus Convention).

9.4 Legal Requirement to Provide Precise and Exact Details of the Proposed Wind Farm in the Planning Application

The case which we are about to cite (in section 9.4.1 below) assumes particular importance in view of the fact that key design details of the proposed Croagh wind farm were not available when the planning applications were made by Coillte Cuideachta Ghníomhaíochta Ainmnithea (Coillte CGA) to Leitrim and Sligo County Councils on 29 July 2020, nor were they made available subsequently when the County Councils and the Board requested further information (see sections 6.4, 6.5, 6.9 and 6.10 above).

These significant elements of the proposed wind farm development (including turbine tip height, rotor diameter and hub height, and other material issues) have been left unresolved or unconfirmed, is a matter to which we referred briefly earlier in our submission, and which we will address below.

9.4.1 Implications of the Judgment in the Case of *Sweetman -v- An Bord Pleanála* (2020 / 557 JR)

There is no doubt that An Bord Pleanála will be aware of the Judgement delivered by Mr. Justice Humphreys almost four years ago, on 16 June 2021, in *Sweetman -v- An Bord Pleanála* (**2020 /557 JR**), neutral citation ***[2021] IEHC 390***.

In this High Court case, the applicant successfully challenged the legality of a decision by An Bord Pleanála to grant planning permission to Bórd na Móna Powergen Ltd (a Notice Party in the case) for a 24-turbine windfarm on a 1,908 hectare site in the Mountdillon group of peat extraction bogs, County Longford.

The case, frequently referred to as the "*Derryadd Wind Farm case"*, concerned a proposed wind farm, for which the applicant sought planning permission directly from the Board under the Planning and Development (Strategic Infrastructure) Act, 2006. Even though this case was not an appeal to the Board from a decision by a planning authority, it is our observation that the result of this case directly affects how the Board must approach and reconsider the remitted planning application by Coillte CGA, the subject of our observations.

The applicant's case in *Sweetman -v- An Bord Pleanála* is set out at paragraph 38 of the Judgment:

> *"(i). the application does not give precise details of the design of structures but only "typical" arrangements;*
>
> *(ii). the application also fails to specify dimensions for the structures, only maximum dimensions;*
>
> *(iii). the application does not specify the exact location of all of the structures and foundations".*

At paragraph 39, Mr. Justice Humphreys commented that:

> *"In particular, the turbine heights and blade lengths are expressed in terms of maxima, not the actual proposed dimensions. That is equivalent to applying for planning permission for a house on the basis that it could be anything from a one-storey bungalow to a ten-storey mansion, and contending that proper details have been furnished as long as a maximum dimension is provided."*

The Judge then went on to refer, at paragraph 51, to Article 214(1) of the 2001 Planning and Development Regulations (as amended) which includes the following requirements:

> *"[s]ubject to sub-article (2), when making an application for strategic infrastructure development, the applicant shall send to the Board – (a) 10 copies of the* ***plans and particulars*** *of the proposed development (including any* ***plans, particulars or other information*** *indicated by the Board under article 210(2) and of* ***the EIAR and, where the application is accompanied by an NIS, of the NIS*** *..."*.[our emphasis].

He further commented at paragraph 52:

> *"While the concept of "plans and particulars" isn't defined by the regulation, it must mean something specific –* ***in particular something specifically measured and capable of being drawn on a plan****. That can't include a widely variable design envelope. Otherwise one wouldn't be talking about a plan, still less particulars"*. [our emphasis].

And at paragraph 71:

> *"The greater the variability in what is permitted in an application, the less definite information is there for other interested parties availing of public participation, and the greater the range in terms of what the built outcome on the ground would look like".*

The final decision of the High Court was that providing typical details of certain aspects of the proposed wind farm, which the Board had accepted as adequate,

did not amount to the legal requirement to provide "*plans and particulars"* of a proposed development. Specifying particulars of the works for which permission is sought is a statutory obligation.

The Court ruled that on foot of those findings, the Board's decision should be quashed.

While the importance of this Judgment is self-evident, we wish to emphasise a number of points which are explicitly relevant to our observations on the planning application for the Croagh wind farm:

(a) The crux of the Respondent's arguments was the reliance on the industry concept of "design envelope" — a process which was borrowed from the British cases of *R. v Rochdale Metropolitan Borough Council ex parte Milne* (No. 1), *R. v Rochdale Metropolitan Borough Council ex parte Tew* [1999] and *R. v Rochdale Metropolitan Borough Council ex parte Milne* (No. 2) [2000][112], and referred to by Mr Justice Humphreys at paragraph 61 of his Judgement as the "*Rochdale envelope".* This approach allowed developers a range of flexibility in their initial submission of plans and particulars which then permitted them to finalise details at the construction stage, in accordance with the most up-to-date technologies.

(b) However, Mr Justice Humphreys concluded that "*the facts in Rochdale are a world away from the facts here"* (para 70), this concept was of industry design, it was derived from British law, it had no basis in Irish Planning Law, and for the Court to endorse the principle of the "*Rochdale envelope"* would amount to an impermissible modification of the relevant Irish enactments. As such, it could not be used to circumvent the strict requirements of Articles 22 and 23 of the Planning and Development Regulations 2001 (as amended).

(c) Much of the contention in the above cited case taken by Peter Sweetman against the Board centred on the relevance of Articles 22 and 23 of the Planning and Development Regulations 2001 (as amended) to Strategic Infrastructure Development (SID). Ultimately, the High Court concluded that Article 214 (relating to SID) should be interpreted in the light of Articles 22 & 23. **As such, there is no question but that the strict requirements of Articles 22 & 23 in relation to the specificity of Plans and Particulars should apply in full** (for the convenience of the Board, we quote Articles 22 & 23, and Article 26, in section 9.4.2 below).

It is therefore follows from the above High Court Judgment in *Sweetman -v- An Bord Pleanála* that the lack of certain necessary and precise detail in the planning

[112] *R. v Rochdale Metropolitan Borough Council ex parte Milne*. Queen's Bench Division (Crown Office List) [2001] Env. L.R. 22. Judgment by Sullivan J., 31 July 2000.

application for the Croagh Wind Farm, and especially the unconfirmed details of the proposed wind turbines, together with the inconsistency and lack of precise and exact information about relevant key aspects of the proposed development (to which we have referred in section 5 above), should leave no choice to the Board but to refuse planning permission.

9.4.2 Observations on Articles 22 and 23 of the Planning and Development Regulations, 2001 to 2020 (as amended)

In the High Court case described above, the applicant, Mr Peter Sweetman, asserted that the Board must examine a planning application to ascertain if the contents of the application comply with the Planning Regulations, in particular Articles 22 and 23 of the 2001 Regulations. For the convenience of the Board, we quote these Articles below.

Article 22 specifies the content of planning applications generally; while **Article 23** specifies the requirements for plans and particulars to accompany a planning application under Article 22.

The importance of **Article 23** is that it states precisely that:

> *"(1) Plans, drawings and maps accompanying a planning application in accordance with article 22 shall all be in metric scale and comply with the following requirements:*
>
> *(a) site or layout plans shall be drawn to a scale (which shall be indicated thereon) of not less than 1:500 or such other scale as may be agreed with the planning authority prior to the submission of the application, the site boundary shall be clearly delineated in red, and buildings, roads, boundaries, septic tanks and percolation areas, bored wells, significant tree stands and other features on, adjoining or in the vicinity of the land or structure to which the application relates shall be shown,*
>
> *(b) other plans, elevations and sections shall be drawn to a scale of not less than 1:200 (which shall be indicated thereon), or such other scale as may be agreed with the planning authority prior to the submission of the application in any particular case,*
>
> *(c) the site layout plan and other plans shall show the level or contours, where applicable, of the land and the proposed structures relative to Ordnance Survey datum or a temporary local benchmark, whichever is more appropriate,*

(d) drawings of elevations of any proposed structure shall show the main features of any buildings which would be contiguous to the proposed structure if it were erected, whether on the application site or in the vicinity, at a scale of not less than 1:200, as may be appropriate, and where the development would involve work to a protected structure or proposed protected structure, shall show the main features of any buildings within the curtilage of the structure which would be materially affected by the proposed development,

...

(f) plans and drawings of floor plans, elevations and sections shall indicate in figures the principal dimensions (including overall height) of any proposed structure and the site, and site or layout plans shall indicate the distances of any such structure from the boundaries of the site".

Article 26 is of equal importance, as it describes the exact procedure which a planning authority (including An Bord Pleanála) must follow on receipt of a planning application; and, apart from requirements such as stamping and acknowledging receipt of the planning application, the planning authority must:

"(1) … consider whether the applicant has complied with the requirements of articles 18, 19(1)(a) and 22 and, as may be appropriate, of article 24 or 25.

(3) Where, following consideration of an application under sub-article (1), a planning authority considers that –

(a) any of the requirements of articles 18, 19(1)(a) or 22 and, as may be appropriate, of article 24 or 25 has not been complied with, or

(b) the notice in the newspaper or the site notice, because of its content or for any other reason, is misleading or inadequate for the information of the public,

the planning application shall be invalid.

(4) Where, on inspection of the land to which the application relates, the planning authority considers that the requirements of articles 17(1)(b), 19 or 20 have not been met, or the information submitted in the planning application is substantially incorrect or substantial information has been omitted, the planning application shall, notwithstanding the fact that an acknowledgement has been sent to an applicant in accordance with sub-article (2), be invalid".

Given the uncertainties and lack of definite information about many elements of the proposed wind farm development, it is our observation that the Board cannot grant planning permission on the basis of a fundamentally unsound planning application which contains significant gaps and inconsistencies; and, as we assert in our submission, fails to comply with the above relevant articles of the Planning and Development Regulations 2001 to 2020 (as amended).

9.4.3 Attempt by the Applicant to Escape the Consequences of the "Derryadd Judgment"

In sections 6.7.1 and 6.8.1 above, we described how the applicant made a First Party appeal to An Bord Pleanála, in which the Board was requested to undertake an action which would, in effect, allow a significant change in the description of the turbines and certain other components of the proposed development, for the sole purpose of escaping the consequences of the High Court judgment in *Sweetman -v- An Bord Pleanála* (2020 / 557 JR).

The applicant's appeal supported the decision made by Leitrim County Council to grant planning permission for the proposed wind farm, but asked to Council to issue a request for further information in a way which would allow the applicant to provide a more certain (and therefore less uncertain) description of the nature and scale of the wind turbines for which consent had been granted by the Council.

Our submission at that time on the applicant's appeal, and our submission now, is that the applicant's proposal for an amended "*Condition number 1"* to be issued by the Planning Authority, is incapable of remedying the deficiencies in the planning application, as it falls far short of what is required to rectify the planning application and bring it into line with the strict requirements of Articles 22 and 23 of the Planning and Development Regulations, as set out in sections 9.4.1 and 9.4.2 above.

It was also our submission at the time, and it is our submission now, that if the Board accepted the applicant's proposal, and if the Board complied with that request, and invited the applicant to submit revised plans or other particulars allowing for a modification of the proposed development, as permitted by Article 73 of the Planning and Development Regulations (2001), as amended, that wuld be an abuse of the planning process.

in addition to the limitations of the power of the Board under Article 73 of the Planning and Development Regulations (2001), the additional information which would be required to raise the planning application to acceptable levels would require an entirely new EIAR and AA; and we submit that this is an important point which the Board must take into account when reconsidering the planning application and appeals remitted to it by the High Court Order.

9.5 Legal Obligation on the Board to Carry Out Screening for Appropriate Assessment, and if necessary, to Ensure the Completeness and Adequacy of the Applicant's Natura Impact Statement

9.5.1 The Fundamental Importance of the EU Birds Directive, Habitats Directive and the Natura 2000 Network

The board will be very well aware of the importance of these EU Directives, but we are inserting here in our submission some relevant details of how compliance with them must be achieved; this is not for the purpose of repeating something already known, but to ensure that this information forms part of our submission.

The European-wide network of Natura 2000 sites comprises **Special Areas of Conservation** (SACs) designated under the Habitats Directive (92/43/EEC), and **Special Protection Areas** (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC). Together, they constitute a European ecological network of conservation sites, the principal purpose of which is to protect habitat types and plant and animal species of Community interest throughout all Member States of the European Union. Natura 2000 is therefore an important instrument for maintaining the long-term goal of protecting the Community's biodiversity.

The EU Birds Directive (Directive 79/409/EEC) requires particular protection to be given to sites (Special Protection Areas) which support certain bird species listed in Annex I of the Directive; and requires that surveys of development sites should consider the status of such species.

The main specific requirements of the EU Habitats Directive 92/43/EEC are grouped into two chapters entitled "*Conservation of Natural Habitats and Habitats of Species*" (Articles 3 to 11) and "*Protection of Species*" (Articles 12 to 16). Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Article 6 sets out the provisions which govern the conservation and management of Natura 2000 sites, and which determine the relationship between conservation and land use. Article 6(3) and 6(4) set out a series of procedural and substantive safeguards governing plans and projects likely to have a significant effect on a Natura 2000 site.

In addition to the role and importance of Article 6 within the overall scheme of the Habitats Directive 92/43/EEC, it also applies to Directive 79/409/EEC on the conservation of wild birds. The "*Conservation of Natural Habitats and Habitats of Species*" chapter of Directive 92/43/EEC has its parallel in Articles 3 and 4 of Directive 79/409/EEC; and there has been a merger or fusion between the conservation schemes of both Directives.

Article 6(3) of the Habitats Directive establishes the requirement for Appropriate Assessment (AA) as follows:

> *"Any plan or project not directly connected with or necessary to the management of the (Natura 2000) site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan or project would adversely affect a European site. Alternative solutions, imperative reasons of overriding public interest and compensatory measures have to be addressed in such a case.

Article 6(4) states that:

> *If, in spite of a negative assessment of the implications for the (Natura 2000) site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*
>
> *Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."*

9.5.2 The Appropriate Assessment Process

Appropriate Assessment, as required by Article 6(3) of Directive 92/43/EEC, may be described as an assessment of the potential effects of a proposed plan or project – "*in combination with other plans and projects"* – on one or more European sites. The 'Appropriate Assessment' itself must be made by the competent authority stating whether or not a proposed project or plan would affect the integrity of a European (Natura 2000) site. The actual process of determining whether or

not a project or plan would affect the site is also commonly referred to as 'Appropriate Assessment', which must be completed by the relevant planning authority in consultation with the National Parks and Wildlife Service (NPWS).

If adverse impacts on a European site cannot be avoided, mitigation measures should be applied during the Appropriate Assessment process to the point where no adverse impacts on the site remain (European Commission, 2000, 2001).

The current guidance document for Appropriate Assessment (NPWS, 2009, revised February 2010) states that:

> *"Appropriate Assessment is an impact assessment process that fits within the decision-making framework and tests of Articles 6(3) and 6(4) and, for the purposes of this guidance, it comprises two main elements. Firstly a Natura Impact Statement – i.e., a statement of the likely and possible impacts of the plan or project on a Natura 2000 site – must be prepared. This comprises a comprehensive ecological impact assessment of a plan or project; it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans and projects, on one or more Natura 2000 sites in view of the sites' conservation objectives.*
>
> *Secondly, the competent authority carries out the Appropriate Assessment (AA), based on the Natura Impact Statement (NIS) and any other information it may consider necessary. The Appropriate Assessment process encompasses all of the processes covered by Article 6(3) of the Habitats Directive, i.e., the screening process, the NIS, the AA by the competent authority, and the record of decisions made by the competent authority at each stage of the process, up to the point at which Article 6(4) may come into play following a determination that a plan or project may adversely affect the integrity of a Natura 2000 site".*

9.5.3 Stage One -- Screening

The European and national guidance documents describe a four-stage phased process for carrying out an Appropriate Assessment, the first stage of which is referred to as "Screening". This stage identifies the likely impacts on European Sites, if any, which might arise from the proposed river enhancement works, either alone or in combination with other projects or developments, and further considers whether these impacts are likely to adversely affect the integrity of any European Sites.

The initial stage of screening is important to ensure that the Appropriate Assessment is of high quality. The third guidance document listed above (European Commission, 2007 and 2012) advises that:

> *"Appropriate assessments of the implications of the plan or project for the site concerned must precede its approval and take into account the*

cumulative effects which result from the combination of that plan or project with other plans or projects in view of the site's conservation objectives. This implies that all aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.

Assessment procedures of plans or projects likely to affect Natura 2000 sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity".

The screening stage should include:

- A description of the proposed project;
- Identification of the Natura 2000 sites potentially affected;
- Identification and description of individual and cumulative impacts likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity; and,
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

'**Integrity'** is defined by the European Commission (2000) as relating to the reasons for the site's designation:

"The integrity of a site is the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and / or populations of species for which the site is or will be classified."

If the screening exercise concludes that there would be significant impacts on any European Site, as a result of the proposed project or plan, either alone or in combination with any other project or plan, are likely, uncertain or unknown, there is a requirement to proceed to subsequent stages of Appropriate Assessment (AA). The findings of the AA must be clearly documented in order to provide transparency of decision-making, and to ensure the application of the "***Precautionary Principle"***.

On the other hand, if the conclusions at the end of the screening exercise are that significant impacts on any European Site, as a result of the proposed works, either alone or in combination with other plans and projects, can be ruled out, there is no need for any further stage of the Appropriate Assessment process; i.e., a Natura Impact Statement is not necessary, and a planning decision may be made on the

basis of the results of the screening report, following consultation with the National Parks and Wildlife Service (NPWS).

And, as we have pointed out in section 9.2 above, one of the effects of Section 37 of the Environment (Miscellaneous Provisions) Act 2011 is to amend Section 181A of the Planning and Development Act, 2000, by replacing the words "*effects on the environment"* by the words "*effects on the environment or adverse effects on the* ***integrity*** [our emphasis] *of a European site."* This may appear to be a minor change, but it has the effect of bringing firmly into Irish legislation the need to protect the integrity of a European site. It is our understanding, and fundamental to our submission, that this requirement goes further than protecting the species and/or habitats for which a Euroepan site has been designated.

9.5.4 Stage Two – Preparation of a Natura Impact Statement

This stage considers whether a proposed development, alone or in combination with any other project, might have adverse effects on the **integrity** of one or more Natura 2000 sites with respect to its/their conservation objectives. An adverse effect on integrity is likely to be one that prevents the site from making the same contribution to favourable conservation status for the relevant features as it did at the time of designation. At this stage, the need for mitigation measures to avoid, reduce or offset negative effects may also have to be considered.

Assessment of the effects of the project on the integrity of a Natura 2000 site involves the following steps:

- Description of the proposed plan / project;
- Collating information about the European Site(s) and the conservation objectives of the site(s);
- Describe how the project or plan, in combination with other projects or plans, would be likely to affect the European Site, its key species and key habitat(s), and how the overall integrity of the site is likely to be affected; and,
- Describe what mitigation measures are to be introduced to avoid or reduce the adverse effects on the integrity of the site; and acknowledge uncertainties and any gaps in information.

This next stage of the Appropriate Assessment process must be undertaken if it is clear that the possibility of a significant impact on one or more Natura 2000 sites cannot be ruled out, i.e., if there is an element of doubt or risk to the integrity of one or more sites, or to any of the habitats or species for which one or more sites have been selected, or to these sites' conservation objectives.

It is important to note that a likelihood of significant effects may arise not only from plans or projects located within a protected Natura 2000 site but also from plans or projects located outside a protected site. Article 6(3) safeguards must therefore

applied to a proposed development which is external to a Natura 2000 site but which is likely to have significant effects within it.

9.5.5 Stage Three – Consideration of Alternative Solutions

This stage examines any alternative solutions or options that could enable the plan or project to proceed without adverse effects on the integrity of a Natura 2000 site. The process must return to Stage 2 as any alternatives identified will require appropriate assessment in order to proceed further. Demonstrating that all reasonable alternatives have been considered and assessed, and that the least damaging option has been selected, is necessary in the Appropriate Assessment process.

9.5.6 Stage Four – When There Are No Alternative Solutions

For sites that host priority habitats and species, it is necessary to consider whether or not there are human health or safety considerations or environmental benefits flowing from the project or plan. If such considerations do exist, then it will be necessary to carry out the Stage Four assessments of compensatory measures.

If no such considerations exist, then it will be necessary to establish whether there are "*imperative reasons of overriding public interest"* (IROPI) before carrying out a Stage Four assessment. Where IROPI exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the site will be necessary before the project or plan can be permitted to proceed.

9.5.7 Conclusions of the Appropriate Assessment Process

The conclusions of the appropriate assessment report should enable the competent authority to ascertain whether the proposal would adversely affect the integrity of a Natura 2000 site (European Commission, 2000, 2001). Under the terms of the Directive, consent can be granted for a project only if it can be robustly concluded as a result of the appropriate assessment process:

a) that the integrity of the site will not be adversely affected; or,

b) that, when adverse effects are anticipated, there are no alternative solutions, and there are imperative reasons of overriding public interest (IROPI) for the project to go ahead.

As the Board will undoubtedly know from experience, a Natura Impact Statement (NIS) must consider whether a proposed development, alone or in combination with any other project,[113] might have adverse effects on the integrity of one or more Natura 2000 sites with respect to its/their conservation objectives. An adverse effect on integrity is one that prevents the site from making the same contribution

[113] Our observations on the applicant's inadequate discussion of in-combination effects is in section 3.3 above

to favourable conservation status for the relevant features as it did at the time of designation.

Mitigation measures to avoid, reduce or offset negative effects may have to be considered, but if there is any element of doubt or risk to the integrity of one or more sites, or to any of the habitats or species for which one or more sites have been selected, or to these sites' conservation objectives, consent cannot be given by the competent authority.

If doubt exists, i.e., if it cannot be proved on the basis of the best scientific information, that the proposed development will not have any significant adverse effect on a Natura 2000 site (SAC or SPA), planning permission should not be granted.

This strict requirement is clearly stated in Article 6 of the EU Habitats Directive 92/43/EEC, especially in Articles 6(3) and 6(4) which set out the procedural and substantive safeguards governing plans and projects likely to have a significant effect on a Natura 2000 site.

In section 9.6 below, we will examine this obligation in more detail, as the relevant legislation must be compled with by the Board when determining the remitted planning applications and appeals.

9.6 Relevant Irish Legislation transposing into Irish Law the EU Birds and Habitats Directives, a High Court Judgment in 2014, a Judgment of the Court of Justice of the European Union (258/11), and Other Irish Legislation Giving Protection to Wildlife

9.6.1 The European Communities (Birds and Natural Habitats) Regulations 2011

The provisions of Article 6 have been transposed into Irish national law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), which clarify the State's responsibilities to comply with EU Directives on nature conservation, and which also address transposition failures identified in judgements of the European Court of Justice.

The 2011 Regulations define the legal responsibilities and powers of local authorities and An Bord Pleanála under the Planning and Development Acts to ensure that the requirements of the Birds and Habitats Directives are strictly observed in the adoption of development plans and the granting of development consents. All other statutory authorities must adhere to the provisions of the Birds and Habitats Regulations in their planning, consent and operational functions. In addition, general obligations are placed on all public authorities to exercise their

functions to secure compliance with the Birds and Habitats Directives and to uphold and enforce the requirements of the Regulations.

These Regulations, and the Planning and Development (Amendment) Act 2010, require planning authorities, when considering plans or projects that are likely to have a significant effect on an SAC or SPA, to ensure that an **appropriate assessment screening** is undertaken; and, where required, a **Natura Impact Statement** must be produced, followed by a full **appropriate assessment** of the implications of the plan or project for the conservation status of the site.

Sites may contain priority or non-priority habitats and species. The only justifications for damaging a qualifying "*priority*" site are "*considerations relating to human health and public safety, to beneficial consequences of primary importance of the environment, or further to an opinion from the European Commission, to other imperative reasons of overriding public interest*" (IROPI), but this can be allowed only after an assessment is made in line with the Article 6 procedure, and there are no other alternatives, and an agreement is reached with the European Commission.

9.6.2 Relevant Sections of the Planning and Development Act, 2000, as Amended – Screening for Appropriate Assessment

As a result of many Judicial Review cases taken in the High Court against decisions made by planning authorities, based on the requirements to undertake an Appropriate Assessment of a proposed project, the Board must be clearly aware that if there is any element of doubt or risk to the integrity of one or more Natura 2000 sites, or to any of the habitats or species for which one or more sites have been selected, or to these sites' conservation objectives, consent cannot be given by the Competent Authority, which is now An Bord Pleanála.

If doubt exists, i.e., if it cannot be proved on the basis of the best scientific information, that the proposed wind farm development will not have any significant adverse effect on a Natura 2000 site (SAC or SPA), planning permission must not be granted.

This strict requirement is clearly stated in Article 6 of the EU Habitats Directive 92/43/EEC, especially in Articles 6(3) and 6(4) which set out the procedural and substantive safeguards governing plans and projects likely to have a significant effect on a Natura 2000 site.

The Planning and Development Act, 2000, as amended by the insertion of Part XAB (inserted by the Planning and Development (Amendment) Act, 2010), contains significant provisions requiring the relevant competent authority to undertake an appropriate assessment. Part XAB is lengthy, and for the purpose of this submission, the most relevant sections are as follows.

Section **177U** is the section of the amended Act which addresses screening for appropriate assessment:

> *"(1)* ***A screening for appropriate assessment*** *of a draft land use plan or application for consent for proposed development* ***shall be carried out by the competent authority to assess****, in view of best scientific knowledge,* ***if that*** *land use plan or* ***proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site****"* [our emphasis].
>
> *"(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before —*
>
> *(a) a land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made; or,*
>
> *(b) consent for a proposed development is given".*
>
> "(*4) The competent authority shall determine that an appropriate assessment of a draft land use plan or a proposed development, as the case may be,* ***is required if it cannot be excluded****, on the basis of objective information,* ***that the*** *draft land use plan or* ***proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site****"* [our emphasis].
>
> *"(5) The competent authority shall determine that an appropriate assessment of a draft land use plan or a proposed development, as the case may be,* ***is not required if it can be excluded****, on the basis of objective information,* ***that the*** *draft land use plan or* ***proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site****"* [our emphasis].

Section **177S (2)** defines "*competent authority"* as *"the planning authority to whom an application for permission is made or the Board* [An Bord Pleanála], *as the case may be."*

The relationship between the granting or with-holding of planning consent and the result of an appropriate assessment carried out by the competent authority under Article 6.3 of the Habitats Directive is clarified by sections **117V (1)** and **117V (2)**:

> *"(1) An appropriate assessment carried out under this Part shall include a determination by the competent authority under Article 6.3 of the Habitats Directive as to whether or not a draft land use plan or*

proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority, in each case where it has made a determination under section 177U(4) that an appropriate assessment is required, before —

(a) the draft land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made; or,

(b) consent is given for the proposed development.

(2) In carrying out an appropriate assessment under subsection (1) the competent authority shall take into account each of the following matters:

(a) the Natura impact report or Natura impact statement, as appropriate;

(b) any supplemental information furnished in relation to any such report or statement;

(c) if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura impact statement;

(d) any additional information furnished to the competent authority at its request in relation to a Natura impact report;

(e) any information or advice obtained by the competent authority;

(f) if appropriate, any written submissions or observations made to the competent authority in relation to the application for consent for proposed development; and,

(g) any other relevant information.

(3) Notwithstanding any other provision of this Act … a competent authority shall … give consent for proposed development only after having determined that the … proposed development shall not adversely affect the integrity of a European site.

(4) Subject to the other provisions of this Act, consent for proposed development may be given in relation to a proposed development where a competent authority has made modifications or attached conditions to the consent where the authority is satisfied to do so having determined that the proposed development would not adversely affect the integrity of the European site if it is carried out in accordance with the consent and the modifications or conditions attaching thereto".

This legislation transposes into Irish planning law the principles of Article 6 of the EU Habitats Directive 92/43/EEC, which also applies to Directive 79/409/EEC on the conservation of wild birds.

In brief, screening for Appropriate Assessment must be carried out by the competent authority, which in this case is An Bord Pleanála; and, if the Board is **not completely satisfied** [our emphasis] that the proposed wind farm development (in combination with any other plans and projects) would have no adverse impact on the integrity of a European site, the Board must then carry out an Appropriate Assessment, taking into account the applicant's Natura Impact Statement and any other relevant information.

If the results of the Appropriate Assessment do not allow the Board to be **completely satisfied on the basis of scientific evidence** [our emphasis] that the proposed wind farm development (in combination with any other plans and projects) would have no adverse impact on the integrity of a European site, the Board must refuse permission

9.6.3 Effects of the High Court Judgment in *Kelly -v- An Bord Pleanála* and the CJEU Judgement in Case 258/11

This obligation to carry out a screening of all the Natura sites on which the development may have an effect has been clarified by Ms. Justice Finlay Geoghegan in *Kelly -v- An Bord Pleanála [2014] IEHC 400* (Judgment delivered on 25 July 2014). At paragraph 26 of her Judgment, the High Court Judge quoted from European case C-258/11:

> *26. There is a dispute between the parties as to the precise obligations imposed on the Board in relation to the stage 1 screening by s.1777U but its resolution is not strictly necessary in these proceedings. There is agreement on the nature and purpose of the screening process which is well explained by Advocate General Sharpston in Case C-258/11 Sweetman at paras 47-49:*
>
> *"47. It follows that the possibility of there being a significant effect on the site will generate the need for an appropriate assessment for the purposes of Article 6(3). The requirement at this stage that the plan or project be likely to have a significant effect is thus a trigger for the obligation to carry out an appropriate assessment.* ***There is no need to establish such an effect; it is, as Ireland observes, merely necessary to determine that there may be such an effect*** [our emphasis].

The Judgment in CJEU Case 258/11 – *Sweetman, Ireland, the Attorney General, and the Minister for the Environment, Heritage and Local Government -v- An Bord Pleanála* – clarifies even further the point made by the High Court in the case cited

above. At paragraph 44 of the Judgment in Case 258/11, the CJEU unequivocally determined the high standard to which an Appropriate Assessment under the Habitats Directive must be carried out:

> *"44. So far as concerns the assessment carried out under Article 6(3) of the Habitats Directive, it should be pointed out that* ***it cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned****."* [our emphasis].

It is a key point in our submission that the competent authority (An Bord Pleanála) must not fail in its duty to comply with this legal standard when making its decision on whether to grant or refuse planning permission for the proposed wind farm, and that An Bord Pleanála does not have the legal power to grant planning permission if this standard is not met. If the Board is not satisfied, to the extent stated clearly in the Judgment of the CJEU quoted above, it follows that the only appropriate and legal course of action for the Board to take would therefore be to refuse planning permission.

9.6.4 Mitigation Measures

The question of mitigation measures to avoid or prevent environmental has arisen on several occasions following the initial planning application and during the requests for further information and the appeals against the Board's decision, and therefore the following observation may help to clarify the issue.

An Opinion of the CJEU, in case C-721-21, in response to a request from the High Court for a preliminary ruling, addresses a number of relevant issues connected with undertaking an appropriate assessment in accordance with the EU Habitats Directive 92/43/EEC.

The Opinion of Advocate General Kokott in this case, delivered on 19 January 2023, stated clearly that:

> Mitigation measures can be taken into account at the stage of appropriate assessment screening under Article 6(3) of Directive 92/43/EEC, provided that such measures are incorporated into the project as standard features (irrespective of any effect they may have on a protected site, e.g., an SAC or SPA), but there must be no reasonable scientific doubt concerning their effectiveness; and,
>
> Where the reasons for a decision not to carry out an appropriate assessment under Article 6(3) of Directive 92/43 are contained in the decision, the competent authority must ensure that those reasons are

> recognisable as such, and are comprehensible from the point of view of their content. Whether a statement of reasons satisfies those requirements is a matter for consideration by the national court, which has the information necessary to assess whether members of the public in the Member State concerned are able to recognise the reasons as such and to understand them.[114]

In brief, mitigation measures can be taken into account during screening for appropriate assessment, but only if such measures are an ordinary or standard component of the proposed project; and, if the applicant, or the decision-making authority decides not to carry out an appropriate assessment, the reasons given must be clearly stated, understandable and recognised as reasons for not carrying out an appropriate assessment.

In the case of remitted application for planning permission for the Croagh wind farm, the applicant's proposed mitigation measures must be considered unsatisfactory, especially the applicant's proposal to "offset" the loss of significant habitats by planting elsewhere. It is our submission that this "offsetting" proposal is neither workable nor achievable, and that the mitigation described by the applicant cannot be acheved.

9.6.5 Other Irish High Court Cases of Relevance to the Judicial Review Proceedings

There are two recent Irish High Court cases and Judgments which may have an influence or an effect on the current legal context, and which should be taken into account, and these are: *Coolglass Wind Farm -v- An Bord Pleanála* and *Nagle View Turbine Aware Group -v- An Bord Pleanála*.

Unfortunately it was not possible within the time scale given to examine in detail the Judgments in these cases and to determine their relevance or otherwise. Therefore, we must leave it to the Board to consider them and to reach whatever conclusion is appropriate.

[114] CJEU Case C 721/21, Eco Advocacy CLG; Opinion of Advocate General Kokott, delivered on 19 January 2023 (Request for a preliminary ruling from the High Court (Ireland))

9.6.6 Wildlife Acts, 1976 and 2000

The Wildlife Acts 1976 and 2000 provide protection to most wild birds and animals. Under the Acts it is an offence to "*wilfully interfere with or destroy the breeding place or resting place of any protected wild animal".*

The basic territorial protection given for wildlife in Ireland is by the designation of Natural Heritage Areas (NHAs). These are areas considered important for the habitats present, or which hold species of plants and animals whose habitat needs protection; and, under the Wildlife Amendment Act, 2000, NHAs are legally protected from damage.

The 1976 Act has been substantially amended by the Wildlife (Amendment) Act 2000, which provided for the first time a mechanism to give permanent statutory protection to natural heritage areas, including geological and geomorphological sites. The 2000 Act also broadens the scope of the 1976 Act to include the majority of wild species; it strengthens the controls over clearance of vegetation, particularly hedgerows; it introduced measures to facilitate the ratification of the Convention on International Trade in Endangered Species (CITES), and gave statutory recognition to Ireland's commitment to the UN Convention on Biological Diversity. Other measures changed or introduced by the Wildlife (Amendment) Act, 2000, include the improvement of a number of measures to conserve wildlife species and their habitats; improvement in controls over hunting, including the regulation of commercial shoot operators; and a significant increase in penalties for convictions under the Wildlife Acts, with the possibility for the first time of a custodial sentence.

The principal objectives of the Wildlife (Amendment) Act, 2000, are to:

- Provide a mechanism to give statutory protection to NHAs;
- Provide for statutory protection for important geological and geomorphological sites, including fossil sites by designation as NHAs;
- Improve some existing measures, and introduce new ones, to enhance the conservation of wildlife species and their habitats;
- Enhance a number of existing controls on hunting, which are designed to serve the interests of wildlife conservation;
- Broaden the scope of the Wildlife Acts to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act;

- Introduce new provisions to enable regulation of the business of commercial shoot operators;
- Ensure or strengthen compliance with international agreements and, in particular, enable Ireland to ratify the Convention on International Trade in Endangered Species (CITES);
- Increase substantially the level of fines for contravention of the Wildlife Acts and to allow for the imposition of prison sentences;
- Provide mechanisms to allow the Minister to act independently of forestry legislation, for example, in relation to the acquisition of land by agreement;
- Strengthen the provisions relating to the cutting of hedgerows during the critical bird-nesting period and include a requirement that hedgerows may only be cut during that period by public bodies, including local authorities, for reasons of public health or safety;
- Strengthen the protective regime for Special Areas of Conservation (SACs) by removing any doubt that protection will in all cases apply from the time of notification of proposed sites; and,
- Give specific statutory recognition to the Minister's responsibilities for promoting the conservation of biological diversity, in light of Ireland's commitment to the UN Convention on Biological Diversity.[115]

9.6.6 The Wildlife (Amendment) Act, 2023

The Wildlife (Amendment) Act 2023, published on 20 July 2023, and which commenced in November 2023, will require all public service bodies, including government departments, agencies and local authorities to integrate biodiversity into their plans, policies and programmes. This Act was passed in order to provide in advance the necessary legal support for the implementation of Ireland's fourth National Biodiversity Action Plan (NBAP), which was launched on 25 January 2024 by the Minister of State for Nature, Heritage and Electoral Reform, Mr Malcolm Noonan, TD.

Section 5 of the Wildlife (Amendment) Act 2023 introduces a new "Part VA, Biodiversity", into the Wildlife (Amendment) Act, 2000, in which section 59B requires a specified number of public bodies to have regard, during the performance of their functions, to any plans, programmes, strategy, objectives and targets contained in the National Biodiversity Action Plan, and to have regard to

[115] National Parks and Wildlife Service webpage: https://www.npws.ie/legislation/irish-law/wildlife-amendment-act-2000

relevant guidelines to be prepared by the Minister in connection with the National Biodiversity Action Plan.

One of the other principal purposes of the Act is to give legal effect to the proposed reconfiguration of the raised bog natural heritage area network. This reconfiguration arose from a national study of Ireland's raised bog resource in 2014, entitled "*A Review of Raised Bog Natural Heritage Area Network"*, and the Act also allows for a review of blanket bog Natural Heritage Areas (NHAs).

Section 4 of the 2023 Act amends the Wildlife (Amendment) Act 2000 by the insertion of a new section 18A after section 18 of the 2000 Act, and Section 18A sets out how the 2014 review is to be completed and the requirements for future reviews of blanket bog NHAs.

Section 18A requires the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs to continue to conduct and complete the 2014 Review of Raised Bog Natural Heritage Area Network. The purpose of this review is to contribute to the goals of nature conservation by either preserving existing bog habitats or revitalizing them to achieve a favourable conservation status, to enhance the capacity of bog habitats to capture and store carbon, and to supporting initiatives related to bog habitats as outlined in a national plan aimed at addressing the decline of pollinators.

Another major objective of the 2014 Review is to select the most suitable bog habitats to be designated as natural heritage areas or to identify bog habitats which should cease to be designated as such heritage areas. When making the selection, regard can be given to environmental criteria, to economic, social and cultural needs, to facilities and projects which can significantly benefit the community and to strategic infrastructure development projects. The Minister may make a natural heritage area order or an order to revoke a natural heritage area after assessing the proposals of the Review and the observations or submissions received during a public consultation.

This is a very important item of legislation for nature conservation, and particularly for raised bogs and for bog habitats in general, and **it is our submission** that it requires An Bord Pleanála to ensure that the areas of bog in and around the proposed Croagh wind farm site are not damaged, directly or indirectly as a consequence of the construction or operation of the wind farm, and that they are given an adequate level of protection from such damage.

Because of the presence of protected species of wildlife, **it is our submission** that the Board cannot grant permission, for the reason that the necessary level of protection cannot be given if the proposed wind farm were to be permitted.

9.6.7 Flora Protection Order, 2022

The Flora (Protection) Order, 2022, which supersedes similar orders made in 1980, 1987, 1999 and 2015, provides a current list of plant species protected by Section 21 of the Wildlife Act, 1976. These include 68 species of native vascular plants, 40 species of mosses, 25 species of liverworts, one lichen species, and two species of stonewort.

The Order makes it an offence to cut, uproot or damage the listed species in any way, to offer them for sale, to taking or sale of their seeds, and to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation. A number of listed flora species are found on the site of the proposed wind farm, and therefore it is our submission that planning permission should not be granted by the Board, as the availabled information cannot give the necessary assurance that such flora will be adequately protected.

9.6.8 Invasive Alien Species

EU Regulation (No. 1143/2014) on "*the prevention and management of the introduction and spread of invasive alien species"* requires EU-wide action to prevent, minimise or mitigate their adverse impacts. Currently, 49 species are listed under the Regulation (37 have been identified as a high priority for management), and 9 of these have already been found in Ireland.

Wide experience has shown that it is technically not possible to remove most Invasive Alien Species (IAS) once they become established. To prevent the introduction of potentially high-impact IAS is therefore a first priority, while a second priority will be to eradicate or effectively control IAS at the early stages, before they become firmly established.

Targeted actions to address the problem of invasive alien species have been included in Ireland's 3rd National Biodiversity Action Plan, for the period 2017-2021. For example, Target 4.4 states that "*Harmful invasive alien species are controlled and there is reduced risk of introduction and/or spread of new species"*.

Opening up the area to allow construction and operation of the wind farm, and to allow public access (as proposed by the applicant) will significant increase the risk invasive alien species being introduced to a relatively pristine environment, even with appropriate safeguards being taken by contractors involved in the wind farm construction.

9.7 The Regulation on Nature Restoration (Nature Restoration Law) August 2024,

On 18 August 2024, The Regulation on Nature Restoration (Nature Restoration Law) came into effect and states:

> '*To meet the EU-wide objectives for nature restoration, the Regulation sets quantified and time-bound restoration targets for habitats included in Annex I of the Habitats Directive (including forest habitats, peatlands, grasslands, rivers and lakes) as well as targets for habitats of protected species under the Habitats and the Birds Directives, and the Birds Directives…'* [116]

It is our submission that the Board must pay considerable attention to, and have regard to this important new regulation. Nature restoration has been accepted as Government policy, given that one of the aims of the *Programme for Government* is to develop Ireland's Nature Restoration Plan, with prioritisation of restoration actions on State lands (section 8.8 above).

9.8 Water Framework Directive Requirements and the Objectives of the National River Basin Management Plan

The Water Framework Directive (WFD) (2000/60/EC) is perhaps the third most important EU Directive (after the Birds and Habitats Directives) which must be considered when preparing a Screening Report and a Natura Impact Statement, for the following reasons:

i) The WFD specifies objectives for water quality, including environmental and ecological objectives which must be achieved where possible; and,

ii) The objectives are also intended to protect water-dependant habitats and species, and are closely linked with the objectives of the Birds and Habitats Directives, and to maintaining the integrity of protected areas in the Natura 2000 framework; and.

The Directive, which came into force in December 2000, establishes a framework for community action in the field of water policy, and has been transposed into Irish law by:

- ✓ the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003);
- ✓ the European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009);
- ✓ the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010);

[116] https://environment.ec.europa.eu/news/nature-restoration-law-enters-force-2024-08-15_en

- ✓ the European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2010 (S.I. No. 610 of 2010);
- ✓ the European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011); and,
- ✓ the European Union (Water Policy) Regulations 2014 (S.I. No. 350 of 2014).

These Regulations cover governance, the shape of the WFD characterisation, monitoring and status assessment programmes in terms of assigning responsibilities for the monitoring of different water categories, determining the quality elements and undertaking the characterisation and classification assessments.

The Regulations were amended in 2016 to transpose the provisions of the updated Directive 2013/39/EU on Priority Substances, and Directive 2014/80/EU which amends Annex II to Directive 2006/118/EC on the protection of groundwater against pollution and deterioration. The Regulations place a legal obligation on public authorities to aim to achieve the objectives of the WFD in the performance of their statutory functions.

The WFD and the Irish Regulations have rationalised and incrementally updated previous legislation and they establish water management according to River Basin Districts (RBDs) and River Basin Management Plans (RBMPs), with the general aim of ensuring that all waters achieve at least good status by 2015, and that the current status of any waters does not deteriorate.

During the first cycle of implementation of the WFD, River Basin Management Plans were prepared for eight River Basin Districts (RBDs); these plans were valid for a six-year period and ran from 2009-2014.

For the 2nd Cycle of WFD implementation, the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts were merged to form one national River Basin District covering an area of 70,273 km^2. The National River Basin Management Plan (NRBMP) was published in August 2018 by the Department of Housing, Planning, and Local Government; and it is currently being revised and updated, with the intention that it will serve for the period 2022-2027.

Preparation of the 3rd cycle of Ireland's River Basin Management Plan (RBMP) for the period of 2022-2027 began in September 2021 when a draft of the plan was issued for public consultation by the Department of Housing, Local Government and Heritage (DHLGH).

On **26 January 2023**, the European Commission decided to refer Ireland to the Court of Justice of the European Union (CJEU) for failing to correctly transpose the Water Framework Directive (Directive 2000/60/EC) into national law. The

basis for these infringement proceedings is that, despite some progress being made by the adoption of new legislation in June and December 2022, the Commission considered that the Irish authorities had not yet fully addressed the issues previously raised by the Commission.

It is our submission that the Board should nevertheless have regard to the requirements of the Water Framework Directive and the objectives of the National River Basin Management Plan.

Given the reservations expressed in section 6 above, about the applicant's ability to prevent silt or sediment entering watercourses, and the risk of pollution of streams draining the site, together with the risk of peat slippages, it is our submission that the applicant cannot provide to the Board sufficient evidence that the water framework directive would be complied with. This conclusion is also supported by the report of the Board's Inspector (sections 5.3.1 and 5.3.4 above) who expressed similar concerns.

9.9 Observations on the Applicant's Reliance on the Wind Energy Development Guidelines (WEDG); the Status and Legitimacy of the WEDG

One of the issues raised on many occasions during the planning process was the status of the "*Wind Energy Development Guidelines for Planning Authorities"* (DoEHLG, 2006), commonly referred to as the "2006 Guidelines". See, for example, sections 6.5, 6.7.2. 6.10, 6.10.4 and 6.10.5 above.

For example, the applicant's EIAR sets out in some detail the position of these guidelines and their intended replacement. When considering shadow flicker (EIAR, Chapter 5, section 5.7), the "2006 Guidelines" and the draft revised Wind Energy Development Guidelines (2019) are relied upon significantly, and also in Chapter 11 of the EIAR when considering the impact of noise from the proposed wind farm. It is therefore appropriate to examine the status of both sets of Wind Energy Development Guidelines, 2006 and 2019,

Relatively recent information about the status of the Wind Energy Development Guidelines may be found in a Dáil question and answer session on Tuesday, 25 January 2022, when Mr Peter Burke, T.D., Minister of State at the Department of Housing, Local Government and Heritage replied to a question by Mr Denis Naughten, stating that:

> *"My Department is currently undertaking a focused review of the 2006 Wind Energy Development Guidelines. The review is addressing a number of key aspects including noise, setback, shadow flicker, community obligation, community dividend and grid connections.*

Guidance on the noise aspect is currently being finalised by my Department in conjunction with the Department of Environment, Climate and Communications (DECC), which has primary responsibility for environmental noise matters. Significant work has been undertaken on the noise elements and the two Departments recently met to discuss new developments in this regard including consideration of the impact of the revised 2030 target to generate up to 80% of our electricity from renewable sources and the need to ensure that proposals regarding the measurement and assessment of noise from wind turbines are fit for purpose. These aspects are currently being considered and further engagement between the Departments is expected imminently. Following this inter-departmental engagement, I will be in a better position to provide an update on the expected publication date of the revised Guidelines, the finalisation of which remains a priority.

It should also be noted that the review and finalisation of the Guidelines has been included as a specific action in the recently published Climate Action Plan.

When finalised, the revised Guidelines will be issued under section 28 of the Planning and Development Act 2000, as amended. Planning authorities and, where applicable, An Bord Pleanála, must have regard to guidelines issued under section 28 in the performance of their functions generally under the Planning Acts. ***In the meantime, the current 2006 Wind Energy Development Guidelines remain in force****"* [our emphasis].

It is our observation that the Minister's reply ignores two problems which have a bearing on this wind farm planning application, and which must be taken into account by the Board.

Firstly, the original Wind Energy Development Guidelines, issued in 2006, have an "official" status; they are intended to provide planning guidance to the relevant authorities, and we might add that the Government has defended them as an important policy since the time when they were issued. Therefore, there is no doubt that the 2006 Guidelines constitute a "policy" within the meaning given in the EU Directive 2001/24/EC on the assessment of the effects of certain plans and programmes on the environment, otherwise known as the Strategic Environmental Assessment Directive (SEA).

It is also clear, and Board will be aware, that the 2006 Wind Energy Development Guidelines have not been subjected to Strategic Environmental Assessment, and their legality must therefore be in doubt. By allowing these guidelines to remain in force, Ireland is in breach of the EU Strategic Environmental Directive 2001/24/EC (see section 4.4.1 below).

Secondly, while we understand that the "2019 Draft Guidelines" may have been subjected to Strategic Environmental Assessment, the Minister's reply has made it very clear that these draft guidelines are not yet in force, and the "2006 Guidelines" must be considered and taken into account by An Bord Pleanála when assessing the planning application.

It is therefore our observation and submission to the Board that:

i) When determining the remitted planning applications for the Croagh wind farm, **the Board should not have regard to the 2006 Wind Energy Development Guidelines**, even if they remain in force simply because of a failure to bring a revised set of guidelines into force;

ii) The 2006 Wind Energy Development Guidelines are hopelessly out of date, given the increasing size and height of wind turbines, and their environmental impacts, together with the increasing recognition that large-scale onshore wind farms are not the optimum way to increase Ireland's share of renewable energy; and,

iii) Given that the draft Revised Wind Energy Guidelines 2019 have not been formally adopted, and they do not have legal force, the Board should not be bound be them, or use compliance with these guidelines as a basis for granting planning permission for the proposed wind farm.

9.9.1 Requirement that the Competent Authorities of a Member State must Comply with EU Legislation and Judgment of the CJEU in Case C 24/19

The fact that the 2006 Wind Energy Development Guidelines are considered to be those in force (as stated by the Minister), but which have not been subjected to Strategic Environmental Assessment (SEA), may appear an obscure matter, but in fact there are serious consequences for An Bord Pleanála if the 2006 Wind Energy Development Guidelines are relied upon by the Board.

These consequences follow from the judgment in case **C 24/19**, in which the Court of Justice of the European Union, responded to a request for a preliminary ruling on the interpretation of Articles 2(a) and 3(2)(a) of Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment – the Strategic Environmental Assessment (SEA) (OJ 2001 L 197, p. 30).[117]

[117] Judgment of the Court (Grand Chamber), delivered 25 June 2020, in Case C-24/19, *A and Others against Gewestelijke stedenbouwkundige ambtenaar van het departement Ruimte Vlaanderen, afdeling Oost-Vlaanderen*

The background to this important and relevant case was that, on 30 November 2016, following a procedure that began in 2011, the Flanders Department of Land Planning (Belgium) granted development consent for the installation and operation of five wind turbines. The consent was subject to compliance with certain conditions laid down by: (i) an order of the Flemish Government (the 'Order'); and, (ii) a circular on the '*Assessment framework and conditions for the installation of wind turbines*' (the 'Circular'). It will be immediately obvious that this 'Circular' was in some respects similar to Ireland's Wind Energy Development Guidelines.

The applicants in the case, known only as "***A and Others***", in their capacity as residents near the site proposed for the wind farm project, brought an action before the Council for Consent Disputes (equivalent to An Bord Pleanála) seeking an annulment of the development consent. In support of their action, they submitted that the Order and the Circular, based on which the consent had been granted, infringed Article 2(a) and Article 3(2)(a) of Directive 2001/42, as neither the Order nor the Circular had been subject to Strategic Environmental Assessment, contrary to the provisions of the Directive. Against this background, the Council for Consent Disputes decided to stay the proceedings and to refer questions for a preliminary ruling to the CJEU.

Essentially, the local residents in Belgium challenged a wind farm consisting of five turbines which had been permitted, based on conditions outlined in a regional government Order from 2006 and a Circular on the Assessment framework and conditions for the installation of wind turbines. They argued that the consent granted should be annulled on the basis that the Order and the Circular should have been preceded by a SEA, and were therefore in breach of Article 2(a) and Article 3(2)(a) of Directive 2001/42 on the assessment of the effects of certain plans and programs on the environment (the SEA Directive).

At issue was the interpretation of the above Articles. Article 2(a) defines plans and program as: "*plans and program ... - which are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and - which are required by legislative, regulatory or administrative provisions*"

Article 3(2)(a) provides that an environmental assessment shall be carried out for all plans and programmes:

> *"(a) which are prepared for agriculture, forestry, fisheries,* ***energy*** [our emphasis], *industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EEC"*

The Court of Justice of the European Union (CJEU) had to consider whether the Order and the Circular amounted to a plan or programme, and also the

implications for a development such as the proposed wind farm, in the event that the Court found that there was a violation of EU law by a Member State.

9.9.2 What Are Considered to be Plans and Programmes Within the Meaning of the Directive

According to established case law (cases C-567/10, C-160/17, and C-321/18), the CJEU considered that, under Article 2(a) of the Directive, the adoption of plans or programmes (in this case the Order and the Circular) does not need to be compulsory. It is sufficient that such plans and programmes are provided for by national legislative or regulatory provisions, which determine which are the competent authorities, and what is the procedure for their adoption.

Therefore, a measure must be regarded as 'required' under Article 2(a) of the SEA Directive where the legal basis of the power to adopt the measure is found in a particular national legislative provision, even if the adoption of that measure is not mandatory. Therefore, in the case discussed, the definitions of plans and programmes covers the Order and, subject to verification by the referring court, also covers the Circular.

The CJEU therefore found that the Order and the Circular constituted plans or programmes under the SEA Directive, and it found that a SEA should have been carried out prior to their adoption by the Belgian government in 2006.

9.9.3 The Circumstances Under which a Strategic Environmental Assessment (SEA) Must be Carried Out

Firstly, the Order and the Circular concern the energy sector, which is specifically referred to in Article 3(2)(a) of the Directive as one of the sectors for which an environmental assessment is required.

Secondly, as regards the question of whether the Order and the Circular define the framework for future development consent for projects, as set out by Article 3(2)(a) of the Directive, the CJEU stated the following: According to established case law (cases C-671/16 and C-43/18), the environmental assessment is needed if the measure "*establishes a significant body of criteria and detailed rules for the grant and implementation of one or more projects that are likely to have significant effects on the environment".*

In this regard, the CJEU considered that the concept of a 'significant body of criteria and detailed rules' must be construed qualitatively and not quantitatively. Therefore, in the Belgian case cited, the importance of the requirements laid down by the Order and the Circular – that provide conditions relating to the installation and operation of wind turbines as regards, *inter alia*, shadow flicker, safety procedures, and noise emissions – indicate that those instruments constitute a framework, which is non-exhaustive, but which is sufficiently significant from a

qualitative point of view to require the preparation of a strategic environmental assessment (SEA).

Both the Order and the Circular contained various provisions in relation to the installation and operation of wind turbines, including measures on shadow flicker, safety, and noise levels.

9.9.4 Consequences of the CJEU Judgment for the Competent Authorities in a Member State

The Court of Justice outlined the consequences for a Member State and national competent authorities (such as An Bord Pleanála) of a breach of EU law in the following terms:

a) Member States are "*required to eliminate the unlawful consequences"* of breaches of EU law. Competent national authorities are "*under an obligation to take all the necessary measures, within the sphere of their competence, to remedy the failure to carry out an environmental assessment" which can involve "adopting measures to suspend or annul that plan or program".*

b) Only the Court of Justice may, in exceptional cases, temporarily suspend the Application of EU law.

The CJEU concluded that in cases where a SEA is required but is not carried out, **the plan or program, as well as all permissions for projects based on the plan or program, must be annulled**.

In the Belgian case, construction of the wind farm had not yet commenced. The Court of Justice stated that it was clear that the consent must therefore be annulled, as it was granted on the basis of the plan or program which "*was itself adopted in breach of the obligation to carry out an environmental assessment".* The Court of Justice also held that where installation of a windfarm project "*has commenced, or is even completed"*, the consent granted can be annulled (paragraph 89 of the CJEU Judgment).

9.9.5 Conditions Under Which An Official National Guideline which Breaches EU Law can be Provisionally Maintained in Force

The Court also addressed itself to considering those circumstances in which consent granted for projects would not have to be annulled, and these were stated to be limited to the following two situations:

1. Where there is a risk that the annulment "*could create a legal vacuum that is incompatible with that Member State's obligation to adopt measures to*

transpose another act of EU law concerning the protection of the environment"; (paragraph 90 of the CJEU Judgment); or,

2. If the consequences of such annulment were "*a genuine and serious threat of disruption to the electricity supply of the Member State concerned which could not be remedied by any other means or alternatives, particularly in the context of the internal market"* (paragraph 92 of the CJEU Judgment).

When considering those particular circumstances where a grant of permission or consent would not have to be annulled, the CJEU cited case C-411/17. In Case C-411/17, the Court stated that it was permissible to continue the operation of a large-scale energy plant (two nuclear reactors), where this was necessary for the security of energy supply of the Member State as a whole.

However, in its consideration of case **C 24/19**, the Court held that the cessation of activity of a limited number of wind turbines was not likely to have significant implications for the supply of electricity for the whole of Belgium.

It is our submission that the same criteria apply to the proposed Croagh wind farm; if An Bord Pleanála refused planning permission for the proposed wind farm, this decision would not be likely to have significant implications for the supply of electricity for the whole of Ireland.

It is therefore our concluding observation in this section that the Board cannot grant permission for the proposed Croagh windfarm, given the applicant's reliance on the 2006 Wind Energy Development Guidelines, and given the judgement of the CJEU case **C 24/19** cited above, and the implications of that judgement.

10. ALTERATIVE MEASURES AVAILABLE FOR MEETING IRELAND'S CARBON REDUCTION GOALS AND TARGETS

Having described some of the problems associated with large-scale wind farming, especially in the Northern and Western Region, encompassing Counties Leitrim and Sligo, it may be appropriate to review the solutions suggested to address these problems.

In section 8.3 above, when examining the policies on wind energy in the National Development Plan 2018-2027, we noted that this plan suggested:

> "*piloting of 'climate-smart countryside' projects to establish the feasibility of the home and farm becoming net exporters of electricity through the adaptation of smart metering, smart grids and small-scale renewable technologies, for example, solar, heat pumps and wind*".[118]

10.1 Small Scale Solar

Wind Aware Dromahair is disappointed that Coillte appears to have dismissed the use of Ireland's reasonably abundant solar energy as an alternative source of renewable energy. Solar energy can very usefully complement wind power, even when taking into account that in Ireland the amount of solar irradiation per square metre of land surface is only slightly lower than in large areas of France, and very close to that in Germany. Solar energy is also more likely to be available when wind speeds are low, or when there is an absence of wind.

Solar photovoltaic (PV) is also becoming competitive when compared with wind energy, though solar has been more expensive until recent years. The fall in electricity costs from solar photovoltaic projects since 2010 has been remarkable, with the weighted average levelised cost of electricity (LCOE) generated by utility scale solar PV falling by 73% since 2010, to around USD 0.10/kWh for new projects commissioned in 2017. In some countries, an LCOE of USD 0.03/ kWh is possible from 2018 and beyond, given the right conditions. The principal reasons for this steep fall in the costs of solar PV electricity have been the greatly increasing efficiency of solar collectors, mass production of components (solar cells), leading to significant reductions in the cost of the solar collectors, and a 68% reduction in total installed costs between 2010 and 2017. Solar installations can now be built much more quickly than wind farms, and have much less visual and other impacts on the environment.

Looking ahead, the fall in the levelised cost of electricity (LCOE) from solar PV is much steeper than the fall in the cost of electricity from large-scale wind farms,

[118] Project Ireland 2040 – National Development Plan 2018-2027; Section 5.2 (National Strategic Outcome 8 – Transition to a Low-Carbon and Climate-Resilient Society), page 81.

leading to an increasing degree of certainty that solar is becoming significantly cheaper than wind as a renewable source of electricity.

Some six years ago, the CEO of the Tipperary Energy Agency, Mr Paul Kenny, reminded us in his detailed and very relevant evidence to the Joint Oireachtas Committee on Communications, Climate Action and the Environment, that small-scale solar PV could provide a significant amount of this country's electricity demand:

> "*Last June Ireland baked, Britain & Germany hit records for solar energy use, we hit records for gas use. Solar energy produces 7% of Germany's electricity, the industrial powerhouse of Europe, from 1.5 million solar systems, or 2 panels per person. If Ireland was to catch up with 2 panels per person, we would effectively produce 10-12% of Ireland's electricity, or maybe higher with some storage. In Germany, 73% of this capacity is small scale (<100kW)".*[119]

10.2 Solar and Battery Energy Storage

A further important change which is taking place in many countries world-wide, and which is only now beginning to appear in Ireland, is the increasing number of households and businesses with solar PV and battery energy storage. In the United States, for example, annual installations of residential energy-storage systems have jumped from 2.25 megawatt-hours (MWh) in 2014 to 185 MWh in 2018.

This rapid growth of residential energy storage is outpacing previous predictions and expectations, and these household systems will likely become important public as well as private assets sooner than expected.

Electricity consumers clearly want the added control, reliability, and resilience that comes from having a battery at home. As a result of home batteries, many communities (including the sustainable energy communities being promoted by the SEAI) may soon have an unexpected but very useful public resource – a network of home-based batteries that residential customers have already paid for, but are not used every day.

National and regional grid systems in many regions are under strain; especially as increasing amounts of power are generated by intermittent sources of renewable

[119] Presentation to the Joint Oireachtas Committee on Communications, Climate Action and the Environment. Tues 5th March 2019; Report for the public record. Paul Kenny B. E. (Mech), MSc (Energy), Chartered Engineer, MIEI, Chief Executive officer, Tipperary Energy Agency. https://www.oireachtas.ie/en/debates/debate/joint_committee_on_communications_climate_action_and_environment/2019-03-05/ and https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/joint_committee_on_communications_climate_action_and_environment/submissions/2019/2019-03-05_opening-statement-paul-kenny-ceo-tipperary-energy-agency_en.pdf

energy, requiring more load balancing. In addition, the number of severe weather events is rising, power outages are likely to increase, resulting in more frequent system failures and higher costs.

One solution to this problem is to link together many residential batteries, so that their excess stored energy can be combined and dispatched to deliver grid support services, in the same way as system operators such as Eirgrid use demand-response programs and ancillary service resources at the present time. Since the batteries are already in place, the marginal cost of dispatching residentially stored power could be quite low. This could help system operators avoid more costly remedies such as firing up inefficient peaking plants or building extra grid infrastructure that may be used only infrequently.

Given these current and impending developments, it will be important for the Board to consider the possibility that further large-scale wind farms will not be needed, and could become uneconomic to construct and operate.

10.3 Community Energy Systems

The applicant's consideration of alternative ways of meeting Ireland's renewable energy targets also fails to mention the importance and greater public acceptability of community owned and operated wind farms, or the contribution which could be made by single wind turbines constructed by groups of residents, small towns, villages or co-operatives.

Approximately 50% of the wind energy in Denmark is generated by community-owned wind farms; and, in Ireland, a good example is provided by the Tipperary Energy Agency which has demonstrated an ability to enable people, communities and the public sector to become more sustainable in their energy use. In contrast to large-scale industrial wind farms, this Agency has identified a €500 million sustainable energy opportunity for County Tipperary and the Agency states that it is accelerating the "*transition of Tipperary to a low carbon future".*[120]

The Sustainable Energy Authority of Ireland (SEAI) is also actively promoting the concept and grant-aiding with public funds the establishment of a network of sustainable energy communities (SECs) throughout the country.[121] The SEC network is currently made up of over 200 communities around Ireland who are interested in community energy, and the number is increasing monthly. Some communities have been considering local energy systems for years, while others are thinking about it for the first time. The aim of the network is to encourage and support a national movement in every part of the country.

[120] https://tippenergy.ie/projects/

[121] https://www.seai.ie/sustainable-solutions/community-projects/community-network/

An SEC can include a range of different energy users and micro-producers in the community such as homeowners, sports clubs, community centres, local businesses and churches. In this way, an SEC connects and integrates sustainable energy, local economic development and public wellbeing.

It is our submission, and one of our key issues, that this type of community-led renewable energy development is one of the best solutions to the challenge of removing fossil fuels from Ireland's energy mix, and ensuring that this country meets the requirement to "de-carbonise" our energy system.

Using a more appropriate mix of renewable energy sources was also clearly indicated by the Minister for Communications, Energy and Natural Resources, Mr Alex White, T.D., in his address to the conference on Ireland's Energy Transition, at Dublin Castle, almost 10 years ago, on 03 June 2015, when he stated that:

> *"Onshore wind has so far been at the centre of Ireland's renewable energy generation. It has served us well, and it will continue to do so. But the next period of energy transition will also see the development of new commercial and late-stage solutions, which are likely to change the mix of renewables as technologies like solar, off-shore wind, and carbon capture and storage mature, and become more cost-effective".*

That transition is already taking place, and it is our submission that the further development of on-shore wind energy should be restricted to locations where the wind power density is high, where the turbines can operate efficiently, and where there are no significant adverse impacts on wildlife, landscape quality or land uses.

The Board should also be aware that 99% of members of the Citizens' Assembly recommended that the State should enable, through legislation, the selling back into the grid of electricity from micro-generation by private citizens (for example energy from solar panels or wind turbines on people's homes, farm buildings or land) at a price which is at least equivalent to the wholesale price. If this recommendation were to be adopted (and we understand that the necessary regulations will be passed towards the end of 2020), Ireland would join the majority of EU member states which provide an economically justified feed-in tariff to micro-generators.

Also, 100% of the members of the Citizens' Assembly recommended that the State should act to ensure the greatest possible levels of community ownership in all future renewable energy projects by encouraging communities to develop their own projects, and by requiring that developer-led projects make share offers to communities to encourage greater local involvement and ownership.

These recommendations are important because they are already leading to a change our approach to renewable energy policy. Given the examples from Germany and Denmark, and the recommendations of the Tipperary Energy Agency and the Citizens' Assembly, the current policy of favouring large-scale

wind energy projects on land is already being changed, and we particularly urge the planning authority to take note of this change.

The report of the Joint Committee on Climate Action ("*Addressing Climate Change in Ireland"*), published on 28 March 2019 and officially launched on 16 April 2019, called for new legislation which would "set ambitious climate and renewable electricity targets, and which will require five-year carbon budgets to be devised by a new Climate Action Council (which will supersede the existing Climate Change Advisory Council). The new legislation should provide a much stronger framework for the achievement of climate and energy targets and require all public bodies to make climate action a priority".

The report also recommends that "*Sustainable Energy Communities (SECs) should be provided with appropriate levels of support from the Department of Communications, Climate Action and Environment, SEAI, the Climate Action Regional Offices, and their local authority. There should be an ambitious national target set by the Climate Action Council for installed SEC capacity by 2025 which may be at least 500MW".*

The report of the Joint Committee on Climate Action also gives strong support to a number of specific recommendations by the Citizens' Assembly:

> *"100% of the Members recommended that the State should act to ensure the greatest possible levels of community ownership in all future renewable energy projects by encouraging communities to develop their own projects"*; and,
>
> *"99% of the Members recommended that the State should enable, through legislation, the selling back into the grid of electricity from micro-generation by private citizens (for example energy from solar panels or wind turbines on people's homes or land) at a price which is at least equivalent to the wholesale price"* (Section 3.2, Recommendations of the Citizens' Assembly, page 20).

The Joint Committee report also noted that:

> *"erection of wind turbines have caused deep community resentment. The State needs to learn from those mistakes to ensure they are not repeated"* (Section 4.4, Communication, page 26).

The Joint Committee report noted and recommended that:

> *"Ireland must legislate for a re-configuration of the electricity market to make it possible for community-scale projects and private micro-generation "prosumers" (both a producer and consumer of electricity) to be able to sell any surplus electricity back into the grid";*

> *"the speedy rollout of the Commission for Regulation of Utilities (CRU) smart metering programme so that all utility customers can avail of all energy services by the end 2020"* (Section 7.5.3, Microgeneration, page 54); and,
>
> *"There is huge unmet potential for community energy initiatives to deliver both energy conservation and renewable energy generation, the two key elements of meeting our energy targets. Community owned energy can help to overcome some of the obstacles to renewables by allowing citizens to participate in the transition to clean energy in a way that delivers local social and economic benefits"* (Section 7.5.4, Community Energy, page 55).

What is so significant about the report by the Joint Committee on Climate Action is that it is completely up-to-date with regard to current technologies and current strategies for changing the way in which electric power is generated, transmitted, distributed, exchanged, sold, purchased and used. Community-owned small-scale energy systems, instead of large-scale on-shore wind farms, are the way ahead; while the development of industrial-scale wind energy projects is noted as having "*caused deep community resentment".*

10.4 Offshore Wind Farms

In sections 8.2 and 8.3 above, when examining the policies on renewable energy in the Northern and Western Region Spatial and Economic Strategy 2020, the National Development Plan 2018-2027, the 20-year National Planning Framework 2040, and the Programme for Government 2020, we noted that all of these strategic plans strongly supported offshore wind energy as a cost-effective major source of renewable energy in the near future.

The plans recognise that Ireland has exceptional offshore wind resources, in terms of both strength and consistency; and the seas around the coast of Ireland are potential locations for offshore wind farms which have the potential to generate power between 70% and 90% of the time.[122]

Another report concludes that Irish waters have sufficient space available to allow for the development of offshore wind farms without impacting significantly on other stakeholders who use our waters. A study carried out jointly by the Irish Department of Public Enterprise and the North of Ireland Department of Enterprise, Trade and Investment – *Assessment of offshore wind energy resources in the Republic of Ireland and Northern Ireland* – estimates that the theoretical maximum wind resource within 12 nautical miles (22.2 km) of Ireland's territorial waters is approximately 1,018 TWh/year, from an array of 3.0 MW turbines at a grid spacing of 500m.

[122] Oceans of Opportunity -- Harnessing Europe's Largest Domestic Energy Resource. Published by the European Wind Energy Association, September 2009.

This is an assessment of the total available energy that could theoretically be derived from offshore wind energy around the coast of Ireland. However, the proportion of this resource which could be developed is subject to a combination of factors including climatic conditions, engineering feasibility, and environmental and legislative considerations. In addition, areas designated for other uses of the sea – for example, aggregate dredging and commercial shipping – will reduce this resource further. Therefore the total feasible resource based on 3.0 MW turbines at 500m spacing throughout Ireland's territorial waters ranges from 48.7 TWh/year to 55.5 TWh/year when considering water depths less than 20m and minimum distances offshore, between 2km and 10km.

The potential offshore wind resource in Ireland is therefore large-scale and much greater than the capacity of our electricity distribution system to absorb all of it for domestic or commercial uses. The comprehensive Strategic Environmental Assessment (SEA) of the development scenarios in the Offshore Renewable Energy Development Plan (OREDP) provides useful information about the development potential for offshore wind in the different resource assessment areas when environmental effects are taken into account.

Despite this enormous potential, the unfortunate fact remains that nearly all of Ireland's wind farms are almost exclusively onshore, with only the 25 MW Arklow Bank Wind Park situated offshore. This skewed distribution of wind farm development will very soon change, as an Irish-German partnership has moved a step closer to building a €1.5 billion wind farm 10km off the east coast, on a 2,440-hectare site across the Kish and Bray banks. An application was made in October 2019 by a German energy company, Innogy, and its Irish partner, Saorgus, to the Department of Planning for a foreshore licence that will allow completion of surveys needed for the project.[123]

This planned wind farm, called the "Dublin Array" is one of several very large wind farm projects planned for the Irish Sea on the basis of an expected surge in demand for electricity. In March 2025, it was reported that a public consultation would be held, and a planning application made, for this offshore wind farm.

Given that Ireland has some of the most favourable offshore wind, tidal and wave conditions in Europe, offshore development in Irish waters is expected to grow rapidly over the coming years. This was demonstrated by the scale of offshore renewable energy applications already made even by 2011, in development, or awaiting an offer for connection to the network, totalling a further 11,000 MW of wind energy in the Irish Sea alone.[124]

[123] Joint venture to build €1.5bn wind farm off Dublin coast. Irish Times, 16 October 2019.

[124] Offshore Grid Study -- Analysis of the Appropriate Architecture of an Irish Offshore Network; Executive Report. Éirgrid, August 2011.

If we consider European wind energy potential, turbine technology projections suggest that it may be equivalent to almost 20 times energy demand in 2020 ! A study by the European Environment Agency identified optimal wind locations in waters up to 20 metres deep around Britain and Ireland. Competitive offshore wind capacity in Britain is estimated at about 165 GW at an average production cost of 6.9 eurocents per kWh. In Ireland most of the offshore wind energy potential can be developed at production costs in the range of 3.0 to 5.0 eurocents (2005 prices) per kWh, which is considered to be very competitive; and there is a very reasonable certainty that these costs will decrease further.

An industry statement early in 2016 predicted that if the European wind turbine manufacturing industry is provided with an ongoing stream of offshore wind projects, the cost of electricity from offshore wind turbines will drop to less than €80 per MWh by 2025. This was followed by a series of tenders for offshore wind contracts in Denmark and Belgium where the cost of the electricity generated was below the industry prediction, and was as low as €54.00 per MWh.

A relatively recent conference paper by three researchers from University College Cork concluded that the total potential amount of offshore wind development in Ireland is 34.8 GW – 39 GW without likely significant adverse effects on the environment.[125] Offshore wind energy possesses a number of properties enabling significant cost reduction such as higher wind speed and full-load hours per year and longer lifetimes. Deployment scale and project lifetime are seen to have a significant effect on reducing offshore wind, and they concluded that "*the development of offshore wind is therefore inevitable"*.

It is therefore our observation that offshore wind farms, given the much greater areas available for their development, and their potential to generate power for a much greater percentage of the time than available to onshore wind farms, will become a much more important and significant source of renewable energy, enabling Ireland to meet its renewable energy targets. It therefore follows that the planning authority should not permit the proposed Croagh Wind Farm in an area which is unsuitable, and where the adverse impacts on the landscape, wildlife, tourism and residential amenity would be unacceptable.

[125] Joshi,S., McKeogh, E., and Dinh, V.N., 2018. Levelised cost of offshore wind energy in Ireland at different deployment scales and lifetime. Siddharth Joshi, Eamon McKeogh (School of Engineering, University College Cork, and MaREI Centre for Marine and Renewable Energy, ERI, University College Cork) and Van Nguyen Dinh (MaREI Centre for Marine and Renewable Energy, ERI, University College Cork); In; Proceedings of Offshore Energy and Storage 2018, Ningbo, China; July 4 - 6, 2018.

11. The Value and Importance of Peatlands for Carbon Capture; the Benefits of Re-wetting and Restoration

11.1 The Value of Peatlands for Carbon Capture

One of our primary observations is that the Board should recognise and take into account the value and importance of intact peatlands for carbon capture and sequestration, and the resulting benefits for climate change mitigation. This has been well recgnised during the last couple decades; for example at a meeting of the Joint Oireachtas Committee on Climate Action, held on 04 May 2021, Professor Jane Stout, TCD, an expert on peatlands, stated that

> *"However, with restoration of biodiversity and ecosystems, solutions to global challenges are all around us. In terms of climate change, biodiversity is key to both mitigation and adaptation strategies. First, in respect of climate change mitigation, slowing climate change, biodiversity can help slow carbon release. In Ireland, we hold a trump card -* ***healthy peatlands are fantastic carbon sinks****. Peatlands cover only around 3% of the earth's land surface, but store about double the amount of carbon in all forests which cover ten times that area.* ***Peatlands retain carbon and prevent it from being lost to the atmosphere, as well as acting like giant sponges, holding rainwater and releasing it slowly, preventing flooding****. They also provide habitats for plants and animals, like birds, that need these wild open spaces".*[126] [our emphasis]

Dr Catherine Farrell, also an expert on peatlands, stated on 18 May during a continuation of the discussion by the Joint Committee on Climate Action, that:

> "*Healthy peatlands deliver an array of services to people, including control of water flows, water purification, climate regulation and biodiversity.* ***It is the complex web of relationships between water, biodiversity and peat that creates the peatland, maintains it and allows the peatland to store vast volumes of carbon while also acting as a sink for carbon dioxide****. Peatlands have been regulating our climate for millennia and although globally peatlands cover only 3% of the Earth's land surface,* ***they store about double the amount of carbon as is stored in all forests, which cover a ten times greater area****.*
>
> *Healthy peatlands are therefore, without a doubt, incredibly important for our well-being.* ***Changing the water regime by draining, utilising peatlands for timber crops or wind farms*** *or digging out the valuable carbon stock will change the peatland. Our activities have already changed peatlands. The truth is that few pockets of healthy peatlands remain in*

[126] Report of the Joint Committee On Climate Action, Tuesday, 4 May 2021, page 4.

> *Ireland, functioning as they should. Peatlands have been changed into sources of carbon dioxide rather than valuable carbon stores and sinks".*[127] [our emphasis]

Re-wetting peatlands to restore or maintain their ability to capture and store carbon has also been a major topic of discussion, especially as the European Commission is providing substantial funding for this activity; and Coillte has been involved in re-wetting other peatlands in the company's ownership.

In their natural state, peatlands act as long-term sinks for atmospheric carbon dioxide, and a persistently high water table is necessary for this function. Peatlands are the most important long-term carbon store in the terrestrial biosphere; they sequester and store atmospheric carbon for thousands of years, and the peatlands in the northern hemisphere alone store approximately 450 billion tonnes of carbon.

Undisturbed peatlands accumulate carbon from the air at a rate of up to 0.7 tonnes per hectare per year; and the Wildlife Trust in Britain has estimated that a 2m deep peatland stores 8,000 tonnes of carbon per hectare. In Ireland, peatlands are estimated to store 1,085 Megatonnes (Mt) of carbon, i.e., **53% of all soil carbon stored in all of Ireland on just 16% of the country's land area**.

The delicate balance between production and decay easily causes peatlands to become carbon sources following interference. A drop in the water table due to drainage, peat removal, burning and other human influences leads to significant releases of some greenhouse gases but conversely a decrease in others (e.g. methane). Between 1990 and 2000, up to 23 million tonnes of soil carbon has been lost from Irish peatlands, mainly due to industrial peat extraction. It is therefore vital to maintain an elevated water table on peatland habitats to prevent the large-scale release of these gases.

In Ireland the long-term carbon storage function of 47% of our original peatland area has been severely diminished through domestic and mechanical peat extraction. Because of the large emissions of CO_2 from degraded peatlands, re-wetting and restoring them is one of the most cost-effective ways of avoiding anthropogenic greenhouse gas emissions.

11.2 Carbon Dynamics in Intact and Degraded Peatlands

In a natural peatland system, the movement of greenhouse gases (methane and carbon dioxide) between the peatland and the air is complex. Although peatlands accumulate carbon over the long term, they both fix and emit carbon dioxide and release considerable amounts of methane, a by-product of anaerobic decomposition. Drainage of a peatland upsets the accumulation process and

[127] Report of the Joint Committee On Climate Action, Tuesday, 18 May 2021, pages 2-3.

leads to a vast increase in the amount of carbon dioxide released to the atmosphere from the peatland, a by-product of aerobic decomposition.

11.3 The Effects of Climate Change on Peatlands

The United Nations Inter-government Panel on Climate Change (IPCC) has identified the build-up of atmospheric greenhouse gases (GHGs) such as carbon dioxide, methane and nitrous oxide as threatening global climate stability. By 2100, the global climate is expected to warm by between 1.8 and 6.4ºC; the impacts of climate change on natural ecosystems, biodiversity, human health and water resources are already being observed, are becoming more pronounced, and may be irreversible.

The Millennium Ecosystem Assessment 2005 predicted that by the end of the 21st Century, climate change would be the major cause of biodiversity loss; and this is clearly happening at an accelerated rate. The predicted increase in temperature and the changes in rainfall patterns, coupled with centuries of habitat loss, are likely to have a major impact on peatland ecosystems.

As peatland formation in Ireland is strongly linked to climate, any changes in the climate will have an adverse effect on our peatlands. The most recent years have been the warmest decade in the Irish climate record; and the global statistics provide clear evidence that climate change is accelerating:

- 17 of the 18 warmest years on record have been in this 21st century;
- Each of the last three decades has been successively warmer than any preceding decade since 1850;
- The period from 1983 to 2012 was the warmest 30-year period of the last 800 years in the Northern Hemisphere, and likely to be the warmest 30-year period of the last 1400 years;
- Since 1870, human activities have emitted some 2,145.5 $GtCO_2$-e;
- The carbon budget remaining is only 754.5 $GtCO_2$-e, if we want to limit human-induced warming to less than 2º C;
- We have used 74% of the maximum quota, leaving only 26%;
- At the current rate of emissions, that 26% will give us a little bit less than 18 years, i.e., until 2037; and,
- To stabilise warming, CO_2 and other GHG emissions will have to be reduced to zero; and, the faster this zero point is achieved, the lower the level at which global warming will stabilise; and there must be an equitable transition to zero emissions.

Analysis of the Irish meteorological monitoring network has shown that already the south and east of the country are experiencing drier summers, while the north and west are experiencing wetter winters. As a result, changes are anticipated in the

distribution of peatlands, with south-easterly sites most at risk initially. However, this may be counter-balanced by better conditions for peat accumulation further north, thanks to increased rainfall in winter.

As most peatland species are extreme habitat specialists they may be unable to adapt to the rapidly changing climatic conditions that are predicted. Further research is needed on the environmental requirements of each individual species so as to determine which species are likely to be most at risk. Unfortunately, at present, relatively little is known about the vulnerability of most of our bog plant and animal species to enable a more accurate assessment. A survey of 850 native plant species carried out by Dr Peter Wyse Jackson of the National Botanic Gardens of Ireland showed that 171 (20%) of Ireland's flora appears to be particularly vulnerable to climate change up to 2050. 34 of these vulnerable species occur on peatlands, including Fen Violet (*Viola persicifolia*), Bog Orchid (*Hammarbya paludosa*), Cloudberry (*Rubus chamaemorus*) and Marsh Saxifrage (*Saxifraga hirculus*).

11.4 Re-Wetting, Re-Vegetating, Rehabilitation and Integrated Management of Damaged or Cutover Peatlands

Within the last couple of years there has been an increasing awareness that the exploitation of Irish peatland resources is not sustainable and is having major negative impacts on climate and biodiversity. It is now widely accepted that strict protection of intact peatlands is critical for the conservation of biodiversity and to maintain their carbon storage and sequestration capacity and associated ecosystem functions.

In addition, re-wetting, re-vegetating, rehabilitation and integrated management of damaged or cutover peatlands can generate multiple benefits including maintaining biodiversity and mitigating climate change, as well as combating land degradation.

A paper by Wilson, Farrell, Mueller, Hepp and Renou-Wilson[128] demonstrates that rewetting of industrial cutaway peatlands offers a number of important benefits in terms of GHG exchange. The authors conclude that the re-establishment and, more importantly, maintenance of hydrological conditions characteristic of natural peatlands leads to a reduction in CO_2 emissions from the peat and to a potential carbon saving or avoided loss. Furthermore, the re-establishment of the carbon sequestration capacity of the peatland through re-colonisation by appropriate vegetation communities may further enhance carbon storage.

[128] Rewetted industrial cutaway peatlands in western Ireland: a prime location for climate change mitigation? D. Wilson, C. Farrell, C. Mueller, S. Hepp and F. Renou-Wilson; *Mires and Peat*, Volume 11 (2013), Article 01, 1–22, http://www.mires-and-peat.net/

This three-year study highlighted the importance of long-term GHG monitoring in order to assess more accurately the capacity of peatland to sequester carbon. The advantages offered by climate on the west coast of Ireland (persistent rainfall, cool temperatures), coupled with an inherently nutrient-poor peat substrate mean that rewetted industrial cutaway peatlands in this region could be a prime location for climate change mitigation.[129]

11.5 Further Proposals for the Re-wetting and Rehabilitation of Bogs as Agents to Mitigate Climate Change

In addition to the recommendations made at the recent meeting of the Oireachtas Joint Committee on Climate Action, and the funding promised by the EU Life programme of the European Commission, the value of re-wetting and rehabilitation of bogs as agents to mitigate climate change has been recognised in the Joint Committee's 2019 report, and more recently by An Fóram Uisce.

The report of the Joint Committee on Climate Action was published on 28 March 2019, and officially launched on 16 April 2019, called for new legislation which would "*set ambitious climate and renewable electricity targets, and which will require five-year carbon budgets to be devised by a new Climate Action Council (which will supersede the existing Climate Change Advisory Council). The new legislation should provide a much stronger framework for the achievement of climate and energy targets and require all public bodies to make climate action a priority".*

The Committee's report notes that:

> *"Peatland restoration was highlighted as a priority by the Citizens' Assembly. Currently only 1% of peatlands in Ireland are under rehabilitation or restoration. The potential for jobs through peatland restoration and rehabilitation projects has not been capitalised on despite being partially recognised by Government in the Action Plan for Jobs 2013 (action 306). The prime action of rehabilitation is rewetting, defined as 'the deliberate action of raising the water table on drained soils to re-establish water saturated conditions which can stop continued release of GHGs from these peat bogs"* (JOCCA Report, Section 8.13, pages 74-75).

The Committee quoted from an EPA STRIDE report which confirmed that:

> *"damaged peatlands are a persistent source of carbon dioxide (CO2) and, at the national level, Irish peatlands are a large net source of carbon, estimated currently at around 2.64 Mt C/year. This figure of carbon equates to 9.68 Mt of CO_2"*

[129] State urged to 'rewet' 270,000ha of peatland under new proposals. Agriland. 05 March 2019. https://www.agriland.ie/farming-news/state-urged-to-rewet-270000ha-of-peatland-under-new-proposals/

The Committee also recommended a programme of substantial targeted investment into R&D, with priority being given to those areas with the highest mitigation potential, including, but not limited to, peatland restoration

According to a relatively recent research report published by An Fóram Uisce,[130] there has been in recent years a move towards more sustainable management of peatlands, and restoration of degraded sites has been key to this. Restoration involves restoring abiotic and biotic conditions close to the original state, including the hydrological regime and surface topography followed by the reintroduction of peatland flora, such as *Sphagnum*. Studies have shown that raising the water table to, or near, the surface is sufficient to create suitable conditions to promote recolonization of vegetation, this being crucial to restoration.

Peatlands have been increasingly recognised as very valuable ecosystems and are highly significant for the global efforts to combat biodiversity loss, climate change, as well as contributing to most of the United Nations Sustainable Development Goals (SDG). Key recent developments have included the 2019 UN Environment Assembly resolution on '"*Conservation and Sustainable Management of Peatlands"*, which acknowledges the contribution of peatlands in the implementation of the 2030 Agenda for Sustainable Development, while further impetus is provided by the United Nations Decade on Ecosystem Restoration (2021–2030).

There has been increasing pressure to rewet sites in Ireland following the publication of the Bogland report in 2011, which recommended that cutaway peatlands be restored where possible. This was later adopted by the National Parks and Wildlife Service in the National Peatland Strategy; and, in 2018, the National Planning Framework stated that the qualities of natural and cultural heritage, including peatlands, should be conserved and enhanced, and the NPF recommended that full restoration should be promoted over rehabilitation only.

Unfortunately, the first Climate Action Plan (2019) failed to incorporate this recommendation, and suggested instead the development of rehabilitation measures for exploited and degraded peatlands, and to restore or rewet designated sites only (Special Areas of Conservation and Natural Heritage Areas).

Rewetting peatlands has been identified as an important management technique to improve water quality, reduce greenhouse gas emissions, improve carbon sequestration, and promote biodiversity. Peatlands can easily be rewetted by blocking drainage ditches or installing bunds, which raises and stabilises the water table and increases water retention. This alteration of peatland hydrology is essential for the reestablishment of 'peat building' vegetation such as *Sphagnum*,

[130] Optimising Water Quality Returns from Peatland Management while Delivering Co-Benefits for Climate and Biodiversity; Report produced for An Fóram Uisce, March 2021; 158 pp.

and for reduced organic matter decomposition, which in turn allows the peatland to revert back to a carbon sink.

Raising the water table enables recolonization and spread of *Sphagnum* for an Atlantic cutaway blanket bog, but this is more efficient when remnants of the original bog and, therefore, a source of propagules remained within the production area. The 'natural' recolonization of peatland vegetation can take some time, and for severely degraded peatlands, restoration can involve the reseeding or transplanting of essential peatland species following rewetting, including the reintroduction of bryophytes.

It is our observation that the proposal to construct a wind farm on the application site is completely opposed to the policy of rewetting, restoring and re-vegetating denuded peatlands, and therefore the wind farm project as a whole should not therefore be permitted by Leitrim County Council.

It is our further observation that the task of maintaining and, where necessary, restoring the bogs on the application site, including re-planting or transplanting with Sphagnum and other peatland plants, would be an extremely positive project, combining much-needed employment, biodiversity restoration, and climate benefit. Such a project would almost certainly be welcomed by local communities in north Leitrim, in contrast to the widespread opposition to the proposed wind farm.

It is also our observation, and worth reminding the planning authority that it is legally bound by National and European legislation (The Wildlife Acts, E.U. Habitats and Birds Directives) and international conventions (Ramsar, Bern Convention, Convention on Biological Diversity) to do everything possible to protect peatlands now and for future generations. In County Leitrim specifically, only 6.65% of the original extent of raised bog remain intact and only 20.72% of blanket bog remain intact. As pointed out earlier in this section, peatland habitats have been severely diminished in Ireland, and this destruction is in complete conflict with other legislation and international conventions including the UN Convention on Climate Change, Bonn Convention, World Heritage Convention, Water Framework Directive, Environment Liability Directive, Planning and Development Acts, National Monuments Acts, Environmental Directive, EIA and SEA.

Before concluding this section, it may be appropriate to provide the alternative view expressed by Coillte on the topic of carbon capture and sequestration by peatlands.

11.6 Response by Coillte to the Issue of Carbon Capture and Sequestration by Peatlands

In response to Leitrim County Council's question number 78, which asked the applicant to consider the many third party submissions received, and to respond to them, the further information provided by Coillte noted that:

> *"[In] Section 10.2.3.3 of the submitted EIAR in total, it is estimated that 1,655,640 tonnes of carbon dioxide will be displaced over the proposed thirty-year lifetime of the wind farm. Based on the calculations under Section 10.2.3.3 please note the following:*
>
> *"Based on the Scottish Government carbon calculator as presented above 122,074 tonnes of CO2 will be lost to the atmosphere due to changes in the peat environment and due to the construction and operation of the proposed development. This represents 7.4% of the total amount of carbon dioxide emissions that will be offset by the proposed wind farm project. The 122,074 tonnes of CO2 that will be lost to the atmosphere due to changes in the peat environment and due to the construction and operation of the proposed development will be offset by the proposed development in approximately 26.5 months of operation.*
>
> *Based on this carbon displacement, it can be concluded that the operation of the proposed development will have a significant, positive effect on climate as a result of reduced greenhouse gas emissions, including carbon".*[131]

It is our observation on the above statement that the reduction in the area of active peatland caused directly by the wind farm, and other areas of peatland which will be affected by drainage, roads and other infrastructure associated with the proposed wind farm, will result in a greater loss of carbon capture and storage than calculated by the applicant. However, the renewable energy to be generated by the proposed wind farm must also be offset by the very large amounts of energy, mostly in the form of fossil fuel use, required to manufacture the wind farm materials and components (embodied energy), and the amounts of energy used for transportation of materials and construction of the wind farm. Concrete and steel used in the construction of the wind farm require huge amounts of energy to manufacture.

[131] Further Information Response to Leitrim County Council for Croagh Wind Farm; Item No. 78 Response, section 2.78.1.9 Carbon Balance, page 131.

12. IMPACTS OF THE PROPOSED WIND FARM ON ECOLOGY AND WILDLIFE, ESPECIALLY BIRDS LISTED IN ANNEX I OF THE EU BIRDS DIRECTIVE

12.1 Introduction and Our Observations on the Sensitivity, Vulnarability and Uniqueness of the Site Location

This proposed development is in an environmentally sensitive area; Annex I habitats are within the proposed project profile. The proposed development is in a highly sensitive catchment in relation to the Water Framework Directive has not been adequately considered.

The proposed site is in the upland hills, just south of Dromahair, at the northern end of what is essentially a linear ridge of uplands and small mountains range which arcs from Kilrowan Mountain near Keadue, approximately 15 kilometres away in County Rosommon, through Arigna, Corrie Mountain or Seltnasaggart, 'the black banks' and including Killavoggy near Dromahair. Several of these mountains are nationally important sites, designated as pNHAs and hosting critically endangered, Red-listed and near threatened species.

These uplands and mountains of natural and semi-natural habitats consist of blanket bog and heathlands (both of which are EU recognised important habitats), along with species-rich natural and semi-natural grasslands and intermingling of mosaics of these along with adjoining hillsides of intact and pre-famine field systems and low-intensity farmland, known as HNVf (High Nature Value farmland), another EU-recognised important habitats system.

These landscapes were formed through aeons of geological and ecological processes, and by many generations of farming practices which worked in harmony with the seasons and with nature. Over thousands of years on these uplands the biodiversity became fully adapted and in tune for an 'open lands' ecology. For decades these open lands habitats throughout the country have been under pressure from various land use practices such as large scale afforestation and intensification. This in turn has severely impacted on the open land species which depended on such habitats. This is one of the reasons why our 'open land' species make up the vast majority of our rare, critically endangered and Red Listed species.

12.2 Biodiversity Protection, Nature Restoration and Climate Change Mitigation Commitments

The Board will know that, on 9 May 2019, Ireland declared a Climate & Biodiversity Emergency, and that climate change and biodiversity loss are intrinsically linked and inseparable. However, the applicant appears to have set renewable energy goals against biodiversity and conservation, prioritising one over the other, a

position which we consider to be scientifically flawed. In our view, biodiversity and climate change commitments have equal standing. Creating opportunities to achieve both without compromise is critical as biodiversity assists in climate change mitigation and adaptation. Any 'solutions' that pit one against the other are unsustainable and catastrophically flawed.

On 18 August 2024, The Regulation on Nature Restoration (Nature Restoration Law) came into effect and states:

> '*To meet the EU-wide objectives for nature restoration, the Regulation sets quantified and time-bound restoration targets for habitats included in Annex I of the Habitats Directive (including forest habitats, peatlands, grasslands, rivers and lakes) as well as targets for habitats of protected species under the Habitats and the Birds Directives, and the Birds Directives…'* [132]

It is our submsison that the proposed Croagh Wind Farm, if permitted, would create a serious and **unmitigable** threat to at least three bird species and their environments listed under Annex 1 of the EU Birds Directive (2009/147/EC), and is in breach of Article 4.1 of Directive 2009/147/EC.

The proposed Croagh Wind Farm, if permitted, and despite proposed mitigation measures, would also create an **unmitigable** threat to five bird species and their environments that are Red-Listed (High Conservation Concern) in the *Birds* of Conservation Concern in Ireland 2020-2026.

The proposed Croagh Wind Farm, despite proposed mitigation measures, would also create entirely avoidable risks to habitats included in **Annex I of the Habitats Directive**.

While much of these upland areas, including the proposed windfarm site contain **Annex I Habitats** of peat soils, heathland and blanket bog, it does not presently have officially recognized designation/protection. However it is still afforded recognition under **Regulation 27** of the Birds and Natural Habitats Regulations and also recognised under **Article 10** of the Habitats Directive.

Regulation 27 provides that **all public authorities have a responsibility to avoid the deterioration of natural habitats and species protected under the Birds and Habitats Directives** and to exercise their functions and statutory powers in compliance with the Directive's requirements.

In addition, Article 10 states that Member states shall endeavour to **improve the ecological coherence of the Natura 2000 network** to encourage the management of features of the landscape which **are of major importance for wild fauna and flora**. Such features are those which **by virtue of their linear**

[132] https://environment.ec.europa.eu/news/nature-restoration-law-enters-force-2024-08-15_en

and continuous structure such as rivers with their banks or the traditional system for marking field boundaries or their function as stepping stones (such as ponds and small water bodies) are essential for the migration, dispersal and genetic exchange of wild species.

Article 12 of the Habitats Directive requires there to be a strict system of protection for species listed in Annex IV of the Habitats Directive.

It is therefore our observation that the proposed Croagh Wind Farm is not in compliance with the objectives of the **EU-Wide Nature Restoration Law** and is potentially detrimental to Ireland's climate change objectives.

12.3 Ecological Connectivity and Wildlife Corridors

One of the most basic features of terrestrial ecosystems is their connectivity – as every ecologist knows, plants and animals move along wildlife corridors which enable speciesto disperse, to find new areas, and to reduce competition. But this simple fact does not appear to have been taken into account by the initial decision to grant planning permission for the proposed wind farm.

WE would point out that the uplands at Croagh and adjoining townlands connect and form a corridor with several other significant uplands and mountain ranges of European importance for both habitats and species, primarily because of the number of Special Areas of Conservation (SACs), Natural Heritage Areas (NHAs) and Special Protection Areas (SPAs) whch they hold. These areas include Bolybrack Mountain, the most intact plateau blanket bog in the country, and the Slieve Anierin and Cuilcagh Mountains Uplands SAC which travel on in to Cavan and Fermanagh, going on to connect with Slieve Rushen Mountain, Knockninny and on to Slieve Beigh in Monaghan and Armagh. Connectivity is also apparent to the northwest from the Croagh area to Bolybrack, to Bohey Mt, Dough Mt and the many important North Leitrim upland SACs on into Sligo and Donegal.

It is visually obvious that the impact of the proposed wind farm, leading to the loss of upland areas and blanket bog, combined with the existing large areas of bog, heathlands and high nature value farmland already lost to industrial conifer plantations, and the areas already occupied by the existing wind farms, will damage the connectivity of the Croagh area upland habitats between the Kilronan and Roscommon areas, across Leitrim and on into Cavan and Fermanagh uplands which are internationally important and designated sites for birds and other wildlife. Therefore the proposed wind farm would increase the already significant blockage of an important flight corridor, causing a loss of connectivity.

It is our submission that this is an important “in-combination” effect which appears to have been overlooked by the appplicant, and we therefore urge the Board to consider it thoroughly.

12.4 Bird Migration Corridors and Bird Species which Migrate

There is a natural 'open gap' in the uplands landscape which is situated between the Croagh development site and its adjoining townlands and Benbo Mountain to the north. This natural corridor is met to the south of Croagh with a 15 kilometre upland and ridge line of well over 100 turbines, each with three rotating blades, each blade tip travelling with an average speed of 178 to 200 miles per hour (320km per hour) and turning this line of turbines into a “*virtual rotating egg slicer*” for flying birds.

Many birds recorded in Ireland are migratory species, travelling to or through the country twice a year. This includes the winter and summer migrating birds, a virtual non-stop movement of species.

Some of the most notable birds which migrate to Ireland are Whooper Swans and Geese species. Swans are one of the heaviest flying birds in the world. They mostly fly in formation and in family groups. They are known to have poor manoeuvrability and a significant collision risk, even with stationary structures. Overhead cables can often be seen to have anti-collision devices attached, especially multiple power lines. While the Whooper Swans and Geese species are natural experts in weather knowledge, selecting the right weather and wind conditions which aid their flight progress. However they can also encounter poor weather conditions, such as poor visibility, low cloud, dense fog etc.

It is our observation that the proposed wind farm, if permitted, would create a significant danger and risk to migratory birds using this natural gap or corridor.

12.5 The Hen Harrier

12.5.1 Status of the Hen Harrier (*Circus cyaneus*)

The Hen Harrier is an upland bird, a European Protected Annex I Species, and is critically endangered as a resident breeding bird in Ireland with fewer than 100 pairs now considered to occur throughout the country. Immediate action is required to save the remaining breeding birds. The viability of Hen Harriers is so precarious that the loss or failure of a single breeding pair for a single breeding season must be considered a significant effect.

Hen Harriers are strictly protected throughout the EU and are considered a priority species wherever they occur, not just in the Special Protection Areas (SPAs), specifically designated for them.

Hen Harriers are apex predators which require extensive areas of open land to forage and adequately provision their young in a timely manner. Lack of prey and excessive or prolonged journey times between foraging grounds and nesting sites to provision nestlings is an acknowledged major contributor to nesting failure.

Failure to feed, failure to breed, failure to bring on new recruits leads to localised extinctions. The loss of one adult bird in the early courtship phase or during the nesting or provisioning stages caused by turbine blade strike would most likely lead or result in the loss the breeding pair to the area.

John Mathews, in his submission against the Croagh Wind Farm development writes:

> *"It is accepted scientific knowledge that loss of habitat is the number one cause and driver to extinction of a species. Birds and other species do not choose to go into decline, nor go extinct. They are being 'driven' to extinction by our society's actions. What 'we' as a society are doing is not compatible with the habitats and requirements that these birds and othe species need."*

The **2022 National Hen Harrier Survey** has indicated further declines in the Irish breeding numbers and range of the species.

The Government's recently published **Hen Harrier Threat Response Plan** (**HHTRP**), in accordance with **Regulation 39 of S.I. No. 477/2011; Section 2(b)** which lays the obligation "*to preserve, maintain or re-establish a sufficient diversity and area of habitats" for Hen Harriers (Circus cyaneus) "including the creation of protected areas, as appropriate, the upkeep and management in accordance with the ecological needs of habitats inside and* ***outside the protected zones, re-establishment of destroyed biotopes and the creation of biotopes"*** [highlighted by John Mathews].

The HHTP Plan consultation document, (ten years in the making) publicly states and confirms **afforestation** and **windfarms** to be the first and second greatest threat to the continued existence of the species. It is clear that immediate action is required to save the species.

Our submission will show that this proposed wind turbine development will be a direct threat to the birds, their young, their foraging area and the prey species food source they require.

12.5.2 Hen Harrier sightings in and near the Proposed Wind Farm Development Site

The latest survey results show that there are more breeding pairs of Hen Harrier outside of SPA's than inside the designated areas. This result demonstrates the

huge importance of the open countryside and uplands like these at Croagh and the greater area needed for this species.

This area of County Leitrim and the greater border region of the country, while not a Special Protection Area (SPA) for Hen Harriers, it is officially recognised and acknowledged as a regionally Important breeding area for Hen Harriers.

Nine breeding pairs were recorded nesting around but not inside the *Cuilcagh-Anierin Uplands SAC across Lough Allen* from these development application lands. More Hen Harrier also occur breeding on the opposite side of the valley between this proposed development site and BoleyBrack Mountain, an SAC. Most of the Hen Harriers are nesting around the periphery of the SAC, which demonstrates the importance of the open lands nature of area preferred.

From personal communications with a retired National Parks and Wildlife Service Conservation Ranger, who saw and recorded a pair of Hen Harrier in the breeding season for at least the last two decades and more (a quarter of a century) in the *Killavoggy, Beigh, Garvagh Glebe, **Croagh**, Lisgavneen upland area.*

The birds were seen in many townlands including but not confined or restricted to these areas, even though they were often referred to as “the Killavoggy Hen Harriers area pair”. Hen Harriers have been observed in the breeding season foraging and quartering the lands and open fields especially so when foraging weather conditions on the uplands are inclement and or sub optional.

One other local resident (IH), living in Beagh, who farms as well as having an interest in wildlife, and “walks the land every day”, reports that Hen Harriers fly regularly over his land, especially the male bird, and less frequently the female.

Another local resident (NG), also living in Beagh, provided a report which stated that:

> *“I have lived in Beagh since 1993. As a professional gardener and a small holder, a significant proportion of my time is being in the outdoors in all seasons and especially during the Spring and the Summer growing months.*
>
> *The first time I saw the male hen harriers was in late spring into early Summer of 1993 as a male hen harrier regularly flew over my lands at Beagh Dromahaire and along the stream which is close to my property. It was later in 1993, whilst walking my dogs in the evening time that I saw the much darker female hen harrier, sometimes close enough to see its owl shaped face.*
>
> *Over the years since, I have seen hen harriers in the vicinity of Beagh and Killavoggy, on a regular basis, sometimes seeing them from my car, slowly flapping close over the fields on the hill down to the neighbouring townland*

of Killavoggy or indeed when I am collecting my daughter from the local school bus".

12.5.3 Impacts of the Proposed Wind Farm on the Hen Harrier

12.5.3.1 Noise

Most of what is written about the impacts of noise from wind turbines considers only the impact on people. However, the adverse impacts of noise on survival of birds is a problem well known to ornithologists.

Anyone with any experience of bird surveying will know and be aware of the negative impacts of wind turbine noise from both turbine gearbox, nacelle and blades, especially so when downwind of the turbine. It is almost impossible to hear bird calls, contact calls, courtship calls or alarm calls, drowned out by the turbine.

This increase in noise effects and can prevent ground perching and ground nesting birds from effectively hearing warning and alarm calls from other birds alerting to incoming or predator presence. This increase in noise combined with turbine blade 'shadow flicker' for birds has to have led to increased risks for these birds. Ability to hear alarm calls in sufficient time for possible predator approach is critical.

12.5.3.2 Adverse Impacts Resulting from Construction of the Road Network around and inside the Proposed Site

Construction of roads into any area, but especially so in to natural and semi-natural habitats such as blanket bog and uplands has massive negative impacts and knock-on continuous consequences for the integrity and long term viability of the site, its natural functions and especially so for the habitat dependent species which occur there on, the majority of which being ground dwelling or ground nesting.

These road networks allow for, create or provide a direct route into the majority of the natural habitats. Mammalian predators such as Pine marten, Fox, Badger, (cats; feral and farm) would not usually be found in these habitats. By creating the road/route these mainly crepuscular and nocturnal predator species use the road as a hunting route where they can make exploratory trips from into the areas of intact habitats which they never would have access to be before. The linear nature of the roads and tracks 'invites the mammalian predators to travel further and to identify the area with their scat markings.

12.6 Other Bird and Wildlife Species

At this stage, 63% of Irelands bird species are in decline, Red or Amber Listed.

These uplands, mountains and various rough grasslands habitats host and or are utilised by an extensive range of species, many which are fully **EU Annex I** and

Annex IV protected and or are Irish Red Data Listed as status Red or Amber protected as endangered. These range from resident species such as Meadow Pipit, Snipe, Dipper, Red Grouse, Skylark, Raven, Kestrel, Sparrowhawk, Common Buzzard, to EU annex listed species such as Dunlin, Golden Plover, Merlin and Hen Harrier, also to summer breeding visitor birds such as Warbler species, Swallow, Sand Martin, Swift, Wheatear, Grey Wagtail and Cuckoo.

Occasional Willow Warbler are found in the area where some low growing 'scrub' bush vegetation occurs, providing sheltered slopes adjacent to streams which flow through and from the site.

Winter migratory species such as Golden Plover have been recorded in the greater local area on wetter and more open blanket bog during the spring migration and occasionally in the nesting season. Resident Dipper also use the upland eroding streams and watercourses for foraging and nesting if suitable vegetated overhung ledges occur along the streams.

12.7 Other Wildlife in the Area

Other species of interest include plants, pollinators and also European Otter, Bat species, Badger and Irish Hare, Common Lizard and Common Frog.

There has not been an adequate assessment of the potential impact on species listed in Annex IV and Annex V of the Habitats Directive; notably bats, otter and Common Frog. (otters do utilise and frequent upland and heathland eroding streams and stream banks.) (Leisler's Bat fly high and can compete with Swallows in late evening/daylight for flying insects, food resources) Frogs are an important prey species for Otter, Kestrel, Hen Harrier and Common Buzzard.

Several species of bat native to Ireland are within their range within the OS squares which cover this application site.

Article 12 of the Habitats Directive requires a strict system of protection for all species listed in Annex IV of the Habitats Directive.

12.8 Further Observations

If the wind farm development is permitted on these open uplands, Blanket Bog and High Nature Value lands, it will cause further negative impacts and loss of prime habitat for forage and or breeding for Hen Harriers and other endangered bird species.

The abject failure to provide for such a threat response plan has compromised multiple other obligations under the requirements of the Regulations. This is quite apart from presiding over a period when Ireland's Hen Harrier population has undergone a significant decline. At the same time however, the State has

continued to benefit unlawfully, both directly and indirectly, from the development of forestry and wind energy on sites important to Hen Harriers, both within and outside the Natura 2000 network, while effectively attempting to 'run down the clock' on the species. The State's approach now, including, i.e., in State sponsored forestry and wind energy, fails to reflect the facts that:

a) The duty to achieve Favourable Conservation Status, FCS applies on Ireland as an EU Member State, and will simply be more difficult and onerous and costly to achieve, if the State continues to disregard its conservation obligations to Hen Harrier;

b) A Member State cannot benefit from its failures to implement EU law as clarified by the EU Court of Justice which it stated in case c-374/986.

This proposed development is in conflict with the Government's own policy and objectives on to Hen Harriers. The forestry and wind farming industry in particular need to be aware of the implications of further declines in the Hen Harrier, possibly giving rise to future liabilities under the Environmental Liabilities Directive.

Wind turbine developers need to find a way to live with Hen Harriers not the other way around. Siting windfarms in prime habitats used and required by Hen Harrier and their quarry species is not the way to go and demonstrates a deficiency and lack of understanding of species dynamics.

12.9 Terrestrial Vegetation and Habitats on and Around the Wind Farm Site: Annex I Habitats; Wet and Dry Heath, Bogs and Forests

12.9.1 Summary

- The loss of Annex I habitats (Wet heath, blanket bog and dry heath)
- Loss of Wet Heath (4010)
- Loss of Dry Heath (4030)
- Loss of Upland Blanket Bog (7130)
- Long-term impacts from dust deposition and biodiversity loss
- Contradiction with conservation objectives

12.9.2 The Importance of Annex I Habitats

Upland habitats encompass unenclosed land situated above 150 metres in altitude, along with adjoining lowland areas that share similar ecological characteristics. These habitats include blanket bogs, heaths, flushes, dense bracken, exposed rock and scree, and semi-natural grasslands. They represent

some of Ireland's most expansive and ecologically significant landscapes, supporting a diverse range of flora and fauna. Heathland is an ecosystem of great conservation value because of the important cultural and ecological services it provides, such as water purification, carbon sequestration and biodiversity conservation.[133] [134]

Upland habitats form Ireland's largest stretches of semi-natural landscapes, renowned for their scenic beauty, sense of wilderness and vital role in biodiversity conservation. Covering nearly 19% of the country (Perrin et al., 2009), these areas provide essential ecosystems that support numerous plant and animal species. Many of these habitats are protected under Annex I of the EU Habitats Directive due to their ecological significance, while rare and threatened species, including those listed in Annex II of the Habitats Directive and Annex I of the EU Birds Directive, rely on these environments for survival.

Despite their importance, upland habitats are highly fragile and susceptible to irreversible damage. The delicate nature of their soils makes them particularly vulnerable to erosion, habitat degradation and loss of biodiversity. The increasing focus on upland areas for wind energy developments poses a growing threat, leading to habitat fragmentation, hydrological alterations, increased human disturbance, and heightened risks of soil erosion and landslides. Additionally, climate change further exacerbates these vulnerabilities, with shifting weather patterns impacting the delicate balance of these ecosystems.

Given the ecological significance and increasing pressures on upland habitats, it is crucial to implement sustainable land management policies that prioritise their protection. Ensuring that Annex I habitats achieve and maintain *favourable conservation status* is essential for preventing further degradation. Conservation efforts must also safeguard rare and threatened species that depend on these ecosystems, aligning with commitments under the EU Habitats and Birds Directives. Proactive management strategies, habitat restoration and responsible land-use planning are vital in preserving these unique landscapes for future generations.

Habitats listed under Annex I of the EU Habitats Directive that occur within the area of the proposed Croagh Wind Farm development are:

Habitat code	Habitat Name
4010	Northern Atlantic wet heaths with *Erica tetralix*

[133] Gimingham, C. H. 1972. *Ecology of heathlands*. Chapman and Hall, London, UK.

[134] Fagundez, J. 2013. Heathlands confronting global change: drivers of biodiversity loss from past to future scenarios. Annals of Botany 111: 151–172.

4030	European dry heaths
7130	Blanket bog

And while the areas within or surrounding the proposed Croagh Wind Farm site are not designated SACs or SPAs – with the exception of the waterways that are connected to the SACs and SPAs (discussed in section xxx above) – some of the habitats within the proposed wind farm development site are nevertheless listed under **Annex I** of the EU Habitats Directive and – as is evident from the extract below – Ireland is still legally bound and required to conserve these habitats – and the listed species that depend on them – the legal status of protection is not exclusive to SACs.

> *"The main aim of the Habitats Directive is to contribute towards the conservation of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status. These annexes list habitats (Annex I) and species (Annexes II, IV and V) which are considered threatened in the EU territory. The listed habitats and species represent a considerable proportion of biodiversity in Ireland and the Directive itself is one of the most important pieces of legislation governing the conservation of biodiversity in Europe.*
>
> ***Under Article 11 of the Directive, each member state is obliged to undertake surveillance of the conservation status of the natural habitats and species in the Annexes and under Article 17, to report to the European Commission every six years on their status and on the implementation of the measures taken under the Directive****".*[135] [our emphasis]

[135] https://www.npws.ie/publications/article-17-reports

13. IMPACTS OF THE PROPOSED WIND FARM ON RESIDENTIAL AMENITY, PUBLIC HEALTH AND INFRASRUCTURE – NOISE, SHADOW FLICKER, ATMOSPHERIC POLLUTION AND INTERFERENCE WITH TELECOMMUNICATIONS

13.1 Introduction

Wind turbines have become a key source of renewable energy but concerns about their potential negative effects on human health have surfaced, and continue to do so. These concerns largely revolve around noise (section 13.2 below), shadow flicker (section 13.3 below) and the general impact on well-being due to proximity to wind farms; while property devaluation and land sterilisation are also causes for concern.

However, a more recent concern, which poses a serious environmental threat, is that of 'blade shedding' (section 13.4 below). This is the erosion that occurs on the edges of turbine blades in the form of microplastics or Bisphenol-A (BPA). Many manufacturers now claim that their products are BPA-free, but not so with industrial wind energy. The wind power industry has chosen to neglect and under-communicate this, as has the applicant for the proposed Croagh Wind Farm.

13.2 Noise

we wish to draw the attention of the Board to two recent studies of the effects of wind turbine noise on people living near windfarms; as these studies have come to similar conclusions:

> *People who live near wind turbines complain of symptoms that include some combination of the following: difficulty sleeping, fatigue, depression, irritability, aggressiveness, cognitive dysfunction, chest pain/pressure, headaches, joint pain, skin irritations, nausea, dizziness, tinnitus, and stress. These symptoms have been attributed to the pressure (sound) waves that wind turbines generate in the form of noise and infrasound. However, wind turbines also generate electromagnetic waves in the form of poor power quality (dirty electricity) and ground current, and these can adversely affect those who are electrically hypersensitive. Indeed, the symptoms mentioned above are consistent with electrohypersensitivity. Sensitivity to both sound and electromagnetic waves differs among individuals and may explain why not everyone in the same home experiences similar effects.*[136]

[136] *Adverse health effects of industrial wind turbines*, by Roy D. Jeffery, MD FCFP, et al, and in *Wind Turbines Make Waves: Why Some Residents Near Wind Turbines Become Ill* by Magda Havas and David Colling

Noise regulations can be a considerable barrier to Industrial Wind Turbines (IWT) developments, as they can have a substantial effect on wind turbine spacing and, therefore, the cost of wind-generated electricity. Industrial wind turbines are being placed in close proximity to family homes in order to have access to transmission infrastructure.

13.2.1 Global Reports of Noise Effects

During the past few years there have been cases reported of adverse effects. A 2006 Académie Nationale de Médecine working group report notes that noise is the most frequent complaint. The noise is described as piercing, preoccupying, and continually surprising, as it is irregular in intensity. The noise includes grating and incongruous sounds that distract the attention or disturb rest. The spontaneous recurrence of these noises disturbs the sleep, suddenly awakening the subject when the wind rises and preventing the subject from going back to sleep. Wind turbines have been blamed for other problems experienced by people living nearby. These are less precise and less well described, and consist of subjective (headaches, fatigue, temporary feelings of dizziness, nausea) and sometimes objective (vomiting, insomnia, palpitations) manifestations. [3]

Furthermore, in their study of the effects of industrial wind turbine noise on sleep and health, Nissenbaum *et al,* 2010, used validated questionnaires in a controlled study of 2 Maine wind energy projects. They concluded that:

> "*the noise emissions of IWTs disturbed the sleep and caused daytime sleepiness and impaired mental health in residents living within 1.4 km of the two IWT installations studied"*.[137]
>
> "*Industrial wind turbines (IWTs) are a new source of noise in previously quiet rural environments. Environmental noise is a public health concern, of which sleep disruption is a major factor. To compare sleep and general health outcomes between participants living close to IWTs and those living further away from them, participants living between 375 and 1400 m (n = 38) and 3.3 and 6.6 km (n = 41) from IWTs were enrolled in a stratified cross-sectional study involving two rural sites. Validated questionnaires were used to collect information on sleep quality (Pittsburgh Sleep Quality Index - PSQI), daytime sleepiness (Epworth Sleepiness Score - ESS), and general health (SF36v2), together with psychiatric disorders, attitude, and demographics.*
>
> *Descriptive and multivariate analyses were performed to investigate the effect of the main exposure variable of interest (distance to the nearest IWT)*

[137] Adverse health effects of industrial wind turbines - PMC (nih.gov): https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3653647/

on various health outcome measures. Participants living within 1.4 km of an IWT had worse sleep, were sleepier during the day, and had worse SF36 Mental Component Scores compared to those living further than 1.4 km away. Significant dose-response relationships between PSQI, ESS, SF36 Mental Component Score, and log-distance to the nearest IWT were identified after controlling for gender, age, and household clustering. The adverse event reports of sleep disturbance and ill health by those living close to IWTs are supported".[138]

13.2.2 Indirect Effects and Annoyance

When assessing the adverse effects of IWTs, it is important to consider what constitutes human health. The World Health Organization (WHO) defines health as '*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*'.[139]

And according to the night noise guidelines for Europe: "*Physiological experiments on humans have shown that noise of a moderate level acts via an indirect pathway and has health outcomes similar to those caused by high noise exposures on the direct pathway. The indirect pathway starts with noise-induced disturbances of activities such as communication or sleep".*[140]

13.2.3 Evidence of an Increasing Extent of Adverse Noise Impacts from Wind Farms

According to GP van den Berg, whose work has been at the forefront of understanding amplitude modulation noise from wind farms and particularly in identifying night-time problems with wind shear and atmospheric stability, '*The evidence of adverse noise impact from wind farms, wind turbines and (excess) amplitude modulation is growing*'.[141]

The figure below (**Figure 6.3.3**), provided by GP van den Berg on the MAS Environmental website, illustrates the 'best time' amplitude modulation can be heard.

[138] https://pubmed.ncbi.nlm.nih.gov/23117539/

[139] https://www.who.int/data/gho/data/major-themes/health-and-well-being#:~:text=The%20WHO%20constitution%20states%3A%20%22Health,of%20mental%20disorders%20or%20disabilities

[140] https://apps.who.int/iris/bitstream/handle/10665/326486/9789289041737-eng.pdf?sequence=1&isAllowed=y

[141] Find out more about Noise from Wind Farms and Wind Turbines - MAS Environmental Ltd: https://www.masenv.co.uk/find-out-more-about-noise-from-wind-farms

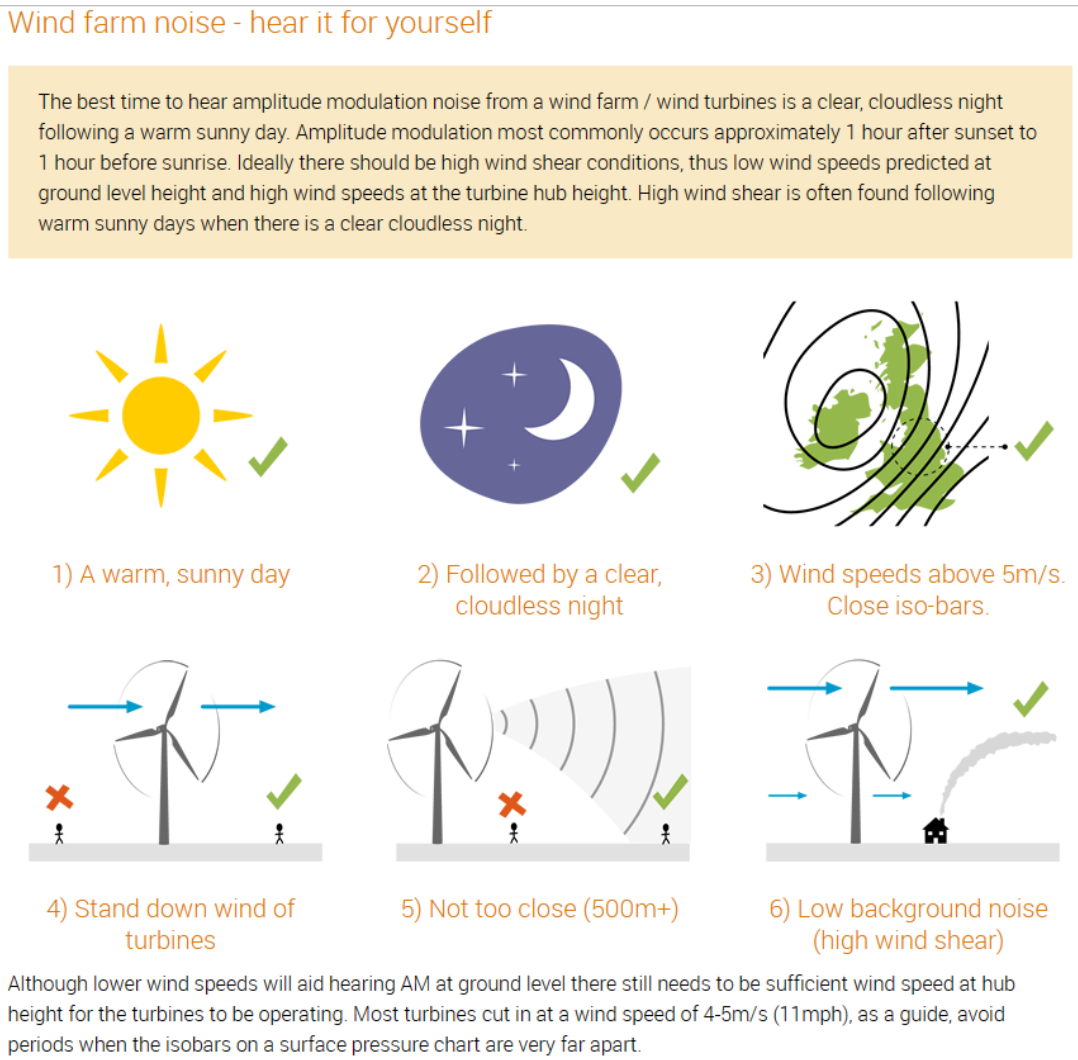


Figure 13.2.1 Wind farm noise during night and day time periods and different weather conditions

And as this comes into the fore more, cases are being taken to court against wind farm developers in relation to noise and the impacts of wind farms on local residents and their ability to get a good night sleep.[142]

Empirical evidence needs to be considered at the planning stage and it is incumbent on the competent authority to vindicate the property rights and the residential amenity of residents located within the zone of noise impact from the development. A full evaluation of the impact of the (actual vs proposed) turbines on residential amenity is necessary as there is a need for an integrated approach to the consideration of amenity impacts which evaluates noise, landscape impacts,

[142] https://www.gtlaw.com.au/knowledge/windjunction-granted-against-wind-farm-causing-noise-nuisance-neighbours#:~:text='Windjunction'%20granted%20against%20wind%20farm%20causing%20noise%20nuisance,them%20to%20take%20steps%20to%20reduce%20that%20noise

visual dominance, shadow flicker and rotational impact of the blade movement on residential amenity.

13.2.4 In-Combination Effects

It is also important that it is not just the number of noise sensitive receptors in the vicinity of the proposed development that should be considered, but also the **cumulative impact** of the numerous wind turbines in the area around the proposed Croagh wind farm.

We wish to draw the attention of the Board to two recent studies of the effects of wind turbine noise on people living near windfarms; as these studies have come to similar conclusions:

> *People who live near wind turbines complain of symptoms that include some combination of the following: difficulty sleeping, fatigue, depression, irritability, aggressiveness, cognitive dysfunction, chest pain/pressure, headaches, joint pain, skin irritations, nausea, dizziness, tinnitus, and stress. These symptoms have been attributed to the pressure (sound) waves that wind turbines generate in the form of noise and infrasound. However, wind turbines also generate electromagnetic waves in the form of poor power quality (dirty electricity) and ground current, and these can adversely affect those who are electrically hypersensitive. Indeed, the symptoms mentioned above are consistent with electrohypersensitivity. Sensitivity to both sound and electromagnetic waves differs among individuals and may explain why not everyone in the same home experiences similar effects.*[143]

Noise regulations can be a considerable barrier to Industrial Wind Turbines (IWT) developments, as they can have a substantial effect on wind turbine spacing and, therefore, the cost of wind-generated electricity. Industrial wind turbines are being placed in close proximity to family homes in order to have access to transmission infrastructure.

[143] *Adverse health effects of industrial wind turbines*, by Roy D. Jeffery, MD FCFP, et al, and in *Wind Turbines Make Waves: Why Some Residents Near Wind Turbines Become Ill* by Magda Havas and David Colling

13.3 Shadow Flicker

Shadow flicker is the effect of rotating turbine blades causing brightness levels to vary periodically at locations where they obstruct the Sun's rays. This phenomenon is due to the light that is escaping through the gaps between the blades of the turbine from the light that is shining behind them. Out of all the negative effects that come with the increase of wind energy and construction of more wind turbines all around the world, one of the most reported issues with the new technology is shadow flicker. Shadow flicker can become a nuisance to people who live in homes that are directly next to the wind turbine. In some instances, it has been described as having a similar effect as strobe lighting and distracting people from the task they are trying to complete as well as causing vehicle driver distraction.

The magnitude of shadow flicker effects varies both spatially and temporally, and depends on a number of environmental conditions coinciding at a particular point in time, which include:

- time of day and year;
- wind direction;
- height of wind turbine and blade length;
- position of the sun in the sky;
- weather conditions;
- proportion of daylight hours in which the turbines operate;
- type and frequency of use of the affected space; and
- distance and direction of the wind turbine from the receptor.

As the weather forecast if often unpredictable, there is no way of knowing exactly when the wind will be blowing. This means there is no way of preparing for the effects that might come for those who live in the shadows of the enormous turbines that greatly impose over houses in the area, even if setup distance is 500m or greater.

13.3.1 Negative Health Effects

There is evidence that prolonged exposure to shadow flicker can lead to headaches, migraines, nausea, eyestrain, dizziness, and other symptoms in sensitive individuals. Turbine-related shadow flicker has been cited in studies as a potential trigger for photosensitive epileptic seizures, although this is rare, and it should be noted that studies carried out are limited thus resulting in a reduced amount of information available.

13.3.2 Increased Stress and Psychological Effects

Living near wind turbines can result in chronic stress and anxiety. The constant noise, flickering and possible loss of property value can contribute to a sense of unease and frustration. A study found that individuals living near wind turbines experienced higher levels of anxiety and perceived loss of control over their living environment.

Health Impact: Chronic stress has been shown to negatively impact both mental and physical health, contributing to higher blood pressure, heart disease and an increased risk of depression (Schulz et al., 2010).

In addition to the annoyance and headaches that can come from the constant flickering being cast out by wind turbines, shadow flicker can result in other illnesses, including depression. The connection here is down to lack of sleep and/or (natural) daylight when the annoyance of the constant shadow flicker causes people to keep their curtains closed as the effects of the flicker become too much to bear. Another factor is 'bad view'. An epidemiology study conducted by the World Health Organization determined that a 'bad view out of window' increased the risk of depression by 40%

13.4 Atmospheric Contaminants Released from Rotating Wind Turbine Blades

As mentioned by Professor Evans in his observations on Laurclavagh Renewable Energy Development (An Bord Pleanála Case Ref. **PA07.319307**), there are reports of local pollution from the Bisphenols used in constructing rotor blades. Bisphenols, particularly Bisphenol A (BPA), have been associated with carcinogenic properties, and the European Chemicals Agency has classified Bisphenol A as a substance of very high concern (SVHC) that is 'very toxic to aquatic life'.

> '*Research reveals that the plastics used in the turbines' rotors are shed into the local environment and this problem is compounded where rainfall is high.'* (Evans)

Microplastic shedding from turbine blades, known as Leading Edge Erosion, is currently a great concern to manufacturers who are forced to repair the damage that occurs after only a couple of years. The particles eroded from blades include epoxy which is approx. 30% Bisphenol-A (BPA), a frequently banned endocrine disrupter and neurotoxin. Research has shown that as much as 137 pounds of epoxy microparticles can be shed per turbine per year. BPA is among the most toxic of man-made substances. In a study by Solberg et al. (2021) (*Pollution from wind turbine blades, Solberg et. al.;* attached as **Appendix II**), it was calculated

that the estimated emission of microplastics of 20 turbines amounted to more than 1.2 tonnes each year. The wind power industry has chosen to neglect and under-communicate this in much the same way as with health effects, and we invite the Board to read the various papers about this highly toxic potential impact.

Turbines spin at high speeds of up to 300km/h at the tip of the blade. This, then, is where the greatest shedding of material occurs, releasing BPA into the air, which then lands on soil and in nearby waterways. Given that turbines are placed in generally high wind locations and are generating strong wind themselves to the point that they can create drought conditions, these toxic microparticles can potentially travel long distances. And it only takes a fraction of a gram for this substance to poison a single litre of water:

> *'1 kilo of BPA is enough to pollute 10 billion litres of water. […] Since 2017, The WHO has advised that drinking water should have a maximum of 0.1 micrograms of BPA per litre'.* (Pollution from wind turbine blades, Solberg et. al.; PDF attached)

As the paper rightly states (and this is true for Ireland too): Food producers, dairy farms, beef farms and sheep farms market pure organic produce from mountains. Fish and seafood is a major industry. With large emissions of toxic compounds from the wind turbine industry, these industries will be exposed. Wind turbines can have major ecological, health and economic consequences and so the authors purport 'We do not know any wind turbine facilities having applied for or received emission permit.' (Solberg, 2021, p.15; in **Appendix II**).

There is little doubt that rotor blades pollute the atmosphere during the operation of a wind turbine, and are an environmental problem after the operation phase. However, there are no requirements for how this composite waste is to be handled and since this is not mentioned in the Applicant's application then there are no mitigation measures included.

It is our submission that the impacts of the proposed Croagh wind farm on human health must be thoroughly and comprehensively examined, without significantly lacunae. The Applicant has failed to consider this vital threat to, and impact on, human health which is a serious flaw in the planning application.

13.5 Interference With Telecommunications

The interaction between wind farm turbines and telecommunications is becoming a matter of increasing concern, as all forms of radio communication are now considered to be essential components of a country's infrastructure. This increasing dependency on mobile telecommunications was vividly highlighted during the recent storm in the end of January 2025 which not only interrupted

electricity supplies but led to widespread failure of mobile phone networks and the Internet.

As a result, many people, especially those living in rural areas, are becoming more concerned about any form of development which could degrade the quality of mobile phone communications or broadband. Wind turbines can block the microwave transmission, reflect these signals, or cause power levels to fluctuate, resulting in poor quality performance of the microwave radio network.

It is our submission that applicant did not appear to have carried out any assessment of the impact of the proposed wind farm on telecommunications, and we would see this as a significant gap in the overall assessment of the proposal; and it is our submission that An Bord Pleanála should insist that this problem must be investigated in much greater detail.

14. CONCLUDING OBSERVATIONS

In this submission, we trust that we have given An Bord Pleanála sufficient information, evidence and reasoning to ssuggest that the Board should refuse planning permission for the proposed wind farm.

The Board's previous decision to refuse permission was based on a detailed and comprehensive Inspector's report, the conclusions of which we found to be robust and thoroughly reasoned; and we hope that, when the Board reconsiders the remitted applications and appeals, the Board's inspector in these new cases will arrive at similar conclusions and recommendations which we hope will give the Board adequate reasons to refuse planning permission.

The members of Wind Aware Dromahair trust that An Bord Pleanála will again refuse to grant planning permission for the proposed wind farm for reasons based on the grounds of our appeal, on these further observations, and for any other reasons which the Board may consider appropriate for refusing permission.

Yours faithfully,

Jack O'Sullivan.

Jack O'Sullivan

Environmental Management Services

On behalf of Wind Aware Dromahair

Environmental Management Services
Comhairleoirí Comhshaoil
Environmental and Planning Consultants

Planning Application by Coillte CGA for an 8-Turbine Wind Farm, Electrical Substation, Grid Connection, Partial Demolition and Alteration of Agricultural Buildings, Upgrading of Existing Tracks and Roads, Construction of New Site Access Roads, and Associated Works in the townlands of Bargowla, Boleymaguire, Braudphark, Derreens, Derrybofin, Derrycullinan, Derrycullinan Beg, Drummanacappul, Garvagh, Garvagh Glebe, Glassalt, Lisfuiltaghan, Seltan, Sheena and Tinnybeg, County Leitrim; and Appeals to An Bord Pleanála against the Decision by Leitrim County Council to Grant Planning Permission; the Board's Decision to Refuse Permission (case ref. PL12.310789-21), and High Court Order to Remit the Application to the Board for Reconsideration (case ref. H.JR.2023.0001454)

Leitrim County Council Planning Reference 20 / 120

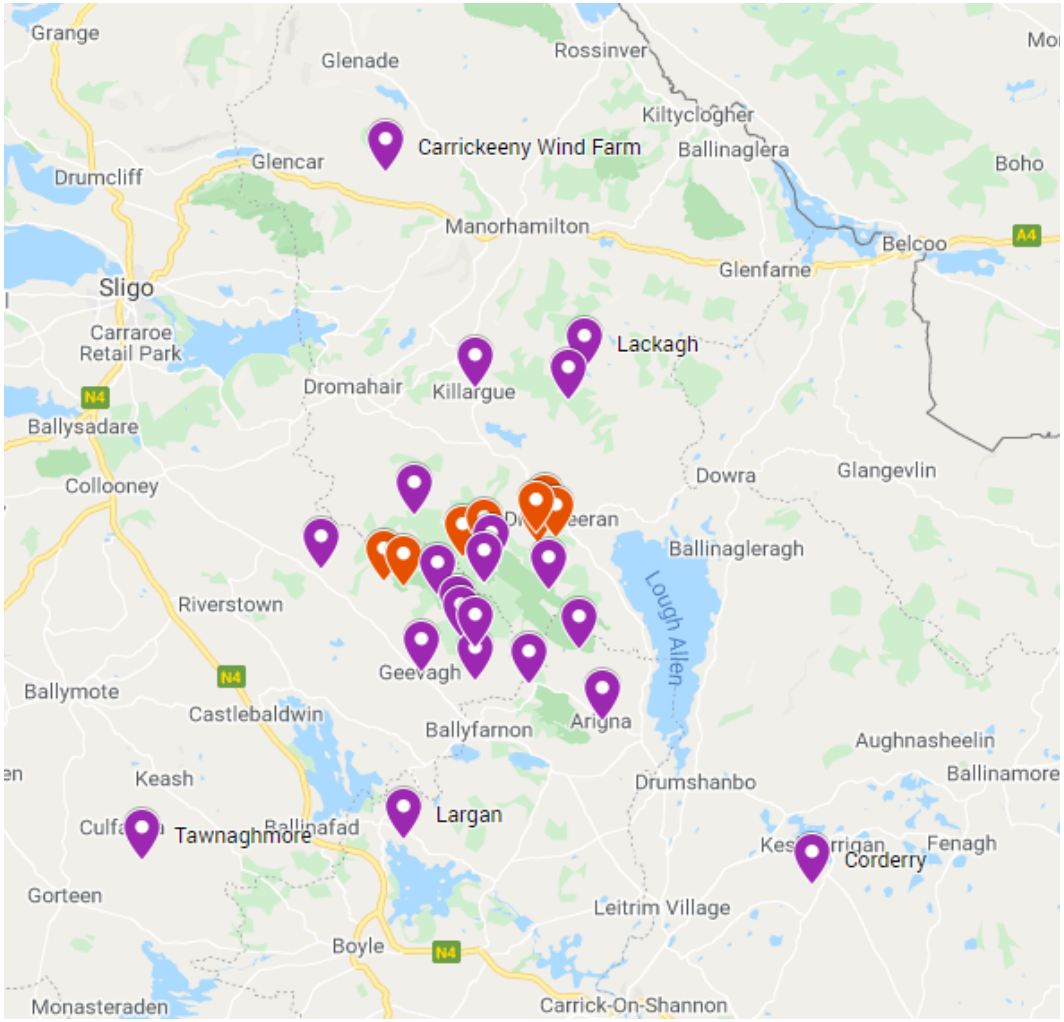
An Bord Pleanála Reactivated Case Reference No. 321867-25

OBSERVATIONS ON BEHALF OF WIND AWARE DROMAHAIR

APPENDIX I

MAPS AND SATELLITE IMAGES

11 March 2025



Derrybofin
Derrycullinan Beg
Derreens
Braudphark
Boleymaguire
Bargowla
Carrownyclowan
Carrowmore
Derrycullinan

Corderry
Tawnaghmore
Lackagh
Largan
Tullynamoyle
Carrickeeny Wind Farm
Derrysallagh
Killarga
Arigna
Seltannasaggart
Seltan
Carrane Hill
Geevagh
Tullynahaw
Garvagh Glebe
Boleymaguire
Gubbarudda
Tullynure
Straduff
Glen
Ballynashee

Figure 1: Existing Wind Farms:

Townlands in which wind turbines would be located, if planning permission were to be granted for the proposed Croagh Wind Farm:

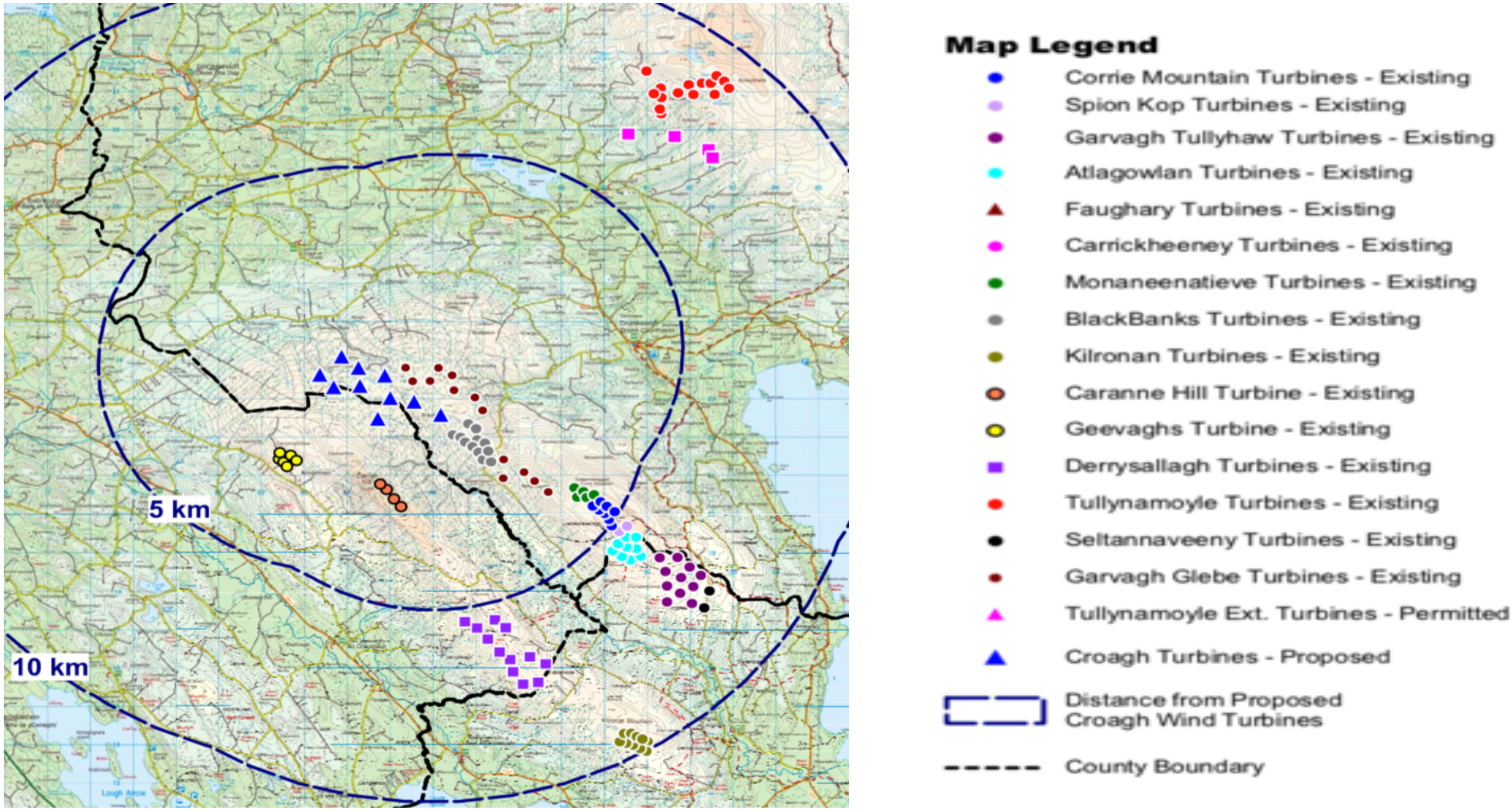


Figure 2: Wind farms within 10km of the application site for the proposed Croagh Wind farm, showing the very high density of wind farms close to the Leitrim-Sligo county boundary (from Figure 2.1 in the applicant's EIAR).

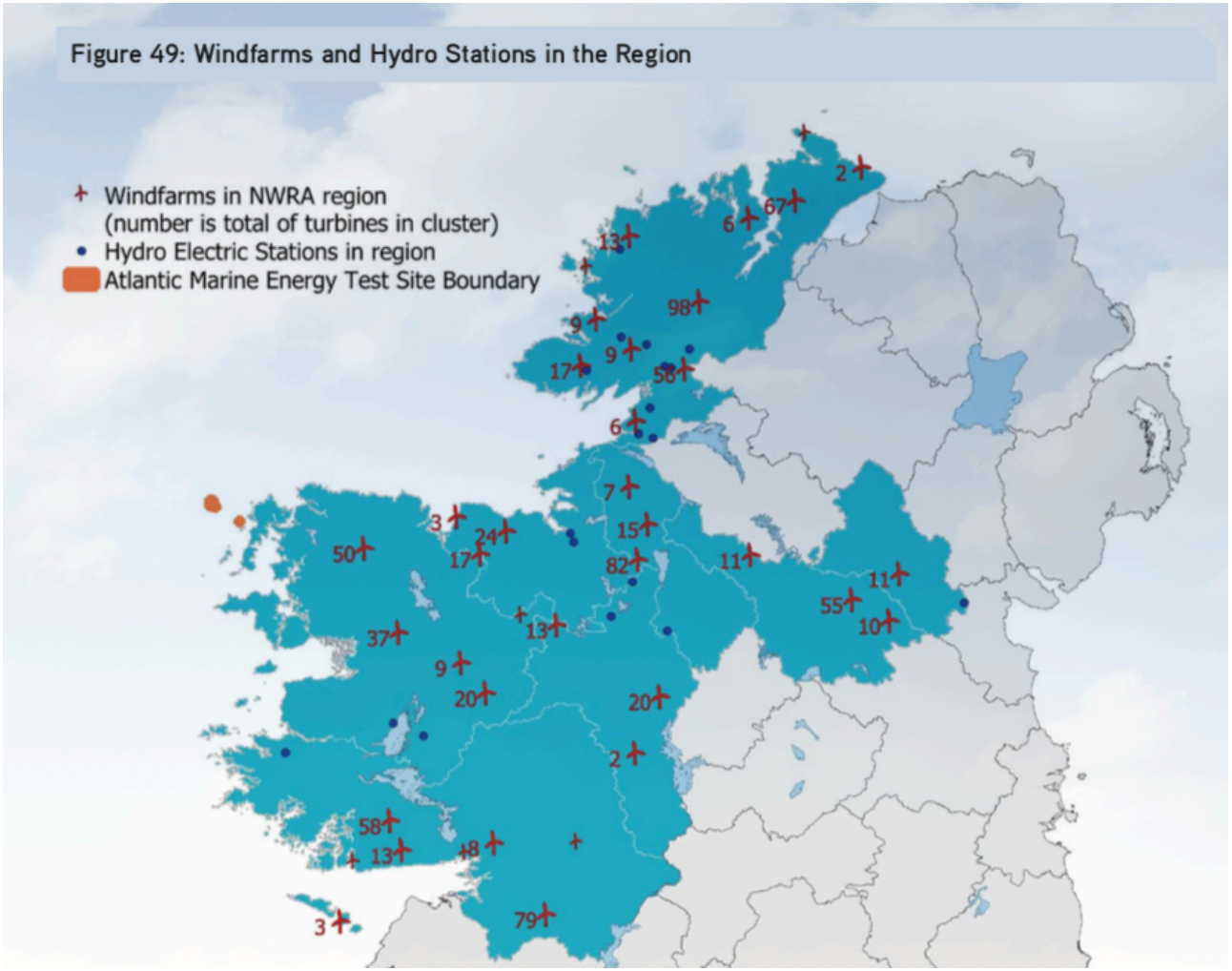


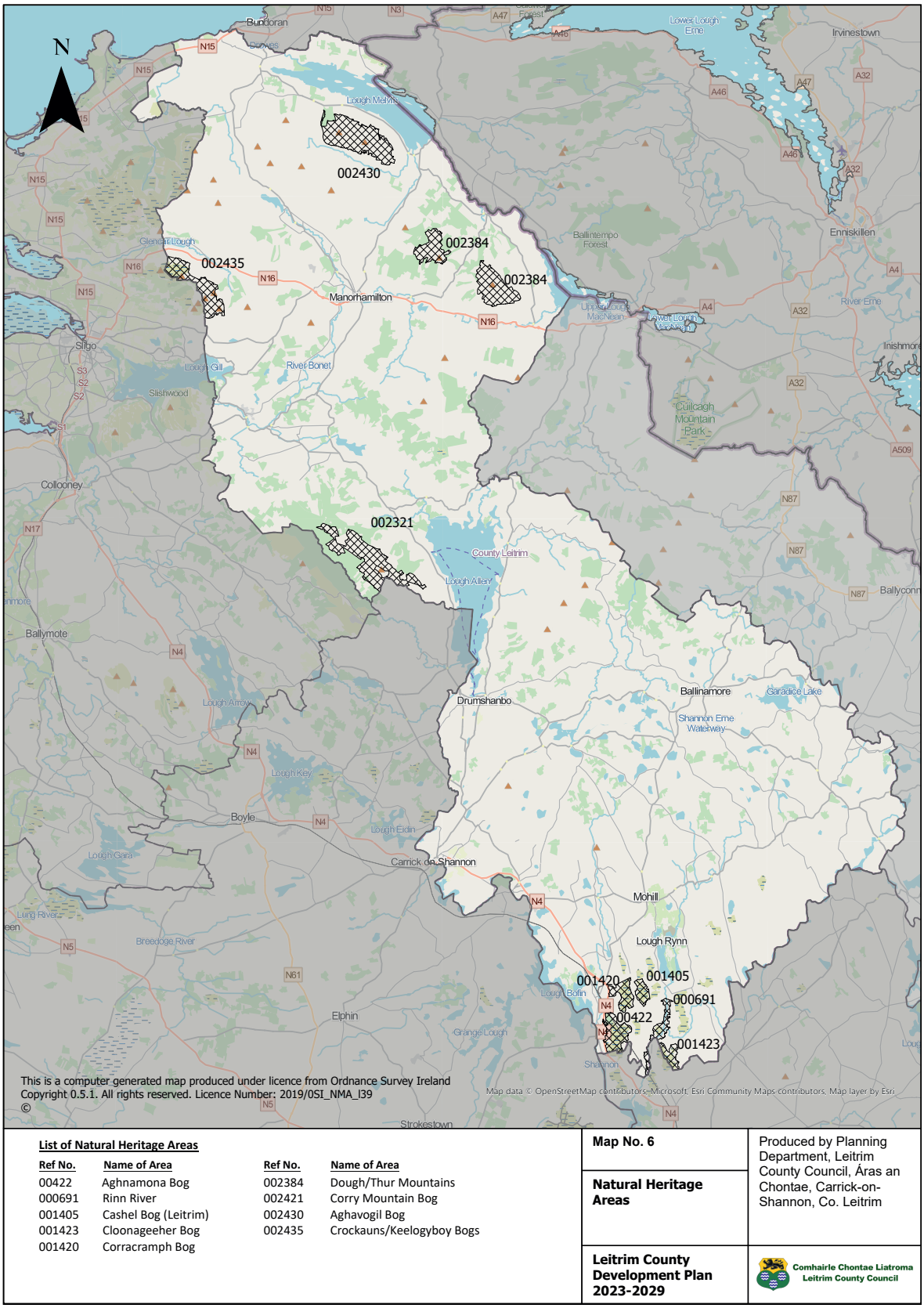
Figure 3: **Figure 49 on page 163 of the Northern & Western Region Spatial & Economic Strategy, 2020-2032; showing a total of 835 wind turbines in the NW Region.**

Table 6-1: Current and planned onshore wind developments, date and capacity.

Name	Status	Date of Connection	Maximum Export Capacity (MW)
Tullynamoyle Wind Farm (2)	Operational	17/11/2017	10.225
Tullynamoyle Wind Farm (3)	Operational	18/09/2017	11.98
Tullynamoyle Wind Farm (3)	Operational	18/09/2017	1.598
Faughary Wind Farm	Operational	12/12/2014	6
Carrickeeny Wind Farm	Operational	28/02/2014	7.65
Tullynamoyle Wind Farm (1)	Operational	17/11/2011	9
Moneenatieve Wind Farm (2)	Operational	15/10/2011	0.29
Garvagh-Glebe Wind Farm (1a)	Operational	01/06/2010	26
Moneenatieve Wind Farm (1)	Operational	23/09/2005	3.96
Black Banks Wind Farm (2)	Operational	08/09/2005	6.8
Black Banks Wind Farm (1)	Operational	01/09/2001	3.4
Spion Kop Wind Farm	Operational	01/12/1997	1.2
Corrie Mt Wind Farm	Operational	01/03/1997	4.8
Tullynamoyle Wind Farm (5)	Planning Granted 28/05/2020.	–	16 (Projected)
Greaghnaslieve	Granted by ABP 27/11/2020-		2 Projected
Croagh Wind Farm	On appeal to ABP (Sept. 2021)		38.4 (Projected)
Tullynamoyle Wind Farm (5) Extension	Planning Application under consideration by LCC (Sept.2021)		20 (Projected)

Appendix I, Figure 4: Current and planned onshore wind farms, County Leitrim (from Leitrim Renewable Energy Strategy, March 2023)

Map 6: Natural Heritage Areas



List of Natural Heritage Areas

Ref No.	Name of Area	Ref No.	Name of Area
00422	Aghnamona Bog	002384	Dough/Thur Mountains
000691	Rinn River	002421	Corry Mountain Bog
001405	Cashel Bog (Leitrim)	002430	Aghavogil Bog
001423	Cloonageeher Bog	002435	Crockauns/Keelogyboy Bogs
001420	Corracramph Bog		

Map No. 6

Natural Heritage Areas

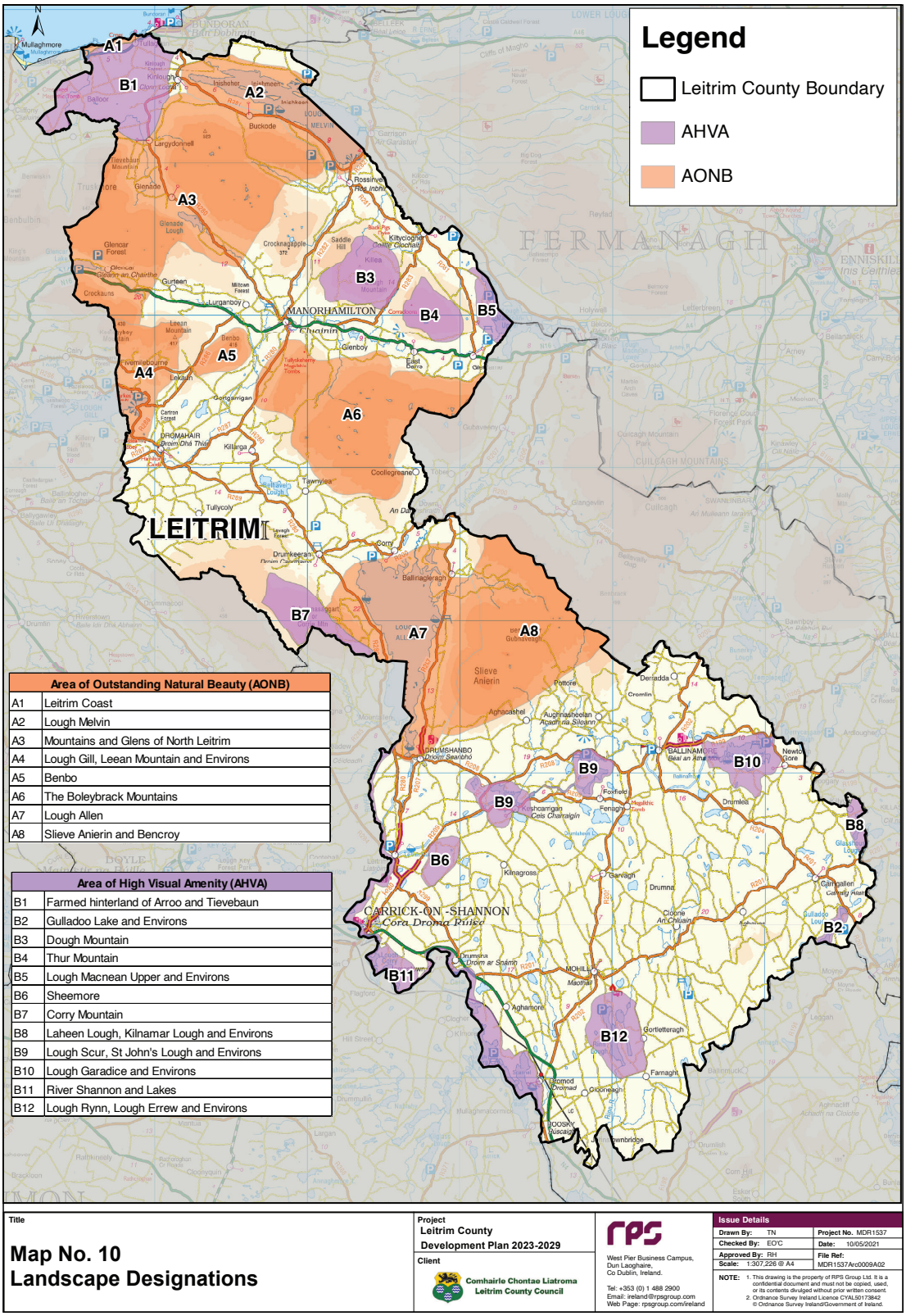
Produced by Planning Department, Leitrim County Council, Áras an Chontae, Carrick-on-Shannon, Co. Leitrim

Leitrim County Development Plan 2023-2029

Comhairle Chontae Liatroma
Leitrim County Council

Appendix I, Figure 5: Natural Heritage Areas in County Leitrim, showing that the proposed Croagh wind farm site is located in the Corry Mountain area NHA (Map No 6, County Development Plan, Book 3).

Map 10: Landscape Designations



Area of Outstanding Natural Beauty (AONB)	
A1	Leitrim Coast
A2	Lough Melvin
A3	Mountains and Glens of North Leitrim
A4	Lough Gill, Leean Mountain and Environs
A5	Benbo
A6	The Boleybrack Mountains
A7	Lough Allen
A8	Slieve Anierin and Bencroy

Area of High Visual Amenity (AHVA)	
B1	Farmed hinterland of Arroo and Tievebaun
B2	Gulladoo Lake and Environs
B3	Dough Mountain
B4	Thur Mountain
B5	Lough Macnean Upper and Environs
B6	Sheemore
B7	Corry Mountain
B8	Laheen Lough, Kilnamar Lough and Environs
B9	Lough Scur, St John's Lough and Environs
B10	Lough Garadice and Environs
B11	River Shannon and Lakes
B12	Lough Rynn, Lough Errew and Environs

Title: **Map No. 10 Landscape Designations**

Project: Leitrim County Development Plan 2023-2029

Client: Comhairle Chontae Liatroma / Leitrim County Council

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Issue Details: Drawn By: TN; Checked By: EO'C; Approved By: RH; Scale: 1:307,226 @ A4; Project No. MDR1537; Date: 10/05/2021; File Ref: MDR1537Arc0009A02

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Appendix I, Figure 6: Areas of High Visual Amenity in County Leitrim, showing that the proposed Croagh Wind Farm site is located in area B7, Corry Mountain (Map No 10, Leitrim County Development Plan, Book 3).

Appendix II

Pollution from wind turbine blades

5 th. Edition - English

08.07.2021



Asbjørn Solberg, Bård-Einar Rimereit and Jan Erik Weinbach

"THE TURBINE GROUP" JULY 2021

Preface

We have put together a report on an under-communicated topic; emissions of microplastics and possible toxic compounds from wind turbines.

Our estimates for emissions are based on the report "*Rain Erosion Maps for Wind Turbines Based on Geographical Locations: A Case Study in Ireland and Britain*" University of Strathclyde, 2021.[1]

It is difficult to find good and impartial sources for the problem of emissions from wind turbine blades. Reports that have been published and research that has been done on the topic are most often carried out by authors who have their most important source of income from wind power, such as reports from www.epoksy-europe.eu. The report from Strathclyde is one of the few reports dealing with the volume of emissions from the turbine blades. Just days after our first edition was released the University of Strathclyde announced "*Aker Offshore Wind, Aker Horizons and Strathclyde to collaborate on accelerating recycling glass fibre products*".[2]

The University of Strathclyde is one of three universities in Glasgow, Scotland. The university has its roots in Anderson's Institution which was established in 1796, and gained status as a university in 1964. It was ranked 38th out of 126 British universities on the Complete University Guide's list for 2016 and number 33 out of 119 British universities at The Guardians 2016. -list. (Wikipedia)

We have estimated emissions from the leading edge of wind turbine blades by calculating the mass loss from Norwegian wind turbines based on the report from the University of Strathclyde.

Already in 2013, rotor blades from wind turbines accounted for 27% of Europe's consumption of epoxy.[3] Depending on production method the epoxy in rotor blades contains as much as approx. 33% Bisphenol A.[4] Nevertheless, there is remarkably little available information on microplastic emissions from turbine blades. However, there are many reports from the industry that focus on wear and maintenance. This indirectly confirm the issues we describe.

Bisphenol A is on the «Norwegian priority list of dangerous substances». These are chemicals that are considered to pose a serious threat to health and the environment are placed on the Norwegian priority list. The list serves as an important tool for which substances the authorities should work specifically with, and it gives an important signal to the business community that these are substances where it is important to work for reduction in use or emissions.[5]

In the 3rd edition, some references were replaced so that now the reference goes directly to main sources where they previously went via our report. For example footnotes 2 and 3. In the 4th edition, some typing errors were corrected and an updated calculation of erosion for the Norwegian coast were made.

This edition is in English and we have added facts and information given to us (29. April and 4. May) from the researchers of the Strathclyde rapport. We understand the facts and information to support our estimates and calculations.

We would also like to thank and credit Veronica Metcalfe for solid help with this English edition.

Stavanger, Sogndal and Trondheim and 08.07.21

[1] https://link.springer.com/article/10.1007%2Fs40735-021-00472-0
[2] https://www.strath.ac.uk/whystrathclyde/news/akeroffshorewindakerhorizonsandstrathclydetocollaborateonrecyclingglassfibreproducts/
[3] https://epoxy-europe.eu/wp-content/uploads/2018/11/Epoxy_Socioeconomic_Study_Main_Findings_August-2017.pdf
[4] https://www.epoxy-europe.eu/wp-content/uploads/2015/07/epoxy_erc_bpa_whitepapers_wind-energy-2.pdf
[5] https://www.miljodirektoratet.no/chemicallist/61?listcasnr=80-05-7

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Summary

There are examples from both the UK and Denmark that after 5 years you either have to make very large critical, costly repairs such as at London Array Park or demolition / replacement as at Anholt in Denmark. Both locations with wing diameter of 120 meters.

Experiments carried out at the University of Strathclyde show that a rainfall with pure particle-free fresh water of 50 mm pr. month results in a mass loss of 0.037% pr. month and a rainfall of 500 mm pr. month gives a mass loss of 0.199% pr. month. The wear with seawater (3.5% salinity) is 40% greater[6].

> A turbine blade is simply explained as fiberglass mats, epoxy resin and hardener.
>
> Epoxy, in contrast to polyester, contains 33% Bisphenol A which is considered very harmful to health.
>
> The blades of a 4.2 MW turbine for areas with harsh weather have a diameter of 130-140 m and the total weight is just under 60 tonnes, with longer blades they weigh well over 60 tonnes each.

We estimate a total weight of 60 tonnes per. turbine.

We estimate the total of exposed leading edge (LE) weight to be 700 kg.

Many places along the Norwegian coast have annual rainfall of approx. 2,500 millimetres.

This gives us the formula for wear and tear: $f(x) = 0.979\ \% * (\frac{diameter}{100})^{11,4}$

And an estimated annual emission of microplastics of approx. 62 kg per year per turbine.

And 20 turbines more than 1.2 tonnes each year and 31 tonnes over 25 years.

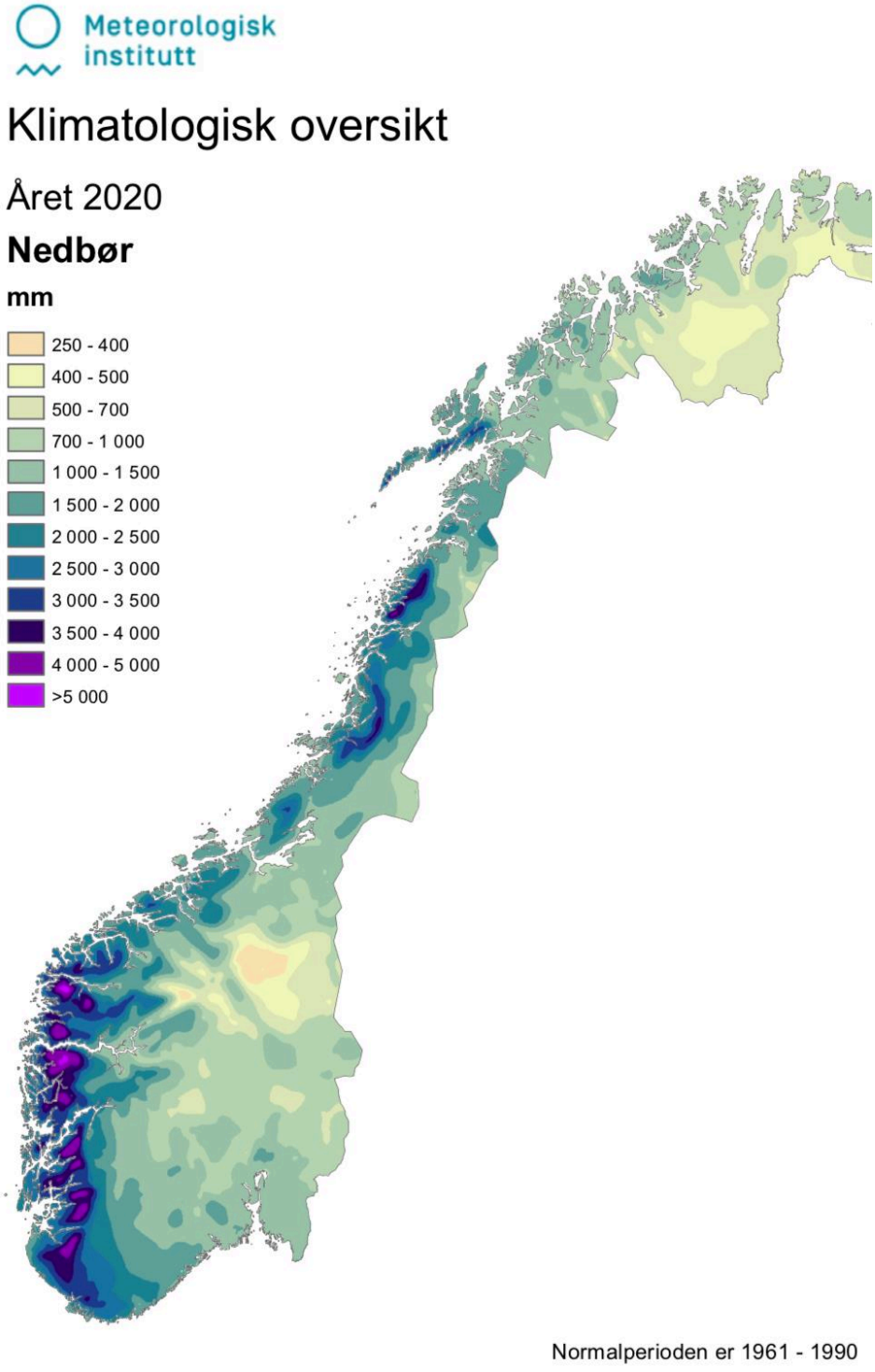
In Norway there are close to 400 turbines with a wing diameter of 130 meters or more. Estimated total emissions from these 400 turbines are 25 tonnes a year.

Over the course of 25 years, this amounts to an estimated 620 tonnes!

We point out that we have calculated the annual precipitation as rain. If the precipitation consists of a lot of snow, ice and hail, with salt or sand, mass loss from Leading Edge (LE) will increase beyond this.

[6] https://link.springer.com/article/10.1007%2Fs40735-021-00472-0

Climatological overview (NORWAY) rain 2020 [7]



[7] https://www.met.no/publikasjoner/met-info

Through NORWEA, the wind industry states a total annual emission of max 150 grams pr. turbine[8].

That is a maximum of 60 kg for 400 turbines.

Our estimates show that emissions can be 41 000 % greater than the figures provided by NORWEA.

It is important to note that the wear on rotor blades is exponential.

Erosion Rate is exponential to Impact Speed or Impact Energy (see figure 4).

New and larger turbines will have far greater mass losses.

The average temperature in many places along the coast is below 4 degrees from November to April, which gives at least 5 months with the risk of icing and hail, in other words periods of higher average mechanical stress and emissions than those found in Scotland.

25 tonnes of annual emissions in the form of micro- and nanoplastics are thus sprinkled over outfields, pastures, soils, water sources and eventually fjords and sea areas.

How much of this will be Bisphenol A is uncertain, **but 1 kilo of bisphenol A is enough to pollute 10 billion litres of water. That's 10 000 000 000 litres.**

Since 2017, the WHO has advised that drinking water should have a maximum of 0.1 micrograms of BPA pr. litre. This is 0.000 000 1 grams per litre of water[9].

The environmental protection authorities in Norway have statistics on emissions of free Bisphenol A. These statistics are given in grams with emissions. Emissions from the wind industry are not included, and no decision has been made as to whether emissions from the wind industry can be broken down into harmful substances.

[8] https://norwea.no/norwea-mener/2021/3/26/faktaark-vindkraft-plast-og-bisfenol-a
[9] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020L2184&from=EN

Introduction

Some reports say the coating is polyurethane while "*On the Material, Characterization of wind turbine-B_2017*" says that the cover layer on the Leading edge is also a specially developed epoxy "*developed for Leading Edge Protection*" (LEP)[10]. The same report also explains the mechanisms surrounding damage caused by raindrops, defined as the Water Hammer pressure effect.

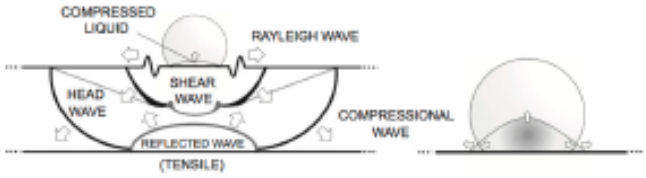


Figure 1 source: On the Material, Characterisation of wind turbine-B_2017

The fact that all objects that move quickly through air, hail and rain wear has been a known problem in the aviation industry since 1940, also in other industries there is a well-known problem with wear caused by flow.

The wind power industry has chosen to neglect and under communicate this in much the same way as the tobacco industry dealt with health effects.

That there is a wear problem today and that there will be a significantly bigger problem with larger turbines in the future, is confirmed by "*On the Material, Characterization of wind turbine-B_2017*" [11], which says: *Rain erosion protection coatings have been proposed, tested and validated with particular industrial solutions, but the proposed solutions are still not as reliable as the wind energy industry requires. Rain erosion has thus become a scientific challenge for the wind industry since there are no well-defined methodologies to design coatings against rain erosion and it is unclear how to modify their properties depending on the location, weather conditions, etc*.

What we know about the forces and mechanical stresses on wind turbines is that the stresses increase exponentially as the turbines become larger. Offshore wind turbines will wear 40-50% more due to salinity. Offshore wind is more unprofitable than land-based, and it thus requires much larger turbines, which in turn will result in much larger emissions.

Longer rotor blades, give increased speed in the blade tip. The industry is well aware of increased mass loss and thus increased emissions when they increase blade speed, but they believe increased blade wear can be

[10] That there is no bisphenol in the coating is undocumented information in the form of claims from the wind industry, they do not say anything about the coating. But also polyurethane has its environmental challenges with increased cancer risk and allergenic properties.
[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5666952/

justified by requiring less investment, e.g. that it requires lower investment costs, i.e. smaller and cheaper gearboxes.

The purpose of the report from Strathclyde is to predict the need for maintenance, but it also quantifies the mass loss in rotor blades. The report from Strathclyde focuses on a test of mass loss on a material sample. The selected measurement for erosion is mass loss as a percentage of the original sample. The ideal loss data would be the mass loss connected with area. Then the mass loss calculations would be easier to predict. But no body publishes data like this, therefore the Strathclyde report is the best available source.

The mass of the test material was measured before the experiment and after each exposure time. This will result in a direct numerical relationship between average monthly rainfall and erosion as a mass loss.

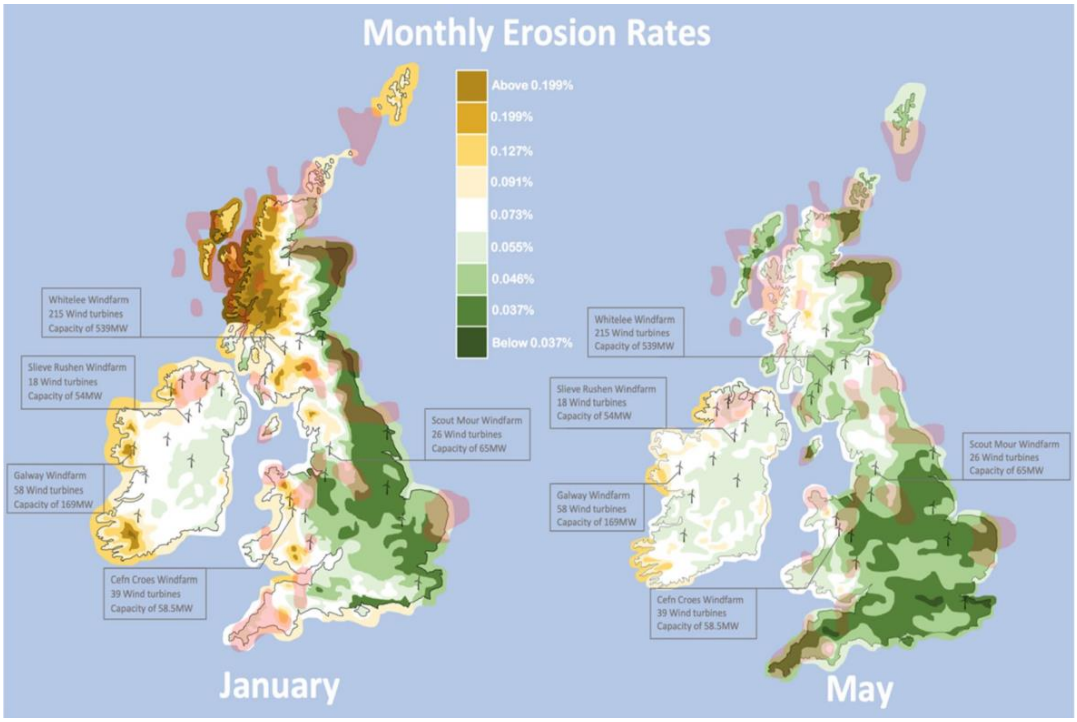


Figure 1. The monthly erosion rates in January and May with overlays of major wind turbine farms and areas of frequent hail. Source: Journal of Bio- and Tribo-Corrosion · March 2021)

The pulp loss mainly consists of two-component epoxy. A turbine wing is largely made of fiberglass reinforced epoxy where epoxy makes up approx. 40% of the pulp and fiberglass make up 60%. In addition, some balsa wood, divinycell (a kind of hard foam) and some other materials are used to create the profile for the wing construction.

Epoxy contains 33% bisphenol A. This amounts to approx. 13 - 15% of the total weight of a rotor blade. In other words, there is a lot of microplastic, **and a large part of this is bisphenol A.**

In this document, we do not consider the state of the emissions of microplastics, or the distribution of inert and harmful substances in the form of free chemicals. To differentiate this is an isolated large scientific work that should be carried out as it is known that all substances are broken down to a greater or lesser degree.

Pollution authorities throughout Europe should jointly launch a major impact assessment. Since we are talking about large emissions from turbine plants, one should also look at how epoxy is broken down in the animals' digestive system with mechanical processing, heat and acid.

> "*Bisphenols are not covalently bound to the polymeric structure, from which with time, or due to physical and / or chemical factors such as heat and acidity, can be gradually released into the external environment, contaminating water, soil and sediments, and later the rest of the agro-food chain*."[12]

The special thing about emissions from land-based wind turbines in Norway is that they are located higher than water sources and biotopes, and that they will be able to spread the problem over relatively large areas such as outfields and pastures. **In addition, many of these discharges could end up in drinking water sources.**

Loss of bisphenol will apply to those areas of the blade that are not covered by surface treatment, i.e damaged areas, and whether epoxy is used in the surface treatment. Where polyurethane cover layers are used, bisphenol will probably not be released until the cover layer has worn away[13], but the mass losses are microplastic and it will enter the food chain. Polyurethane contains isocyanates which are known to be both carcinogenic and allergenic.

The bisphenol A (BPA) content of the emissions will increase throughout the period of use and after use, as the materials are uncovered and exposed. In particular, current practice of burying rotor blades in landfills will result in high emissions over a long period of time.

[12] Review article, Environmental Research 151 (2016) Monica Giulivo a,n, Miren Lopez de Alda b,n, Ettore Capri a, Damià Barceló b,c

[13] That there is no bisphenol in the coating is undocumented information in the form of claims from the wind industry, they do not say anything about the coating but also polyurethane has its environmental challenges with increased cancer risk and allergenic properties.

The experiments performed at the University of Strathclyde in short

The Strathclyde report only looks at rain (no ice, snow or hail), but describes that previous studies show that hail causes both surface damage and micro delamination that results in accelerated and large mass losses due to rain.

Weather data are taken from Ireland and Scotland. Data are collected in January and May, which are the wettest and driest months, respectively.

The test specimens are exposed to a similar load as the average weather for a 20-year period from the weather data.

The speed in the test was 60 m/s, which corresponds to the speed at the end of a 50-meter wing. In other words, the test is relevant for large parts of the turbine blades. The rotor speed increases exponentially beyond the blade wing. For example. turbines with a diameter of 140 meters on the wings have a speed of approx. 80-100 m/s at the tip. The inner part of a turbine blade will wear considerably less than the tip.

The experiment was also repeated with salt water with a view to offshore wind turbines. Salinity was 3.5%, which is equivalent to seawater in the UK and Ireland. The mass loss then increases by 40-50%.

Mass loss also results in increased turbulence and drag, which results in lost efficiency. To counteract lost production, the blade angle is changed, which exposes a larger surface to mechanical wear, which in turn results in increased mass loss.

The University of Strathclyde writes that they have used the same material as on wind turbine blades, but which is not further described, e.g. about which surface treatment has been used in the experiments. It can mean that the figures only apply to open exposed epoxy without surface treatment, even though the text indicates that complete sheets of coating have been used in the experiments. The authors have been contacted but we have not been contacted at the time of writing.

The report says the following about the wear:

> "*The degradation of the sample should erode in three distinct stages. The first is the initiation period; where the sample is at its smoothest and difficult to penetrate, this is when the turbine blades are brand new and operating at optimal efficiency.*
>
> *Secondly is steady state erosion; where the sample has been impacted by a critical number of droplets to affect the surface roughness of the sample enough to instigate more considerable erosion which continues at a constant rate. It is during this stage that the turbine starts to decline in efficiency.*
>
> *Lastly the third stage is the final erosion region where the erosion rate decreases, however, this is when the turbine blade is at its most vulnerable and the erosion on the blades can begin to become structural weak points*."

From other reports

Another report "*Sustainable_End-of-Life_Management_of_Wind_Turbine*"[14] acknowledges the problem: "*For erosion protection, a load reducing strategy can be realized as so-called erosion safe control, i.e., reduction of tip speed during heavy rain."* (page 4).

Report Accelerated rain erosion of wind turbine from DTU[15]: "*The liquid coating materials contain the same basic compositional components: resin, solvents, pigments and additives*." (page 9).

We have looked at a number of reports and all conclude that erosion due to rain is a major problem. The reports focus mainly on operation and maintenance, not on emissions and environmental damage.

With the increasing size of the turbines, which gives high speed to the blades, it appears that edge tape and similar do not meet goals. Modern and large wind turbines therefore use a layer of polyurethane-based paint/varnish on top of the epoxy gelcoat or epoxy coating as protection.

In addition to Leading Edge Erotion (LEE), several research sources mention pitting and delamination as known problems.

Other comments

There are examples from both the UK and Denmark that after 5 years you either have to make very large critical, costly repairs such as at London Array Park or demolition/replacement and Anholt in Denmark. Both locations with a blade diameter of 120 meters.

The average temperature in many places on the Norwegian coast is below 4 degrees from November to April. This means minimum 5 months with danger of icing and hail. In parts (like Troms and Finnmark) there are more extreme weather conditions. Norway will have higher average mechanical load and emissions than those found in Denmark, England and Scotland.

Leading Edge Erosion (LEE) causes an annual production loss of somewhere between 56 and 75 million euros. A large industry has emerged around the maintenance of rotor blades. That this industry can live off the alleged emissions/mass loss of 0-50 grams (max 150 grams per turbine) is a logical shortcoming which at best appears naive. But our environmental authorities accept this as the truth. For Norway (with 1164 turbines) the total annual maintenance would be max 174 kg.

The maintenance costs for a 500 MW offshore wind turbine plant will be between 2 and 8 million pounds per. year. A quick calculation indicates that it can be up to £80,000 per turbine.

[14] https://pubmed.ncbi.nlm.nih.gov/33673684/
[15] https://backend.orbit.dtu.dk/ws/portalfiles/portal/116954840/Shizhong_Zhang_978_87_93054_49_3_fil_fra_trykkeri.pdf

The same source tells that repairs and production losses cause lifetime costs of 1.3 million pounds[16].

This confirms that the industry calculates large emissions from wear from rotor blades.

Several reports show that the maximum speed for today's large turbines is just below 100 m/s, while larger turbines will have speeds up to 110 m/s. The speed cannot increase indefinitely as the flow speed becomes unfavourably high and the efficiency will decrease.

The choice of turbine type in many places confirms that large loads are expected on both the rotor blades and the construction itself.

Wear and emissions can be divided into three phases:

Phase 1 - wear on polyurethane coatings, the Leading-edge protection (LEP), which is not as environmentally critical but it releases microplastics that contain isocyanates and other substances that are carcinogenic and allergenic. Some turbines have epoxy as (LEP) instead of polyurethane.

Phase 2 - wear on Gelcoat- which is an epoxy. This gives emissions but not major mechanical weakening on the turbine blade.

Phase 3 - wear into the glass epoxy layer under the gelcoat. This results in increasing emissions and structural problems on the turbine blades.

Results and conclusion

Disclaimer: The University of Strathclyde report says too little about test criteria and our estimates must therefore be regarded as qualified estimates. Nevertheless, they provide grounds for assuming that there may be a significant problem that clearly needs to be highlighted and taken very seriously. In our estimates we use the results from the University of Strathclyde report.

We have in this report carried out estimates for climate along the Norwegian coast. We have calculated mass loss on the leading edge (LE) from 50 meters and beyond on the blade. The estimates show that there are almost certainly large and strongly under communicated emissions from the wind turbine industry. Increased blade diameter gives increased tip speed. With speeds more than 300 km/h = 83 m/s, the encounter with raindrops, hail and ice particles will increase the erosion of the blades.

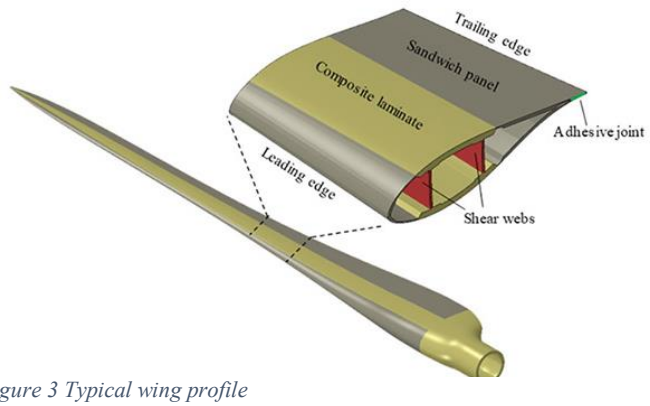


Figure 3 Typical wing profile

Source: https://www.dtu.dk/english/news/Nyhed?id={CDC59567-A8A1-4ACE-866A-7FD8D559D5FF}

[16] https://www.sciencedirect.com/science/article/pii/S1364032119305908

In our estimate, we have used a Vestas 136 turbine, with a diameter of 136 meters and a total blade weight of approx. 60 tons. We have used 700 kg as exposed Leading edge per turbine. That is little more than 1% of the total blade weight.

After we published our first edition of this report Kieran Pugh, PhD University of Strathclyde, wrote this in an email dialogue with us "*The affected area which the experiments were conducted, which was at the tip on the leading edge, will weigh 50kg max. This is due to the tip only traveling at the speed tested. This is the upper estimate of the combined three blades*".

In our estimate, we have used 12 kg as weight on LE on the last meter of the blade (the tip). It gives 36 kg for all three blades. It is approx. 40% less than the weight Kieran Pugh states as maximum weight.

Kieran Pugh also states that based on 50 kg the erosion is 0.5735 kg per turbine per year. He specified "*This is also a worst-case scenario involving assumptions like the turbine is operating at maximum operational speed at all times during rain, this means this estimate of mass loss is at the most extreme case and is unlikely to increase.".*

With our formula we get an annual erosion of 0.220 kg with 36 kg LE and 60 m/s. It seems that our estimates are very cautious compared to what Kieran Pugh himself has as erosion at 60 m/s.

In the beginning (phase 1) our estimated emission figures will be set too high, but when there is visible wear and tear, our figures will probably be low (see phases 1, 2 and 3).

When the wear has reached a certain point, it will begin to break down into larger particles and the emissions will accelerate.

We have reviewed a number of reports on maintenance and it is clear that a turbine blade cannot survive 15-20 years in exposed environments without significant maintenance.

Previously, suppliers of maintenance services showed and discussed the jobs together with figures and documentation. In 2021, almost all information will be kept hidden and it is very difficult to find available figures and data. This can be regarded as a confirmation that the emissions are high.

It is worth noting that weight, volume and consequently the emission figures will increase in the 3rd power as a result of increasing size of turbines and salinity in the air will increase this problem by another 40%.

The experiments at Strathclyde show that a rainfall with pure particle-free fresh water of 50 mm per month. results in a mass loss of 0.037% per mnd. and that a rainfall of 500 mm per. mnd. gives a mass loss of 0.199% per. mnd. The wear with seawater (3.5% salinity) is 40% greater.

Many places on the Norwegian coast have annual rainfall of approx. 2,500 millimeters.

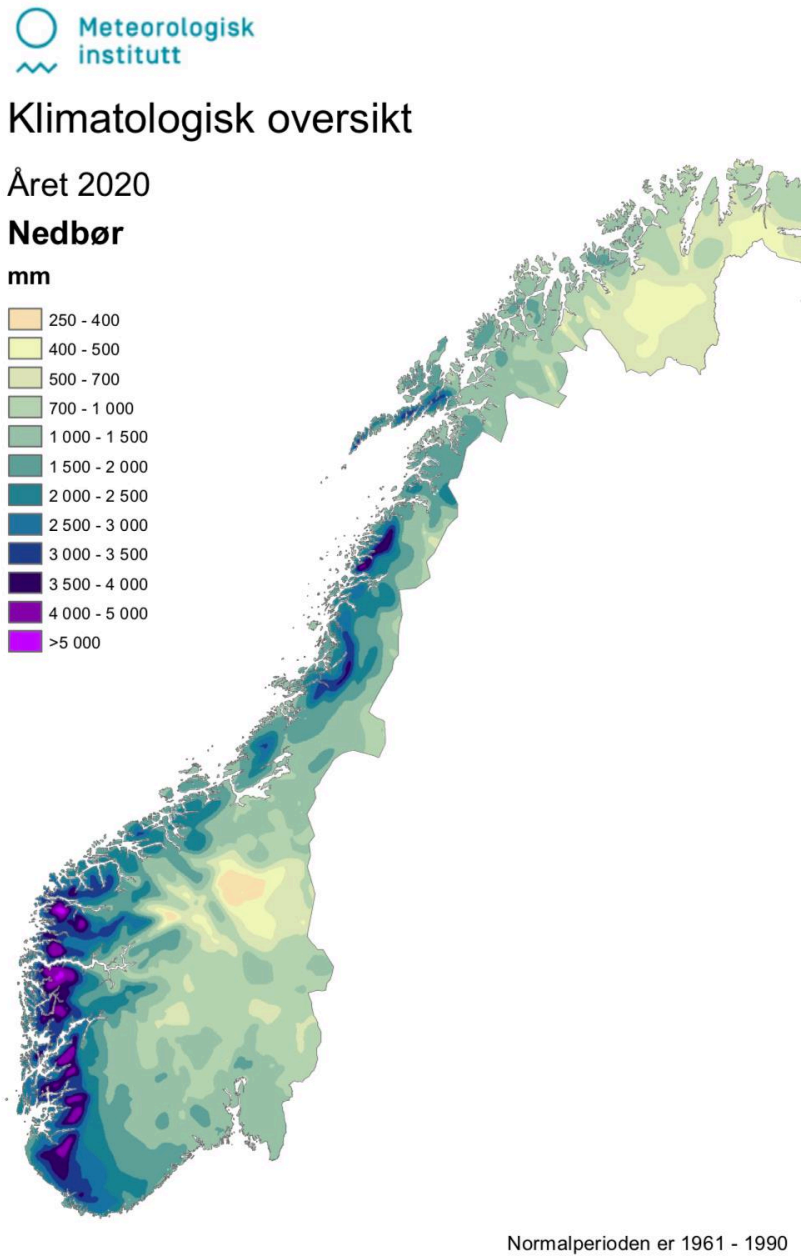
This gives us this formula for wear and tear: $f(x) = 0{,}972\ \% * (\frac{diameter}{100})^{11{,}4}$

We use an estimate of 700 kg as weight on the exposed leading edge. This will give an annual loss of 62 kg per year per turbine.

20 turbines are likely to produce emissions greater than 1.2 t per year and 31 t over 25 years.

We only count the annual rainfall as rain. If there is a season with a lot of ice and hail, the mass losses will increase beyond this.

Climatological overview (NORWAY) rain 2020 [17]



[17] https://www.met.no/publikasjoner/met-info

Conclusion

The report from Strathclyde mentions that hail and harsh weather conditions will increase wear and tear.

Based on the Strathclyde report it is unlikely that erosion with Norwegian winter conditions will be as low as for Scotland and Ireland. 62 kg annual erosion of micro- and nanoplastics is therefore probably a cautious estimate per. turbine.

In Norway, according to NVE, there are close to 400 turbines with a wing diameter of 130 meters or more. An estimate is then that the total emissions from these 400 turbines are approx. 25 tonnes a year.

In the course of 25 years, it amounts to an estimated 620 tonnes!

Through NORWEA, the industry states a total annual emission of a maximum of 150 grams per turbine[18].

This corresponds to a maximum of 60 kg for 400 turbines.

Our estimates show that the emissions can be over 41 000 % greater than what NORWEA states.

Note that the erosion is exponential.

Larger turbines with higher tip speed will have much more erosion.

Erosion Rate is exponential to Impact Speed or Impact Energy (see graph)

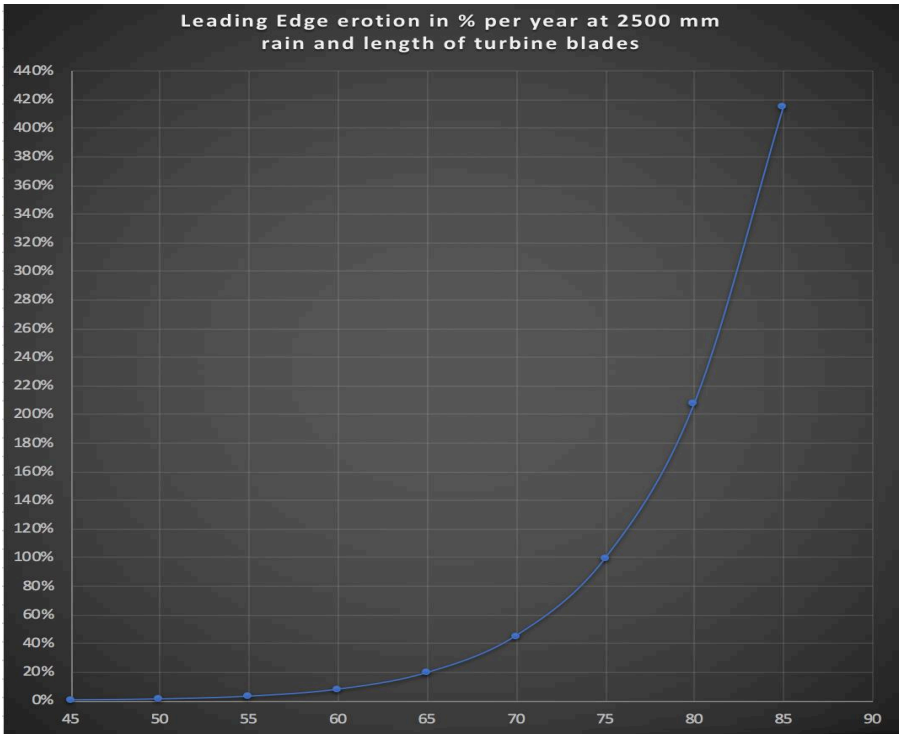


Figure 4. erosion (loss in percent) as a function of precipitation, speed and length of turbine blades

[18] https://norwea.no/norwea-mener/2021/3/26/faktaark-vindkraft-plast-og-bisfenol-a

The average temperature in many places on the Norwegian coast is below 4 degrees from November to April. This gives the risk of at least 5 months with of icing and hail and long periods of higher average mechanical stress and emissions than those found in Scotland.

25 tonnes of annual emissions in the form of micro- and nanoplastics, which are sprinkled over outfields, pastures, water sources and eventually sea areas.

How much of this will be epoxy made with Bisphenol A (BPA) is uncertain, but 1 kilo of BPA is enough to pollute 10 billion litres of water. That's 10,000,000,000 litres.

Since 2017, the WHO has advised that drinking water should have a maximum of 0.1 micrograms of BPA per litre. That is the same as 0.0000001 grams per litre of water[19].

Food producers, dairy farms, reindeer slaughterhouse and Norwegian sheep farmers market pure milk and pure meat from Norwegian mountains. Fish and seafood is a major export industry. With large emissions of toxic compounds from the wind turbine industry, this industry will be exposed. Wind turbines can have major ecological, health and economic consequences.

We do not know any wind turbine facilities having applied for or received emission permit.

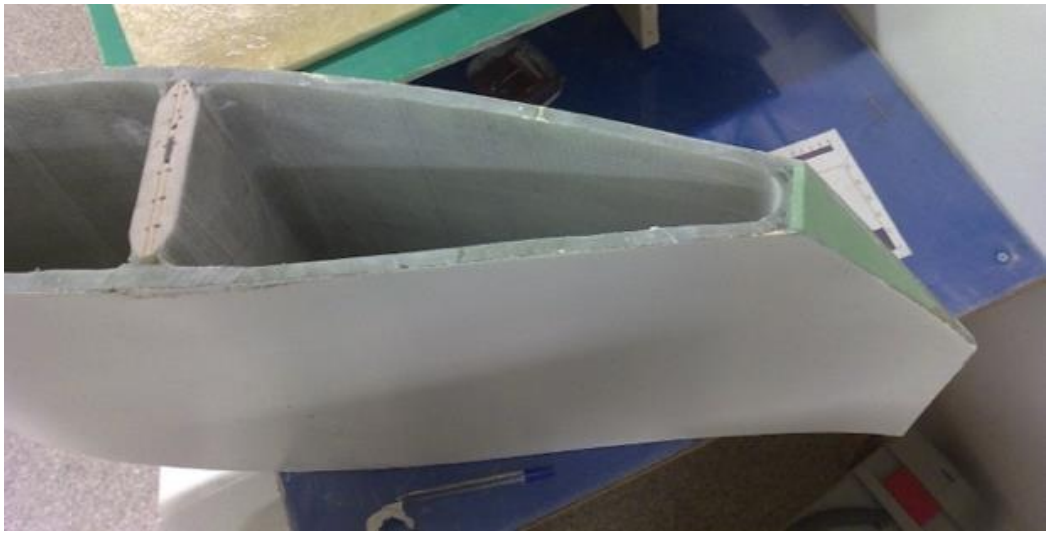


Figure 5 Photo: A small blade profile - to get an impression of proportions. Own photo, from testing

[19] https://www.nmf.no/wp-content/uploads/2021/02/Green-Warriors-of-Norway-ECHA_REACH-Bisphenol-comments-and-evidence.pdf

Guleslettene wind power plant (Florø in Norway) – an example

Guleslettene which has been in focus due to conflict with the municipal waterworks, has approx. 3575 mm rain per. year. They have Vestas 136 turbines with a diameter of 136 m on the wingspan. The formula for calculating wear then becomes $f(x) = 1{,}4\ \% * (\frac{diameter}{100})^{11{,}4}$.

It gives an estimate of 90 kg of emissions of micro and macroplastics per turbine and 3,960 kg annual emissions.

Over 25 years the emissions will be 99 tonnes.

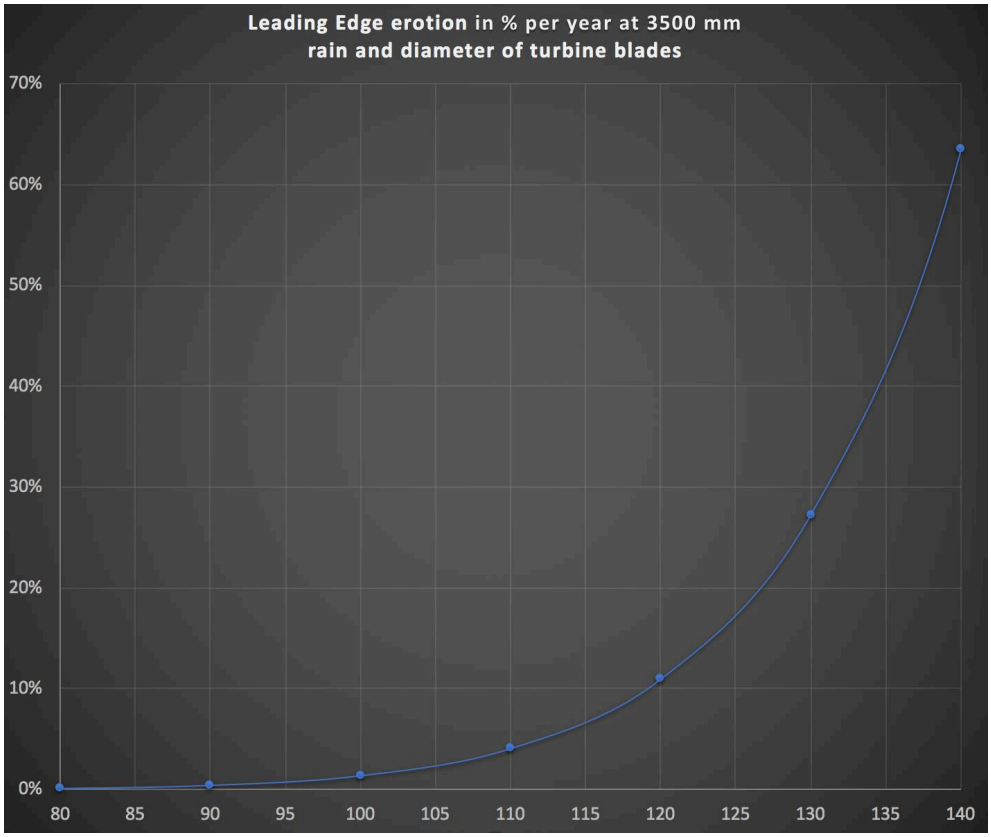


Figure 6. erosion (loss in percent) as a function of precipitation, speed and length of turbine wing

Logical check

In the absence of good published documentation that quantifies mass losses, we have found this one report from Strathclyde.

In the report, *The increasing importance of leading-edge erosion and a review of existing protection solutions from 2019*, it appears that there are large and known problems with mass loss and that they will increase with offshore wind:

> "*Blade leading edge erosion has become an important issue for the offshore wind industry*." and it goes on *"... greater blade lengths and higher tip speeds, as well as a move to new markets with monsoonal climates, has caused leading edge erosion to progress from an issue that only affects a small number of turbines in the most extreme environments to a major problem that affects entire wind farms*." It also states *"..As a result, blades can experience significant erosion within just a few years, which considering their supposed 25-year service life, is a serious problem.*"

You can also read about accelerated tests performed at 135 m/s where LEP is worn through in 30 minutes. When we know that offshore turbines get up to 110 m/s, the emissions from offshore wind must be large.

Here is a short quote about Bisphenol A from a blog within the construction industry. The author has many years of experience with environmental classification and is affiliated with Statsbygg. She can´t find any good explanations for whether epoxy contains Bisphenol A or not, nor how much. The author writes that she received the following answer from the Norwegian Environment Agency:

> "*Bisphenol A and Epichlorohydrin = epoxy resin are not currently on the priority list, but it is harmonized classified (a substance that has been adopted in the EU / EEA and included in Annex VI of CLP), among others. a with environmental hazard classification H411 «Toxic, with long-term effect on life in water*"[20].

The Norwegian Environment Agency therefore recommends, based on both the environmental hazard classification and the suspicion that it has endocrine disrupting effects, that it is a good "precautionary principle" that one tries to find other and more environmentally friendly alternatives.

Remember that Bisphenol A amounts to approx. 13 - 15% of casting weight of a turbine blade.

When it comes to wind turbines and the environment, no rules or guidelines have been made that safeguard people's health, pollution and the environment[21].

Dismantling and demolition

In Norway there are no requirements or guidelines for either disassembly or handling turbine blades after the end of use. The only thing that exists is a requirement that after 12 years of operation, money must be set

[20] https://www.futurebuilt.no/Blogg#!/Blogg/Inneholder-epoxy-stoff-paa-prioritetslisten-Eller-ikke
[21] https://www.futurebuilt.no/Blogg#!/Blogg/Inneholder-epoxy-stoff-paa-prioritetslisten-Eller-ikke

aside for demolition. That money is set aside presupposes that there is money in the operating company, legally it is the landowner who is responsible for clean-up.

The practice of demolition has been so-called controlled rollover into terrain, it pollutes the terrain a lot and it makes much of what is described as circular economy impossible, especially when it comes to all fiberglass and epoxy. The only reason to roll over in terrain is that it costs approximately only approx. 33% compared to disassembly.

Rotor blades pollute during operation and are an environmental problem after the operation phase, there are no requirements for how this composite waste is to be handled.

When it comes to alternative use, there are currently few or no good methods.

The wind turbine industry has previously dumped some of the waste in Africa through so-called second-hand sales, today most of it is buried all over the world. Often the turbines will remain standing after the end of the operational phase, there is a real danger in Norway as well.



Figure 7 Photo: Bending test of a section on a wing profile. Own photo, from testing

"You can´t escape physics and knowledge, no matter how good you are at rhetoric"

"THE TURBINE GROUP" JULY 2021

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