Observation to An Coimisiún Pleanála on application

PAX07.323699 proposed wind farm at the townlands of BEAGH, BEAGHMORE, CLOONBAR, CLOONMWEELAUN, CLOONAGHLASHA, CLOONTEEN, CORITLAUN, DERRYMORE, IRONPOOL, SHANCLOON, TOBEROE, TONACOOLEEN, CO GALWAY.

To erect 11 turbines with a tip height of up to 179 metres

Valid Application lodged on 19/09/2025 c/o Fehily Timoney,

This application is an SID Project and is heretofore referred to as Shancloon Wind Farm.

This observation is submitted by Seamus Roche, Emone, Caherlistrane Co Galway H54 N127

on behalf of concerned members of the Kilconly and Caherlistrane Community .

A chara,

This submission is made on behalf of the Shancloon Windfarm Action Group who wish to oppose the proposed development on the basis of the widespread impacts it will have on the local receiving environment and the people who live in the area.

We wish to state at the outset that having had this application reviewed by a number of experts whose submissions form the grounds of our objections, the application is fundamentally flawed and is not in adherence with the EU EIA Directive (2011/92/EU) as amended by Directive (2014/52/EU) This outlines in Article 3 the requirements for an Environmental Assessment Impact Report, this to include baseline scenario a description of relevant aspects of the current environment and an assessment of changes which would occur as a result of the project going ahead.

The Environmental Impact Assessment Report (EIAR) prepared for this application relies extensively on the 2006 Wind Energy Development Guidelines. This approach is inconsistent with the advice provided by An Coimisiún during the second pre-application consultation meeting held on 10 November 2023, where the Board's representatives explicitly stated that *"the prospective applicant must consider the most up-to-date methodology of the draft Wind Energy Guidelines 2019 and stated that it is not good practice to rely solely on the standards set out in Wind Energy Guidelines 2006."* Despite this clear instruction, the EIAR does not incorporate the 2019 Draft Guidelines, which introduce revised methodologies for noise assessment, shadow flicker, and community engagement. Critically, the coordinates for Turbine 5 in the shadow flicker assessment are incorrect. This fundamental error invalidates

the entire shadow flicker analysis and by extension, the EIAR, as all modelling and compliance claims are based on flawed spatial data.

Furthermore, the minutes of this meeting are notably absent from Appendix 1.1 (Meeting Minutes) of the EIAR, raising concerns regarding the completeness of the consultation record. This omission, combined with reliance on outdated standards, undermines the integrity of the EIAR and its compliance with the requirement under the EIA Directive to use the best available information and methodology.

We wish to highlight serious concerns regarding the adequacy and compliance of site notices erected by RWE Renewables Ireland Limited for the Shancloon Wind Farm planning application. As local residents directly impacted by this development, we have observed multiple failures in the notification process, including three different versions of site notices displaying conflicting submission deadlines, absence of notices within 1 km of certain turbine locations, and failure to maintain notices in a legible condition as required under the Planning and Development Regulations 2001 (as amended). When the notices were changed, no coloured border or other clear indication was provided to signal that revisions had occurred, further compounding public confusion. Additionally, the notices were not REDIII-compliant, as they lacked the mandatory checkbox required under the Renewable Energy Directive III for public engagement transparency. Many notices have also been damaged by weather and left illegible or fallen, for days at a time. These shortcomings demonstrate clear non-compliance with planning law and EU renewable energy obligations, undermining the integrity of public participation in the process.

Biographies

Professor Paul Johnston

Paul Johnston is an engineering hydrologist and an adjunct professor in the Department of Civil and Environmental Engineering at Trinity College Dublin; he has more than 40 years of teaching, research and practical experience in hydrogeology and hydrological modelling with a focus on wetland and karst hydrology. He holds postgraduate qualifications in hydrology and engineering from Canada, UK and Ireland. He has been technical adviser on some of the most complex contaminated soil sites and on hydrological projects in the UK, Ireland, Africa and abroad; he has acted as Expert Adviser to the Oireachtas Committee on the Environment and the UK House of Lords Select Committee on the Environment. He has acted as a Technical Advisor to An Bord Pleanála and undertaken field and policy-related research projects for the EPA, Teagasc and Coillte.

Dr. Pamela Bartley

Dr. Pamela Bartley is a water focussed civil engineer and is considered an Expert Service Provider (ESP) in service to engineering consultants, planning authorities, the legal profession, Environment Sections of County Councils, Uisce Eireann, The National Federation of Group Water Schemes and nationally important limestone quarries. She has almost 30 years of experience in field-based practice working on construction sites, supervising borehole drilling, completing impact assessments, groundwater monitoring, modelling and abstraction point management. She is considered a specialist in hydrology, hydrogeology and karst groundwater systems, Public Water Supply (PWS) and extractive industries (quarries). Her primary degree is civil engineering and her PhD was completed and awarded for her novel contribution to understanding groundwater responses to anthropogenic activities at the land's surfaces. She spends most of her working time on construction sites and large bedrock quarries. She understands the scale of tonnage of machinery and construction controls.

Professor Mike Gormally FRES

Professor (Environmental Science), University of Galway where, for more than 30 years, his scientific research has focussed on nature conservation and habitat management. He published extensively in peer-reviewed scientific journals on a range of habitats including turloughs, peatlands and farmland particularly grasslands, many of which are found in and around the site of the proposed Shancloon Wind Farm (Application Number: PAX07.323699). He is a member of the Galway County Heritage & Biodiversity Forum (2024 – 2030), the Irish Ramsar Wetlands Committee, a Fellow of the Royal Entomological Society, a member of the Botanical Society of Britain and Ireland, a member of BirdWatch

Ireland and a member of An Taisce. Since 2019, he has supervised seven research projects within and surrounding the area of the proposed Shancloon Wind Farm.

Seamus Roche

Seamus Roche holds a Diploma in Mechanical Engineering and has worked extensively in the energy sector, throughout his career. His professional focus is on reducing demand-side energy use through the design, commissioning and maintenance of Building Management Systems (BMS), which optimize building environments and deliver measurable energy savings. He has also designed energy metering and data collection systems to support accurate monitoring and performance analysis of buildings. In recent years, Seamus has specialized in developing and deploying advanced energy monitoring software solutions, applying analytical techniques such as regression analysis to improve efficiency and support carbon reduction strategies. His background provides a strong technical basis for evaluating the technical elements of the EIAR.

Claire Conlisk

Claire grew up in Kilconly, and after living in various countries, cities, and towns, returned in 2020 to the farm where many generations of her ancestors have lived. Claire's background is in IT – she has a BSc in IT for Business, and an MSc in Bioinformatics. She has a strong background in leading teams to deliver large, complex IT projects. She currently works as a Product Owner, which is all about ensuring that both the Business Area that has the requirements, and the Technical Team that are delivering on those requirements, are in alignment, and that both sides are working together in harmony, because that is the best recipe for success. She reviewed the Scoping and Consultation Chapter both from the perspective of someone who lives in and has deep roots in the Community impacted, and from the perspective of years of experience in working with and engaging with stakeholders on all sides of a project.

Mike Burke

A native of the parish of Kilconly, Michael holds a Diploma in Computing and has an industrial background with over twenty-five years' experience in manufacturing data acquisition, analytics, and control systems. In addition to his industrial experience, He has a broad analytical approach to problem-solving, which has contributed to his thirteen first-filing patent applications in camera related technologies.

Driven by a strong passion for photography and videography, he has spent many years capturing the local flora and fauna that make up the delicate ecosystem and distinctive landscape between Kilconly and Caherlistrane.

Sarah Deane

Sarah Deane is an award-winning visual artist based in Kilconly, County Galway, whose work explores memory, place, and transformation through photography, collage, and archival materials. She holds a BA (Hons) in English from University College Dublin and a BA (Hons, First Class) in Photography from the University for the Creative Arts, Farnham. Her work has been exhibited nationally and internationally and published independently and in photography publications. She has received awards and bursaries from national and international bodies, including Galway Arts Centre, Galway Culture Company, and Galway County Council. She is currently Artist-in-Residence with Friends of Kilconly Wetlands.

Sarah draws attention to the fact that the EIAR does not fully reflect the cultural, social, and artistic significance of the Kilconly boglands. The assessment focuses heavily on tangible heritage, such as archaeology and architecture, yet the proposed mitigation measures raise serious concerns. The development is located within an area containing 54 recorded archaeological sites within the 2-kilometre study area, but the applicants propose only advanced geophysical surveys and targeted test trenching post-consent. This approach would allow the development to be approved before the results are available for public scrutiny, limiting opportunities for community input and potentially breaching the EIA Directive, which requires public consultation on cultural heritage matters. At the same time, intangible heritage like ongoing community practices, creative work, and oral-history projects are largely overlooked, and the bog's role as a living cultural landscape supporting memory, creativity, and social connection is not addressed.

She also notes significant concerns with the visual assessment. The photomontages contain multiple technical inconsistencies—including incorrect seasonal indicators, lighting conditions inconsistent with the stated dates, blown-out skies, compression artefacts, and soft or blurred backgrounds—that undermine their reliability. Key viewpoints from the closest residences are omitted, and no summer imagery is provided, despite this being when turbines are most visible. Taken together, these issues call into question the accuracy of the visualisations and the validity of the conclusions drawn from them.

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PEER REVIEW OF APPROPRIATE ASSESSMENT SCREENING AND NATURA IMPACT ASSESSMENT WITH REGARD TO APPLICATION FOR PLANNING PERMISSION BY RWE RENEWABLES LTD FOR "SHANCLOON WINDFARM" (PAX07.323699)

NOVEMBER 2025

1 Competency of Author

This report, prepared by Dr Patrick Moran on behalf of Shancloon Windfarm Action Group, concerns a planning application by RWE Renewables Ireland Ltd. to An Coimisiún Pleanála for a project including 11 no. wind turbine generators (WTG's) and ancillary within the townlands of Beagh, Beagh More, Cloonbar, Cloonweelaun, Cloonnaglasha, Cloonteen, Corillaun, Derrymore, Ironpool, Shancloon, Toberroe and Tonacooleen, Co. Galway. This report comprises a peer-review of the Appropriate Assessment screening and Natura Impact Statement prepared by the applicant to inform the Competent Authority. Dr Moran holds a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD), a M.Sc. in Geographical Information Systems (UU, Coleraine), a Higher Diploma in Environmental and Planning Law (King's Inn) and a M.Sc. in Environmental and Climate Change Law (UCD). Dr Moran has in excess of 25 years of experience in undertaking ecological surveys on both and academic and a professional basis. Dr Moran has peer-reviewed EIAR and NIS for a multitude of both public (for example An Bord Pleanála, Office of Public Works and Co. Councils) and private clients regarding a wide variety of planning proposals.

2 Brief Outline of proposed development

RWE Renewables Ireland Ltd. has submitted an application to An Coimisiún Pleanála for planning permission to construct the Shancloon Wind Farm, County Galway (An Coimisiún Pleanála - Case reference: PAX07.323699). The Proposed Development consists of the following main elements:

- The wind farm site, including the on-site 110 kV substation and loop-in connection to the existing Cashla-Dalton overhead line;
- The turbine delivery route

The Proposed Development includes 11 no. wind turbine generators, a 110 m meteorological mast, and 1 no. 110kV substation along with ancillary civil, drainage and electrical infrastructure (including loop-in connection to the National Electricity Grid) and all associated works related to the construction of the wind farm as well as measures designed to protect and enhance existing habitats.

It must be noted that while renewable energy projects are vital for the achievement of climate goals, the provision of sufficient data to inform the potential environmental impacts of renewable energy projects to ensure that these projects are developed in appropriate locations is nevertheless required.

3 Grounds for objection

Given the current Climate and Biodiversity Emergency, and the inextricable link between the two issues, this objection is not concerned with the necessity for renewable energy. Rather, this objection concerns inadequacies within the information prepared by the applicant to inform the Competent Authority with regard to findings of the Appropriate Assessment Screening and Natura Impact Statement (NIS) prepared on behalf of the applicant. These inadequacies have:

- Precluded the identification of potentially significant likely impacts of the proposed development on Natura 2000 sites proximate to the development;
- Precluded the implementation of sufficient measures to mitigate against potential adverse impacts of the proposed development on the Conservation Objectives of Qualifying Interests of proximate Natura 2000 sites; and
- Precluded the determination that the proposed development will not alone, or in combination with other plans and projects, adversely affect the integrity of the Natura 2000 sites examined in view of the Conservation Objectives of Qualifying Interests.

The legal tests for Appropriate Assessment screening and the preparation of a Natura Impact Statement have not, thus, been met.

There are numerous *lacunae* and deficiencies in the data presented

4 Examples of omissions/lacunae impacting conclusions of Appropriate Assessment process

The granting of development consent by the Relevant Authority following appropriate assessment (AA) is conditional on the removal of all scientific doubt regarding potential adverse impacts on any Natura 2000 sites concerned, and the Relevant Authority must establish that specific scientific findings exist that permit this removal of doubt[1]. The appropriate assessment screening and Natura Impact Statement provided in support of the planning application are inadequately informed and are wholly inadequate and fatally flawed, containing numerous gaps, omissions and *lacunae*. Granting of development consent would, therefore, be unlawful[2].

4.1 Inadequate definition of Zone of Influence

The AA screening exercise indicates that:

> *"...There are no European sites geographically overlapping with any of the actions or aspects of the project. As such, further consideration is given to the 'likely zone of influence' and 'connectivity or ecological continuity...".*

The summary of the S-P-R assessment states:

> *"...In identifying European sites which may be affected by the project, the following is concluded:*
>
> - *There are no European sites geographically overlapping with any of the actions or aspects of the project in any of its phases, or adjacent to them.*
> - *Lough Corrib SAC is within the likely zone of influence (ZoI) of the project.*
> - *European sites whose connectivity or ecological continuity can be affected by the project are determined as Lough Mask SPA, Lough Corrib SPA and Lough Corrib SAC..."*

[1] [2014] IEHC 400, [2018] IESC 31
[2] C-258/11

The conclusion of the Appropriate Assessment screening exercise states:

> *"...In the absence of mitigation measures (which have not been considered at this screening stage), likely significant effects on the qualifying interests and special conservation interests of European sites cannot be excluded beyond reasonable scientific doubt and on the basis of objective scientific information and in light of the conservation objectives of the relevant European sites.*
>
> *A Natura Impact Statement has been completed in respect of the Proposed Development which assesses the potential for adverse effects on the integrity of:*
>
> - *Lough Corrib SAC (000297)*
> - *Lough Corrib SPA (004042)*
> - *Lough Mask SPA (004062)..."*

Despite a statement within the applicants AA screening/NIS that

> *"...regard was had to SNH, 2016 'Guidance on Assessing Connectivity with Special Protection Areas (SPAs)', and an initial study area of 20km was adopted (based on the largest documented core foraging range for SPA bird species) in order to determine whether the bird species recorded using the Proposed Development lands could be associated with any SPA..."*

the methodology fails to take into account the presence of turloughs (a priority habitat) in the same buffer. No fewer than five SACs, designated for Turloughs occur within less than half this buffer distance. Within the Natura 2000 data form associated with these sites, the importance of the sites for birds is highlighted. Indeed, the Natura 2000 data form for Greaghan's Turlough indicates the importance of the site for Whooper Swan, noting that with regard to Quality and Importance

> *'...Wintering whooper swans add significantly to its value...'*

Research at the University of Galway[3, 4] has documented that there are at minimum 16, 29 and 114 turloughs within 5km, 10km and 15km respectively, of the centre of the proposed wind farm development. The ecological connectivity between these turloughs and Lough Mask SPA/Lough Corrib

[3] University of Galway Environmental Science Thesis (2025) Quantifying wetland utilisation by overwintering waterbirds using acoustic monitoring and point count surveys with special reference to turloughs and a raised bog.
[4] University of Galway Environmental Science Bursary Report (2025) Quantifying wetland utilisation by overwintering waterbirds using acoustic monitoring – additional studies

SPA was not assessed within the appropriate assessment process, even for those sites designated as Natura 2000 sites. Although these sites may be designated on the basis of the presence of given habitats, the importance of these features to avifauna (both breeding and over-wintering) is recognised within the Natura 2000 data forms for the sites. Turloughs as an ecological feature are virtually unique to Ireland and in particular the west of Ireland, providing invaluable foraging and roosting habitat for wintering birds in particular. The SNH Guidelines do not take into account the importance of these ephemeral habitats, which vary from season to season and year to year with regard to ornithological interest. The failure of the Appropriate Assessment screening process to take into account potential significant likely impacts on key (avifaunal) components of the ecosystems for which these sites are designated must be considered a fatal flaw in the process. The complex interactions from season to season and year to year between birds using these turloughs and adjacent SPAs was not assessed, and at minimum five Natura 2000 sites (Ardkill Turlough SAC, Greaghan's Turlough SAC, Kilglassan/Caheravoostia Turlough Complex SAC, Shrule Turlough SAC and Skealoghan Turlough SAC) have not been taken into account in the Appropriate Assessment screening process. Indeed, only Shrule Turlough is mentioned within the text of the Appropriate Assessment screening and Natura Impact Statement, and only to indicate that it is not hydrologically connected to the proposed development.

The failure of the Appropriate Assessment screening process to adequately identify an appropriate zone of influence has had the impact of ignoring a number of pertinent sites (albeit SACs, of ornithological importance) that almost certainly host significant numbers of Qualifying interests of SPAs proximate to the proposed development.

The appropriate assessment screening, the purpose of which is to determine if the proposed development has the potential to have any likely significant effects on the Natura 2000 sites occurring within the zone of influence of the proposed development based on Source-Pathway-Receptor linkages, can only be considered to be fatally flawed.

4.2 Inadequate methodology with regard to establishing vantage points

The methodology utilised to undertake winter bird surveys informing the collision risk modelling is wholly insufficient. Critical to the calculations utilised in the Collision Risk Modelling, which is critical in informing the Appropriate Assessment process is the use of vantage points from which observers

can determine if birds pass through the area of the proposed development. The validation of the scientific accuracy of data gathered at vantage points is entirely dependent on area visible from that vantage point, or "Viewshed". While it is noted that viewsheds were generated utilising Geographic Information Systems, there are several variables (which do not appear to have been assessed in any way) upon which the outcome of viewshed analysis (and thus the scientific accuracy of the data gathered from vantage points) is dependant. These variables include the input surface raster (for example Digital Elevation Model, DEM or Digital Terrain Model, DTM), Input point (vantage point), height of observer, Z-factor (height above the input surface raster to be considered). Key to these is the surface input raster – with DEM not considering vegetation, buildings, etc. but only ground levels. In addition, in order to assess the entire site, vantage point watches based on viewsheds must be undertaken simultaneously such as to ensure that the site in its entirety is assessed (assuming that viewshed analysis was correctly undertaken) during each vantage point survey. The efficacy of vantage points cannot be determined in the absence of detailed information as to the generation of viewsheds, in particular the use of DEM vs DTM raster data. Of note at the north western part of the development site are a number of parcels of Sitka Spruce forestry. While the plantation is not mature, likely being 12 -15 years of age, the impact of this area (approximately 30ha) of raised habitat on the arc of a viewshed has not been taken into account, most likely because the generation of viewsheds using appropriate data (based on DTM rather than DEM) is more expensive than simple, ground-height based models. Throughout the relatively flat survey area (as would be calculated from a DEM based on ground height) are a wide range of objects including forestry, scrub, hedgerows, etc. that would have impacted upon the viewshed from any vantage points to varying degrees, depending on observer height, field of view, etc. Although the applicant documents frequently quote Scottish Natural Heritage Guidelines, NatureScot[5] (updated SNH) state

> *"...Birds are often visible when the ground they are flying over is not. Thus, birds can sometimes be seen flying or soaring over hidden valleys and watersheds. Where the key purpose is to estimate the risk of collision with turbines, it is the visibility of the airspace to be occupied by the turbine rotors (the collision risk volume) that is of prime importance. Therefore, it is recommended that visibility be calculated using the least visible part of this airspace, i.e. an imaginary layer suspended at the lowermost height passed through by the rotor blade tips (typically about 20-30m above ground level). Predicting visibility at this level is a simple task using GIS however it should be noted*

[5] https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms

that the baseline should take account of any forestry or other features that will potentially obstruct the view. For example, forestry may be 10-30m high and if viewshed height is taken as 20-30m ground level, the visible area could be overestimated if there is forestry within the viewshed. Being able to view all or most of the site to ground level can be helpful in gauging overall bird activity and usage of the site but is not as important as being able to view the collision risk volume..."

The Collision Risk Modelling, critical with regard to the NIS, is based on results from vantage point surveying gathered using compromised viewshed analysis and cannot be considered scientifically robust, accurate or repeatable. The results of the Collision Risk Modelling, and therefore the conclusions of the NIS can only be considered to be fatally flawed.

4.3 Inadequate assessment of impacts on diurnally active species

Both Lapwing (*Vanellus vanellus*) and Golden Plover (*Pluvialis apricaria*) are recorded as occurring within/adjacent the development footprint during daylight hours. Lapwing and Golden Plover typically forage across farmland at night away from roosting sites. The day-time distribution of these species cannot be used to predict post-sunset use of habitats[6]. Golden Plover is an Annex I (Birds Directive[7]) species and is a Qualifying Interest of the Lough Corrib SPA. The failure to determine if habitat present is utilised during nocturnal commuting/foraging by the Qualifying Interests of proximate SPAs is a critical flaw in the assessment of the ecological resource occurring, with serious ramifications for the conclusions of the Collision Risk Modelling and NIS prepared in support of the proposed development[8].

There are records of Whooper Swan (*Cygnus cygnus*) within the flight activity survey area. While Vantage point watches can be utilised to determine regular commuting flights between roosts and foraging areas, the vantage point watches as presented do not satisfy this requirement. It has been established that Whooper Swan move between roosting sites and foraging sites at key times before sunrise dawn and after sunset, and even in darkness[9]. Furthermore, Whooper Swans typically fly at low altitudes (often below 15 metres) when commuting between foraging and roosting sites but can increase flight height during conditions of reduced visibility or when anticipating a longer commute (for example during very cold weather when inland water bodies may be frozen-over). No systematic, vantage point surveys (from which birds flying below 15 m) were undertaken at the key times of an hour before sunrise and an hour after sunset. As such, it cannot be stated that the methodology

[6] Gillings S, Fullar R and Sutherland W (2005).Diurnal studies do not predict nocturnal habitat choice and site selection of European Golden Plover (*Pluvialis apricaria*) and Northern Lapwing (*Vanellus vanellus*). *The Auk*, **122(4)**, pp 1249 – 1260.
[7] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds
[8] [2020] IEHC 622
[9] Rees E, Bruce J and White G (2005). Factors affecting the behavioural responses of whooper swans (*Cygnus c. cygnus*) to various human activities. *Biological Conservation*, **121**, pp 369 - 382

utilised is based on best scientific practice (for example, the potential use of the site and *environ* by commuting Whooper Swan at key times in near zero lux visibility pre-dawn and post-sunset).

5 Summary

The granting of development consent by the Relevant Authority following appropriate assessment (AA) is conditional on the removal of all scientific doubt regarding potential adverse impacts on any Natura 2000 sites concerned, and the Relevant Authority must establish that specific scientific findings exist that permit this removal of doubt[10]. The appropriate assessment screening and Natura Impact Statement provided in support of the planning application are wholly inadequate and fatally flawed, containing numerous gaps, emissions and *lacunae*. Granting of development consent would, therefore, be unlawful[11].

There are numerous omissions within the AA of the proposed development. For example,

i. Neither the AA screening, nor the NIS consider the importance of proximate SACs designated for turloughs, with regard to the provision of stepping stone habitats for avifauna and these sites are not considered within the NIS;

ii. Critical to assessing any adverse impacts on the integrity of proximate SPAs is the accuracy and scientific robustness of the Collision Risk Modelling. The applicant has presented Collision Risk Modelling based on inaccurate and subjective viewshed analysis, on which vantage point surveys were based and cannot be considered to be scientifically robust. The findings of the Collision Risk Modelling as informing the NIS must be considered to be fatally flawed and not fit-for-purpose.

iii. Neither the AA screening, nor the NIS contain any consideration of *ex- situ* impacts on birds commuting/foraging within the flight activity survey area at night. No survey effort of any sort was undertaken to establish if Golden Plover, a Qualifying Interest of the Lough Corrib SPA, utilise the development site or *environs* post-sunset for commuting/foraging purposes. Day-time distribution of this species cannot be used to predict post-sunset use of habitats[12]. The failure to thoroughly assess *ex-situ* impacts and consider indirect impacts on SPAs must be considered a fatal flaw in the AA process as relates to the proposed development[13].

iv. According to EU Guidelines[14] one of the primary steps in the AA screening process is identification of negative pressures and/or threats with impacts on designated sites and

[10] [2014] IEHC 400, [2018] IESC 31
[11] C-258/11
[12] Gillings S, Fullar R and Sutherland W (2005).Diurnal studies do not predict nocturnal habitat choice and site selection of European Golden Plover (*Pluvialis apricaria*) and Northern Lapwing (*Vanellus vanellus*). *The Auk*, **122(4)**, pp 1249 – 1260.
[13] IEHC [2020] 622
[14] Commission Notice - Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021/C 437/01)

"...The information provided in the Natura 2000 standard data form is the starting point for identifying the habitat types and species that are significantly present on the site and that could be affected by the plan or project, as well as any existing pressures and impacts on the site..."

Although this information is readily available online[15], the AA process fails to consult Natura 2000 data forms to consider these threats, pressures and activities (internal and external) with impacts on the sites as comprehensively detailed in the relevant Natura 2000 data-forms. An investigation of the Natura 2000 data form for the five sites designated as SACs within the Zone of Influence would have signalled to the authors of the AA screening/NIS that owing to the importance of these SACs to local avifauna, they should, at minimum be considered within the AA screening. The lack of consultation of the standard Natura 2000 data form for relevant sites must be seen as a fatal flaw in the AA process.

[15] https://natura2000.eea.europa.eu/

6 Conclusion

Despite the nature of the proposed development, it is the opinion of the author of this peer-review report, that the conclusions of the NIS prepared with regard the planning permission application for the Shancloon Windfarm are currently fundamentally and critically flawed. The documents as provided cannot sufficiently inform an Appropriate Assessment of the proposed development by the Competent Authority, owing to a combination of factors, including the lack of adequate information to assess the potential impact of the proposed project, alone or in combination with other plans/projects on the environment and/or Natura 2000 network. It is respectfully requested that An Coimisiún Pleanála recognise that there are significant omissions, gaps and *lacunae* occurring within the information as submitted, and that these gaps in information can only be addressed through years of scientific research assessing the complex ecological relationship occurring between turloughs and avifaunal use of turlough in the locality of the proposed development. Without this scientifically robust assessment of the physical and ecological resource presented by turloughs to avifauna, the certainty of potential likely significant impacts arising on the Conservation Objectives of Qualifying Interests of relevant sites (nearby SACs designated for Turloughs) cannot accurately be assessed.

Chapter 1 Hydrogeology

Author : Professor Paul Johnston

Overview

The nature of the hydrological regime in the vicinity of the windfarm means it is vulnerable to impact from the construction and operation of the proposed 11 turbines and their infrastructure. However, the assessment of this impact as exhibited in the EIAR is totally inadequate to enable a sustainable planning decision to be made.

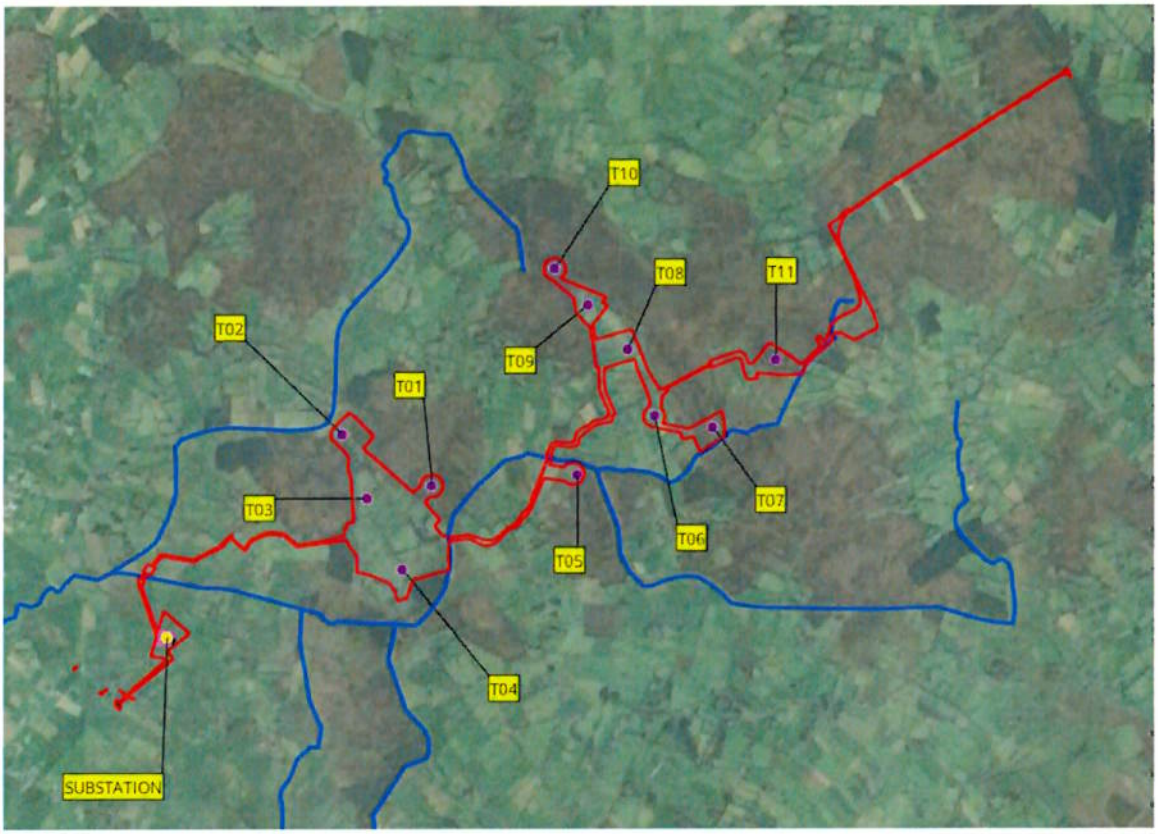


Fig. 1 : The development site with principal drainage (from EIAR Appendix 12.3:Flood risk assessment)

There are many contradictory statements in the reporting of the geology and hydrogeology particularly in respect of the permeabiity of the various geological strata on site, suggesting the hydrological regime is not well understood.

BEDROCK

In essence, the bedrock under most of the site is reported as an argillaceous limestone (calcarenite?) known as the Ardnasillagh formation of unknown hydraulic conductivity although it is mapped by the Geological Survey Ireland as a regionally important karstic aquifer. There are anecdotal reports of moderate yields including one artesian flow on the development site. The weathered bedrock on the site is overlain by a relatively thin

(<20m) cover of mineral soil (glacial till) of relatively low permeability which serves as a confining layer to the karstified bedrock below. Depressions in this cover of glacial till have been infilled by raised peat bogs, much of which are now cutatway. However, there are still relatively intact fragments of high bog (Cloonbar) which are the subject of a restoration plan by a community wetland group.

The confused reporting of apparent karst nature of the bedrock has led to significant uncertainty as to the likely impact of the construction and operation of the proposed 11 turbines. The setback of the turbines and their hardstands to the edge of the bogs seems to have been a guiding principle in their location, at least 5 of the turbines are still located on peat up to 8m in thickness. Critically, no account of the impact of the turbine foundations (piles with concrete foundations up to 5m thick and 25 m in diameter: 2400 cubic metre holes) on the underlying aquifer has been reported. In effect, all these foundations will necessarily puncture a hole through the overlying mineral soil into the founding karstified bedrock, opening a route for potential drainage and contamination.

The karst in this area of north Galway is a reservoir for flows to Lough Corrib SAC. The whole of this region, both as karstifed bedrock and surface streams provides the Clare water body catchment for serving Lough Corrib. Any additional risk of opening new pathways for contamination is not warranted. Later decommissioning of turbines will not remove that risk.

PEATLANDS

The extensive peat cover (albeit much of it cutaway) across the development site is also likely dependent on the underlying regional aquifer as an 'environmental supporting condition'. Most of the monitored reported groundwater levels in the boreholes near the turbines are within a few metres of the ground level. One reported artesian flow occurred near the proposed substation. These water levels are evidence of likely supporting pressures from the underlying aquifer that help to keep the remaining peatland bogs wet. Extensive peat cutting in the area has incorporated surface drainage but any attempts at rewetting/restoration would be jeopardized by any undermining of the underlying karstified aquifer. Piled foundations for turbines would likely affect the role of the regional karst groundwater in supporting any restored bog hydrology.

Siting new holes into a known karstified aquifer (RKc aquifer designation) does not make for a good planning decision.

SURFACE HYDROLOGY

The development site is largely situated on the catchment of the Togher and Cloonbar rivers which are tributaries of the Black River. The Black River, in company with the other streams flowing into Lough Corrib, is a salmonid stream. Discharges (particularly of

colloidal sediments which are not prone to gravitational settlement) into the stream from any construction work or later operational conditions are not acceptable. The drainage design shown in many parts of the EIAR has been used on many windfarms but is unlikely to work effectively here, given the flat landscape, impermeable soil/peat cover and the ubiquitous existing dense drainage network (arising from arterial drainage). The design presented in the EIAR is effectively generic and has not been tailored to the local conditions – and is unlikely to work.

In short, in order to analyze the impact of the development on the hydrological regime, an evaluation of the prevailing water balance is a fundamental requirement. How much drainage water is capable of infiltrating the ground (as the drainage design requires)? What is the recharge to groundwater? – EIAR stated the data was not available. The flood analysis in the EIAR is predicated on a modeling supported by measurements of channel cross-sections. Such predictions ('Indicative Flood Assessment') are unsubstantiated if they are not validated by hydrometric measurements in the field. No measurements of stream discharges or levels were reported in the EIAR.

It seems, from the EIAR, that flood predictions were meaningless anyway since mitigation simply required flood-proofing the base of the turbine towers.

To summarize, the hydrological/hydrogeological investigation was totally inadequate to support an environmental impact assessment of the Shancloon windfarm. Regardless, locating a windfarm of 11 turbines in a sensitive karstified landscape such as north Galway is not justified on environmental grounds alone.

Chapter 2 Groundwater, Karst, Flooding, WFD & Public Water Supply

Author : Dr Pamela Bartley

1.0 Introduction

Dr. Pamela Bartley (Hydro-G) completed an independent assessment of the area proposed for the 11 no. turbine wind farm and associated infrastructure at the proposed Shancloon Wind Farm.

The information in this Chapter of The Shancloon Windfarm Action Group observation relates to groundwater, the karst system underlying the proposed construction area, flooding (both surface and groundwater) and details for the area.

The Shancloon Windfarm Action Group was formed in response to notification to the community that an application was in process. The Community was baffled. How could this design be proposed in a Bog? How could an area with such frequent landscape evidence of flooding and collapsed karst features (Dolines) support the machines and infrastructure proposed? How could an area with such scientific interest be proposed when the Nature Restoration Law has just been enacted into EU Law?

Hydro-G's evaluation of case details presented here relates to the proposed **Shancloon Wind Farm, grid connection and all associated works – ACP Case File PAX07.323699.** For the purposes of the inspector's own Cumulative Impact potential assessment the case file number is PA07.319307 for the adjacent proposed Laurclavagh Renewable Energy Development that is with An Coimisiún Pleanála and in the Further Information opportunities afforded developers. In May 2024 neighbours to the Shancloon Windfarm Action group lodged observations to the then Board with respect to an 8 Turbine proposal named Laurclavagh Renewable Energy Development (PA07.319307) in the Zone of Contribution to Lough Corrib's Public Water Supply source for Galway City and Tuam. The Shancloon Wind Farm is also in the Zone of Contribution to Lough Corrib's Public Water Supply source for Galway City and Tuam. However, the applicant's agents have not presented that information to An Coimisiún Pleanála in the EIAR documentation lodged in September 2025. Details will be presented later in this chapter.

In the course of Hydro-G's evaluation of the application documents relating to the proposed Shancloon Wind Turbine Project, water related matters became apparent in the subject areas of

1) Inappropriate Site Selection – contrary to the law of EIA in terms of Consideration of Alternatives,
2) FRA & actual flooding.
3) Unacknowledged and unassessed Construction Impacts arising from soil compaction in a bog.
4) Karst Conduit Aquifer & Abundant Reporting of Dolines.

5) Unacknowledged Zone of Contribution to Galway and Tuam's PWS source that is Lough Corrib. Incompletely assessed risks posed to downstream Public Water Supplies and GWSs.

6) **WFD Status & Risk – All of the rivers in the vicinity of the proposed development are mapped as POOR Status Rivers (current 2019 – 2024 Envision Reporting omitted). No Water Framework Directive Compliance Report submitted.**

7) The lack of acknowledgement of the true nature of the karst conduit groundwater flow system. If the GSI thought that there was no groundwater conduit flow potential in the bedrock beneath the site, then it would not be mapped as a karst conduit aquifer. The method of geophysical survey applied, at the specific direction of the applicant's agents to the geophysical expert company Apex, is not a method that those looking for karst groundwater flow systems choose. When looking for groundwater, the method to choose is Electro Magnetivity (EM) as the only appropriate method. Apex (2023) cite that "The client specified geophysical investigation methodology consisted of 2D Electrical Resistivity Tomography (ERT) at locations specified by the client. This is because they were only truly interested in the overburden from the perspective of piled foundation design.

In this Hydro-G body of work there is a separate subsection for each of the water related matters. I have considered Chapter 11 and its Appendix 11.2 Karst Assessment Report and Chapter 12 and its Appendix 12.3 Flood Risk Assessment.

2.0 Statement of Expertise

Dr. Pamela Bartley is a water focussed civil engineer and is considered an Expert Service Provider (ESP) in service to engineering consultants, planning authorities, the legal profession, Environment Sections of County Councils, Uisce Eireann, The National Federation of Group Water Schemes and nationally important limestone quarries. She has almost 30 years of experience in field-based practice working on construction sites, supervising borehole drilling, completing impact assessments, groundwater monitoring, modelling and abstraction point management. She is considered a specialist in hydrology, hydrogeology and karst groundwater systems, Public Water Supply (PWS) and extractive industries (quarries). Her primary degree is civil engineering and her PhD was completed and awarded for her novel contribution to understanding groundwater responses to anthropogenic at the land's surfaces. She spends most of her working time on construction sites and large bedrock quarries. She understands the scale of tonnage of machinery and construction controls.

Pamela is qualified and IOSH certified to act as PSDP (Project Supervisor Design Phase) & PSCS (Project Supervisor Construction Stage) as defined by the Health and Safety at Work (Construction) Regulations. Pamela's limited company is a registered Uisce Eireann Supplier (no. 1855) and she is HSQE approved within Uisce Eireann as one of their Hydrogeologist Framework service providers. She has advised on some projects advancing Uisce Eireann's NWRP's resultant Supply Demand Programme. Upon completion of a Diploma in Water and Wastewater Technology at Sligo RTC she completed a degree in Civil Engineering at Queens University, Belfast and then completed a Master of Science in Environmental Engineering, which was followed by a hydrogeologically focussed Ph.D. on Groundwater Impact: both postgraduate degrees were completed within the school of Civil Engineering at Trinity College, Dublin.

Her key work areas are the assessment of potential impact to groundwater and surface water arising from large scale rock extraction and groundwater use for PWS. She specialises in the engineering of groundwater and large-scale water supply boreholes for PWS, GWS, Motorway Service Stations & Hotels. Part of her work requires the assessment of Zones of Contribution to Groundwater and Spring Abstraction Points. Other work areas include evaluation of discharges to groundwater and surface waters for compliance with Irish Regulations and the hydrological and hydrogeological assessments required for EIA. She has a skillset in the assessment of groundwater quality for water treatment process parameters and working in collaboration with water treatment plant designers. She is responsible for the successful, legally compliant, attainment of large-scale Section 4 Discharge Licences.

As a result of work in evaluating planning appeals, Pamela has become specialist in planning evaluations in the context of enacted Irish Regulation and EU Directives concerning the water environment such as the Groundwater Regulations (S.I. No. 9 of 2010 & Amendment Regulations S.I. No. 366/2016), Surface Water Regulations (S.I. No. 272 of 2009 & Amendment Regulations S.I. No. 386 of 2015), Water Framework and Habitats' Directives. She has been an invited guest speaker at An Bord Pleanála, The Irish Concrete Federation, The Health Service Executive, Environmental Health Officers National Conference, The Irish Planning Institute's National Conference, The International Association of Hydrogeologist's National Conference (Irish Branch) and has delivered hydrogeological lectures to the public during Science Week. In the past, she has held full time lecturing positions in third level institutions (WIT & CIT, 1996 – 1999), delivered practical laboratory instruction in the assessment of subsoils for the FETAC Site Assessor programme and also demonstrated hydraulics laboratory and practical field survey tutorial modules at Trinity College Dublin (1996). Pamela is a qualified and certified 'Site Assessor' and has been an interviewer for examination candidates in respect of eligibility for the Site Suitability FETAC Qualification. Pamela Bartley's company is Bartley Hydrogeology ltd., registered to trade as Hydro-G. The

company holds the requisite professional indemnity insurance and employers, public and products liability insurances.

3.0 Inappropriate Site Selection

The proposed wind farm at Shancloon, Co. Galway is an example of where not to propose large scale construction or a wind farm for many reasons, including the following:

3.1 the proposed development is as much in Bog as it is on agricultural lands, contrary to the claim made by the agents for the project. There are inconsistent claims in different parts of the documentation. Chapter 3's Consideration of Alternatives is a notional consideration, an exercise in typing. Text in Table 3.1 of Chapter 3 of the EIAR documentation states that

"The Proposed Development is located in lands under agricultural use which comprise managed grassland and areas of wet grasslands and peatlands which include recolonising cutover bog and raised bog, and their associated extensive drainage network. The development lands also includes a watercourse crossing and small areas of conifer plantation. There will be a long term loss of these habitats relative to the footprint of the Proposed Development."

But

Section 2.2. of the Apex (2023) report, contained within Appendix 11.2 Karst Assessment, states as follows:

"Of the 13 proposed wind turbines(T01 – T13):

- *five are situated in open agricultural land (T03, T04, T06, T08 & T09),*
- *one is in a forested area (T10), and*
- *seven are in* ***areas of open bog areas*** *(T01, T02, T05, T07, T11, T12 & T13), (Fig. 2.1, Apex 2023).*

Fig 2.1: Site location with turbine bases highlighted in red.

3.2 the proposed development area is an area that will release carbon during a construction phase, if that were to be permitted. The development would therefore by contrary to the National Adaptation Plan (2025). The United Nations Framework Convention on Climate Change (UNFCCC) states as follows:

- p.42, "Avoiding Maladaptation: Ensure that adaptation actions do not inadvertently create new vulnerabilities or exacerbate existing ones."

- "Consideration of Climate Mitigation: Ensure that climate mitigation outcomes are considered alongside adaptation planning where appropriate."

- p. 47, As part of its annual review, the CCAC also considers developments made in terms of supporting a just transition in terms of both mitigation and adaptation – noting in its 2023 review the need to accelerate the integration of the just transition principles across all mitigation and adaptation policy development and implementation".

- "In general, development in areas with a high risk of flooding should be avoided as per the sequential approach" and only mentions towns and cities as exceptions, section 3.3 of TII Strategic Flood Risk Assessment of National Roads 2040 Strategy (April, 2023).

Maladaptation refers to actions or strategies that, while intended to address the challenges posed by climate change, inadvertently exacerbate the problem, or create new vulnerabilities. This can occur when adaptation measures are poorly planned, misaligned with the local conditions, or fail to account for long- term consequences.

3.3 The proposal to present the application area as suitable for development could be considered as a breach of Annex III of DIRECTIVE 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. With reference to wind energy projects, Point 2 in Annex III clearly states that, **"The environmental sensitivity of geographical areas likely to be affected by projects must be considered, having regard, in particular, to:**

(a) the existing land use;

(b) the relative abundance, quality and regenerative capacity of natural resources in the area;

(c) **the absorption capacity of the natural environment**, paying particular attention to the following areas:

(i) **wetlands; ...** "

Attention is drawn here to the *legal obligation* to consider "the absorption capacity of the natural environment".

4.0 Flooding

On page 15 of 53 of Chapter 12 it is stated that "The location of proposed turbine T07 falls within a delineated predictive fluvial Flood Zone 'A' and Flood Zone 'B'. However, no vulnerable components of the turbine will be located at ground level and will be constructed to a minimum level of 31.3m OD, which is 0.3m above the 0.1% AEP (1 in 1000 Year) fluvial flood level." Hydro-G asks, why retain T7 then? The mitigation measures proposed are not sufficient.

In relation to Flooding, the drawing on page 59 of 72 actually shows that T7, T5, T1, T2 and the Substation are either within or very close to the boundary of the modelled 1 in 100 year (+climate change) PLUVIAL flood zones. These are the modelled flood zones for the predevelopment phase. The Digital Terrain Model and flood flow model does not represent the terrain after construction for all the roads and bog compaction following crane lifts, construction of the turbine mass bases and turbine erection.

The agents for the applicant have NOT acknowledged Groundwater Flood Risk even though the GSI maps large extents of land in the area as having groundwater flooding experience in the last ten years. The applicant proposes 176 piled holes into bedrock

and refuses to acknowledge future expressions of groundwater from those piled foundation puncture holes. This presents a risk that has not been assessed in the EIA.

Hydro-G offers that the OPW's definition of Flood Zone A is **"Flood Zone A is a designation by the Office of Public Works (OPW) for areas with the highest probability of flooding from rivers and the sea. In this zone, the chance of flooding in any given year is greater than 1% (or 1 in 100 for river flooding)."** The nuances of the actual definition rather than the applicant's agent's text is critically important in terms of risk assessment and planning feasibility. Of particular note is that:

- Flood Zone A is primarily defined as the highest risk area.
- The probability is NOT 1 in 100 year BUT GREATER than 1% IN ANY GIVEN YEAR.

Further, The Commission is well aware that development in Flood Zone A is subject to strict planning controls to manage the flood risk. Planning authorities consider the potential impact of new development on flood risk to both the area and surrounding locations.

The Department of the Environment, Heritage and Local Government / Office of Public Works. (2009). *The Planning System and Flood Risk Management – Guidelines for Planning Authorities*. Dublin: Government of Ireland clearly states that

Most types of development would be considered inappropriate in this zone. Development in this zone should be avoided and/or only considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the Justification Test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone. - section 3.5, p.24

The applicant presents text relating to 'Drainage of Substation (Page 30 of 53, Chapter 12 – Hydrology and Water Quality)', as follows:

"The substation will be drained via an underground piped surface water drainage network. The network will also utilise linear drainage channels and filter drains.

The network will discharge overland via a Class 1 Full Retention Oil Separator at a restricted greenfield rate. Attenuation for flows exceeding this rate will be provided within an underground tank.

In accordance with SuDS best practice, a rainwater harvesting tank will be included. Rainwater will be filtered and stored within the underground tank for reuse.

There will also be no discharge of foul flows from welfare units within the substation, with water stored in tanks and removed from site by a contractor."

Hydro-G offers that it is not possible to drain land in winter periods when the ground is supersaturated and flooded. The proposed "underground piped drainage network" and the proposed "underground tank" will float and present stability risks to the substation if constructed in the way that is assessed in the EIAR for the proposal.

Hydro-G presents photographic evidence (Plate 1) for An Coimisiún Pleanála's as to what the lands proposed for the siting of the substation look like in November 2025.

It is obvious that the lands flood and the proposed drainage network's discharge overland is not technically feasible.

An Coimisiún Pleanála is asked to provide justification for substation and Wind Turbine locations in flooded plains of bog land in a conduit karst groundwater system where the applicant reports two pages of surface expressions of karst and some within the construction areas of multiple Turbines (Table 3-1: Karst features identified during the Site reconnaissance, Appendix 11.2). Hydro-G advises An Coimisiún Pleanála that the risks are too high when placing 'Exceptional Abnormal Loads', as defined by the Road Traffic (Construction Equipment & Use of Vehicles) Regulations of 2003, on peat and gravel substrate over a landscape littered with Dolines connecting to a subterranean karst conduit aquifer. It is true that the tonnage associated with the Substation and the Cranes and hoists lifting the masts, hubs and blades will exceed 180 tonnes.

The applicant, in the GII Report (2023) that is contained within Appendix 11.2 Karst Assessment Report presents Tables of SUMMARY OF POINT LOAD TEST RESULTS in which reported Failure Loads range from 17 to 36 KN, approximately, which are equivalent to 1.7 to 3.6 Tonnes.

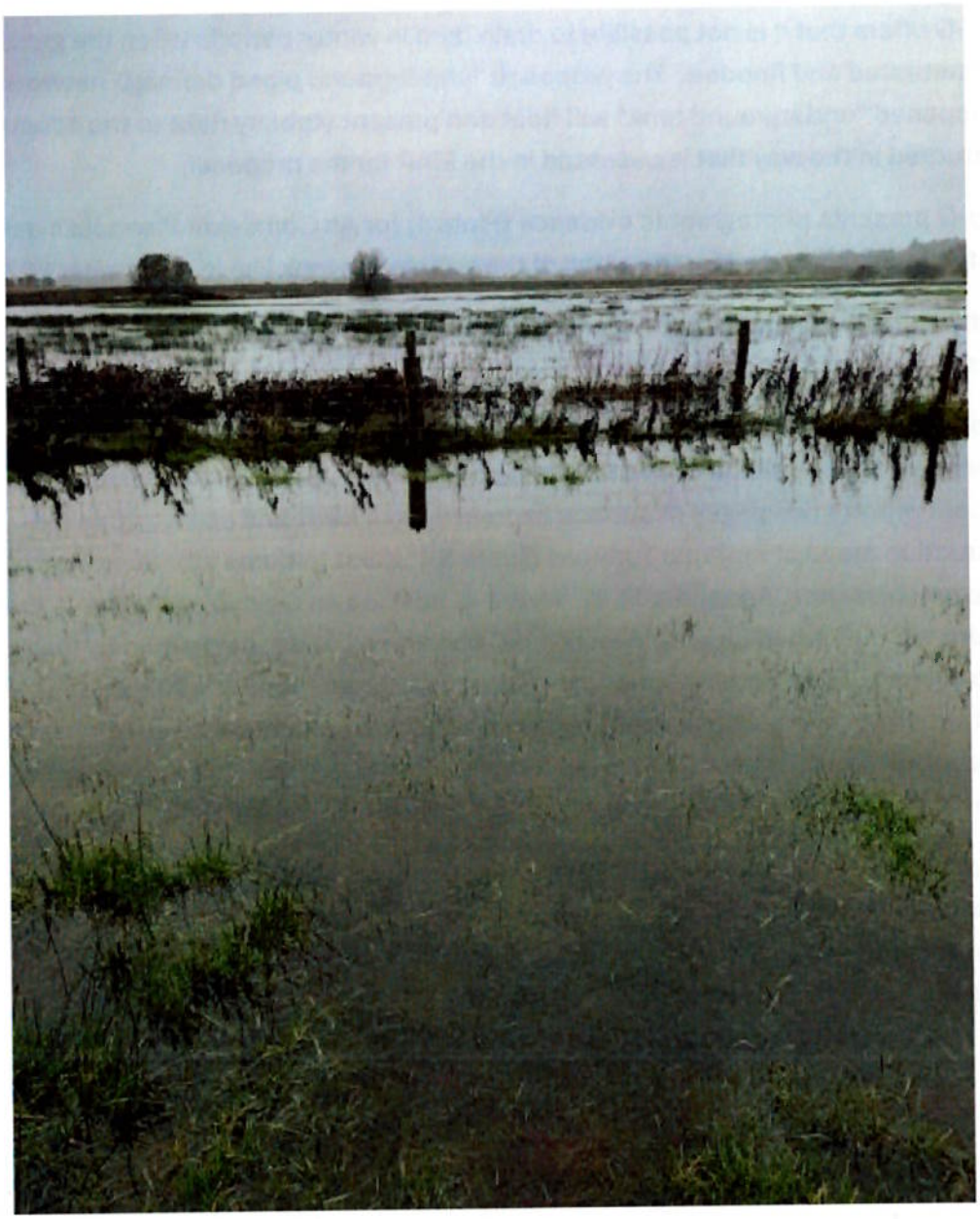


Plate 1 Proposed Shancloon Wind Farm's Substation Location (13th November 2025)

The Flood Risk Assessment has underestimated the frequency of flood events. Examination of Geological Survey of Ireland Seasonal Flood Maps, historic OS maps, newspaper reports and local information reveals that there have been far more flood events in recent years and in history than the Flood Risk Assessment admits. The area is therefore significantly more flood prone than the Flood Risk Assessment for the proposed development has portrayed it to be. The refusal to consider groundwater flood risk is an inappropriate assessment strategy.

The fact that that the area's flood frequency has been greatly under-estimated supports a conclusion of no confidence in the Flood Risk Assessment's claim that In consideration of findings and output of this SSFRA, and the implementation of the recommendations listed above, the flood risk to and from the development as proposed is considered to be LOW. The wind farm development as proposed is not predicted to result in an adverse impact to the existing hydrological regime of the area or increase flood risk elsewhere and is therefore considered to be appropriate from a flood risk perspective." The under-estimation of present flood frequency means that post-construction flood risk is likely to be higher than claimed.

The misrepresentation of the absorption capacity of the natural environment in the development area amounts to a breach of Annex III of DIRECTIVE 2011/92/EU. The proposed development should be refused on this basis.

5.0 Unassessed Construction Impacts arising from soil compaction in a bog.

The proposal to bring large cranes into this wetland and flood zone presents real risks of increasing the already frequent flood experiences. The risks are presented by virtue of applying mass loads to a wet subsoil and thereby destroying what small pore space there may have been. Pore space allows some waters to be absorbed in the soils of a flood zone, which this is. When abnormal loads are applied to large areas of the flood plain, for the purposes of creating hardstanding for cranes and turbine component part, the characteristic of the soils, porosity and runoff characteristic change. This has neither been acknowledged nor evaluated by the agents for the applicant. Cranes are required to lift the masts and turbine blades.

Counter weights are required to stabilise the cranes. The cranes and counter weights require enabling roads and land surfaces with the ability to carry 750 tonne weight of a crane itself plus the likely 200 tonne counter weight and the chain and hoist infrastructure. The pressure of the weight of the crane and counter weight results in destruction of the permeability and pore space of subsoils in the proposed construction areas, which are lands mapped on historic 6" OSI maps as 'liable to flood'. The potential for increased flood risk arising from the change in soil and subsoil structure is not acknowledged by those employed by renewable energy investment firms. The Commission is requested to use their own resources, or AI, to fact check potential mass loadings arising from the enabling works that would be required to erect turbines in a flood plain wetland such as at the proposed Shancloon Wind Farm site. Hydro-G's forays into this realm of AI and civil engineering infrastructure suggest, as follows:

- In relation to the proposed Shancloon: Construction of 11 no. wind turbines with a ground to blade tip height range of 179.25 m to 180 m. The wind turbines will have a rotor diameter ranging from 149.1 m to 155 m and a hub height ranging from 102.5m to 105m.

- Therefore, crane weights (ballast/counterweights) and base loadings required for erecting a 3-blade wind turbine with >100 **m hub height** and c.**75 m rotor diameter** in a wetland flood zone is complex and requires a full engineering lift study.

- However, general considerations when erecting a large wind turbine in a challenging site (wetland, flood-zone) must consider:

    - The crane capacity (lift weight + reach) and corresponding ballast/counterweight.
    - Ground support / crane hardstanding and pad design (especially for soft or wet ground).
    - Water/flood risk, settlement, high water table, reduced bearing capacity.
    - Wind loads during erection (significant for tall hub height & large rotor).
    - Transport, crane mobilisation, boom length, luffing or fixed jib, outrigger spread.
    - Safety factors, crane manufacturer load charts, method statements, lifting plans.

- Main Lifting cranes can have a lifting capacity of up to 850 tonnes and a tail crane up to 500 tonnes.

- The ground pressure under a crane lifting a tower up to 105 m, "Every square metre under the heavy crawler chains must be able to withstand a ground pressure of 26 tonnes." theconstructtionindex.co.uk

- For each of the 11 turbines proposed for Shancloon Wind Fram, a crane of higher higher-capacity range would be required (up to 1000tonne) class cranes depending on component weights and reach).
- In a wetland/flood zone, additional measures are required:

    - Ground bearing capacity will be lower, so you may need piled support, mats, heavier crane pad substructure, larger footprint.
    - Hardstanding for the crane likely needs thicker crushed stone, possibly geotextile, maybe timber/steel mats to distribute loads.
    - The crane's outriggers and tracks (if crawler) will impose high ground pressure; you must check ground pressure limits of the site.
    - Flood risk means you must ensure crane set-up does not risk stability if water rises or softens ground.
    - The lift plan must assume possible higher wind/gust profiles due to exposure in open wetland.

The facts of how crane and ballast weights will impact the drainage systems are not assessed and the omissions presents a health hazard and risk to the public and the WFD's Objectives for waterbodies in the catchment. The inspector and The Commission are requested to investigate and provide the public with their considerations of these details in their reporting and discussions/voting on this matter.

No details are provided as to whether the applicant has calculated loss of flood plain on the basis of ground surface area or has the subsurface porosity degradation across all roads and crane hardstanding also been calculated.

6.0 Karst Conduit Aquifer & Abundance of Dolines reported

The applicant reports two pages of surface expressions of karst and some within the construction areas of multiple Turbines (Table 3-1: Karst features identified during the Site reconnaissance, Appendix 11.2). Hydro-G advises An Coimisiún Pleanála that the

risks are too high when placing 'Exceptional Abnormal Loads', as defined by the Road Traffic (Construction Equipment & Use of Vehicles) Regulations of 2003, on peat and gravel substrate over a landscape littered with Dolines connecting to a subterranean karst conduit aquifer. It is true that the tonnage associated with the Substation and the Cranes and hoists lifting the masts, hubs and blades will exceed 180 tonnes.

The applicant, in the GII Report (2023) that is contained within Appendix 11.2 Karst Assessment Report presents Tables of SUMMARY OF POINT LOAD TEST RESULTS in which reported Failure Loads range from 17 to 36 KN, approximately, which are equivalent to 1.7 to 3.6 Tonnes.

The Karst Assessment Report (Appendix 11.2) and the associated Chapter 11 for Solis, Geology & Hydrogeology presents Tables of Desk Study and actual observations for Dolines, which are surface expressions of karst features in which limestone bedrock collapses because the rain getting into the ground wears down the bedrock.

The GSI explains dolines here: https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/activities/understanding-irish-karst/karst-landforms/Pages/Enclosed-depressions.aspx#:~:text=A%20doline%20(or%20sinkhole%20as,in%20both%20diameter%20and%20depth.

Specific text provided by the GSI include as follows:

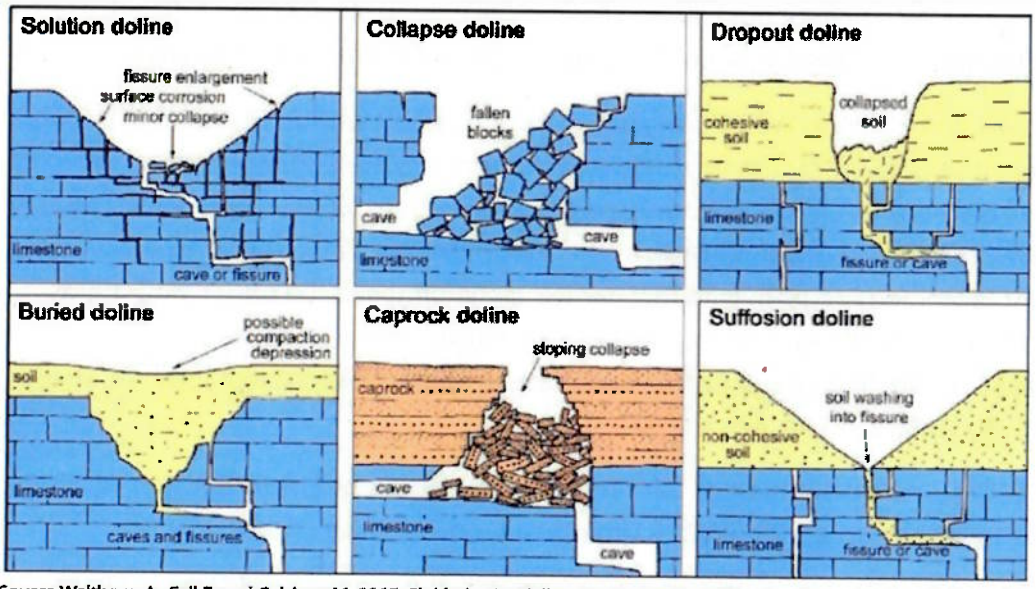
"Dolines are formed by two main methods: the slow solutional removal of rock from the surface downward (solution doline), or by the collapse of overlying rock or overlying material into an underground cave or chamber (collapse doline). Most dolines are considered polygenetic in origin and are usually formed from a combination of solution and collapse; however one of these processes usually dominates their appearance, whether it is catastrophic or gradual."

"Solution dolines form in such places such as joint intersections. Surface runoff will focus at these areas of weakness, leading to the solution of the bedrock. Water and solutes will then move downwards through the bedrock openings (such as at joints and bedding planes). The result is a funnel-shaped depression on the surface. Solution dolines are considered to be formed by a gradual process of sagging or settling of the overlying deposits into the hollow left by an area of dissolving rock. Solution dolines are usually characterised by gentle slopes with no obvious rupturing of the soil or surface."

"Collapse dolines usually occur very suddenly where the bedrock or subsoil material collapse into and underlying void. Cover collapse dolines, sometimes known as dropout dolines are very common in Ireland. They occur in karst areas covered by unconsolidated material, such as glacial till. They form by the sudden downward movement of the overburden and usually form in areas where the overburden is

somewhat cohesive. They occur in a process called 'piping', where a soil or subsoil arch, which has formed due to removal of material at the bottom of a layer of overburden, suddenly gives way (White, 1988). Although there must be a highly efficient pathway established for sediment transportation in order for the soil arch to form and grow, a large bedrock hollow is not necessary for their development. Cover collapse dolines are characterised by vertical or steep-sided collapses, with a very sharp break in slope and often have stepped sides, where soil is exposed. Over time, however, their slopes may degrade and infilling sediment may build up giving these dolines the morphology of solution dolines (Ford and Williams, 2007)."

The GSI provide this image:



Source Waltham, A., Fell F. and Culshaw M. 2005. Sinkholes (or dolines) and subsidence: karst and cavernous rocks in engineering and construction. Springer. Berlin.

Hydro-G advises An Coimisiún Pleanála that the GSI clearly shows that Dolines are connected to a conduit groundwater flow system beneath. The GSI also map the area under the proposed Shancloon Wind Farm as Conduit Karst. As a karst specialist, I disagree with the applicant's agent's assertions that there is little potential for groundwater flow or interception of the groundwater conduit system.

The method of geophysical survey applied, at the specific direction of the applicant's agents to the geophysical expert company Apex, is not a method that those looking for karst groundwater flow systems choose. When looking for groundwater, the method to choose is Electro Magnetivity (EM) as the only appropriate method. Apex (2023) cite that "The client specified geophysical investigation methodology consisted of 2D Electrical Resistivity Tomography (ERT) at locations specified by the client. This is because they were only truly interested in the overburden from the perspective of piled foundation design.

7.0 Unassessed risks posed to downstream Public Water Supplies

The applicant states that their development is in the Corrib Catchment (HA30) and they correctly state in Chapter 12's Section 12.8.6 'Water Dependent Protected Areas' that Lough Corrib SAC is 1km downstream.

The Water Chapter fails to make consider the significance, impact, mitigation or residual impacts in the context of the birds of Lough Corrib SPA or any of the site-specific Statutory Instruments. With respect to designations, the site's location in the catchment of the Corrib prescribes a significance to Lough Corrib's designation as a European Site (Lough Corrib SAC, Site Code 000297; Lough Corrib SPA Site Code 004042) and the two Statutory Instruments associated: the European Communities Conservation of Wild Birds (Lough Corrib Special Protection Area 004042) Regulations 2012 and Lough Corrib Special Area of Conservation 000297 Regulations 2022.

Another omission from the Water Chapter assessments evaluation of potential impacts is that the entire Corrib Catchment, including the proposed development area, is considered by Uisce Eireann to be the Zone of Contribution to the Lough Corrib PWS for Galway City, Tuam and surrounding districts. Also, Chapter 12's Section 12.8.6 'Water Dependent Protected Areas' fails to register the significance of the underlying Clare Corrib's Groundwater Body mapping as a Drinking Water Protected Area [IEPA1_WE_G_0020] and Lough Corrib as a Drinking Water Source Lake [EU PA Codes IEPA1_WE_30_666b & IEPA1_WE_30_666a].

The applicant's agent presents text relating to Turbine Foundations in 'Section 12.1.1.1 Turbine Foundations' (page 38 of 53 of Chapter 12) and it is stated that

"Piled turbine foundations will be used across the Site. The piled turbine foundations will be constructed using standard reinforced concrete construction techniques. Between 14 and 16 piles will be used at each piled turbine foundation. Concrete volumes required for piled foundations averages as 733 m3 per foundation, which has been rounded up to 800 m3 for the purpose of this impact assessment."

Hydro-G advises An Coimisiún Pleanála, as follows:

- The applicant proposes 16 drilled BHs at each of the 11 proposed turbine locations. Therefore, 176 piles will be drilled to depths penetrating bedrock.

- The agent proposes 800m3 of concrete per piled borehole. This in itself is interesting. The inspector is invited to complete the Area (Pii x R^2) x Depth of Pile (e.g.25m) calculation, which we commonly complete as hydrogeologists involved in calculating the amount of concrete required for a BH. On the basis of a 1m diameter BH, 20m3 of concrete would be required per 25m deep pile. Agents for the applicant suggest that they will use 800m3 of concrete per pile. I

would invite the inspector's consideration of why such a large volume is required and where will that concrete have potential to be lost to? Is it to be assimilated into pore space of the 15 to 20m depth of peat, silt, gravels beneath each turbine, as is shown in the Cross Sections of the Geophysical Report (Apex, 2023, Appendix 11.3). Or is there potential for large losses of concrete into the unacknowledged karst conduit aquifer connecting the site to Lough Corrib SAC, SAP, pNHA and Drinking Water Supply Source.

- Therefore, the agent proposes 176 boreholes x 800m3/BH = 140,800 m3 of concrete that will be delivered by trucks, which equates to 14,080 truck deliveries at least and they will be return journeys – so, there will be 28,160 trucks with cement travelling on floating roads through bogs. Interesting, and not in a pleasant way.

- The calculations suggesting 28,000 truck deliveries are for the concrete required to fill each of the 176 piled foundations only.

- Additional trucks will be required for the concrete bases to each turbine.

- The inspector is requested to identify, and place the information on public file, where these risks have been assessed in the context of potential impacts, mitigation measures and residual impacts, as is the norm in EIA and EIARs.

It is interesting that the applicant's agents present a generic response from Uisce Eireann. When Hydro-G worked on a quarry in the same aquifer and same proximity to Lough Corrib PWS, Hydro-G received a very detailed request for information from Uisce Eireann. Of course, An Coimisiún Pleanála will again engage with Uisce Eireann on this matter, as is the statutory obligation.

Another interesting omission from the assessments are the proposed coatings for the turbines that will be painted on masts and blades in the Operational & Maintenance Phases. It is understood that Bisphenols are listed in water related relation at fractions of ug/l limits. Neither the baseline quality or potential impacts are presented by the applicant for An Coimisiún Pleanála's EIA.

8.0 Water Framework Directive Lacunae

None of the rivers in the proposed development site are meeting their WFD Objectives and the EPA published deadline is 2027 – just over one year away. The proposed development area's Togher River and the Black River [both referred to by the EPA as the Black_Shrule_010] are both mapped as 3rd Cycle At Risk and POOR Status (EPA Envision Mapping 2019 – 2024 reporting period = currently reported by the EPA). EPA (2024) 3rd Cycle Report for the Corrib Catchment (HA3) reports that the significant issues are Sediments, Morphological and Nutrients and that the Pressures are Hydromorphological, Agriculture and Peat. There is a long and steep road to bring a river system from POOR status to the statutory obligation of GOOD. Construction in peatlands and release of ammonia through excavation of peat is not going to assist in the effort to demonstrate compliance with the Water Framework Directive.

It is noted that there is no Water Framework Directive Compliance Report accompanying the application.

9.0 Recommendation

It is recommended that An Coimisiún Pleanála refuse the application on the grounds of an inappropriate site selection and landscape position.

10.0 Reasons

A wind Farm and associated substation and grid connection infrastructure are not suitable development on a Bog overlying a Regionally Important Karst Conduit Aquifer where so many Dolines are reported by the applicant and documented by the GSI.

Neither are Wind Farm and substation development sustainable in a Flood Zones upgradient of Lough Corrib SAC, SPA, pNHA and Public Water Supply Source to Galway City, Tuam and surrounds as well as the multitude of downgradient Group Water Scheme groundwater sources.

The EIAR has not presented risks posed by, or proposed mitigation measures for, construction risks associated with the injection of concrete into 176 concrete piles in conduit karst limestone upgradient of Group Water Schemes and the public Water Supply Source Lake of Strategic Importance. The volumes of concrete presented in the EIAR do not make sense and leave unacceptable uncertainty regarding how much concrete will be lost into the subsurface of the proposed development area. The potential negative effects on the loss of flood plain and changes to the drainage systems are not compatible with the Nature Restoration Law obligations or the National Biodiversity Plan. Similarly, all rivers in the proposed development area are currently

Poor Status (EPA Envision 2019 – 2024) and the nation has 1 year to remedy this. Construction will not assist in efforts to bring water quality back to at least Good Status.

Chapter 3 Ornithology

Author : Professor Mike Gormally

Competency of Professor Mike Gormally FRES

Professor (Environmental Science), University of Galway where, for more than 30 years, my scientific research has focussed on nature conservation and habitat management. The range of Environmental Science modules developed and taught by me at both undergraduate and postgraduate levels have included Ecological Survey Techniques, Nature Conservation & Habitat Management and Environmental Impact Assessment. I also spearheaded the development of a novel masters programme entitled: MSc in Biodiversity & Land-use Planning at the University of Galway.

I have published extensively in peer-reviewed scientific journals on a range of habitats, many of which are found in and around the site of the proposed Shancloon Wind Farm (Application Number: PAX07.323699). These publications include, among others, 22 peer-reviewed papers on turloughs, 16 peer-reviewed papers relating to peatland ecology and 22 peer-reviewed papers relating to the ecology of farmland, particularly grasslands. I am a member of the Galway County Heritage & Biodiversity Forum (2024 – 2030), the Irish Ramsar Wetlands Committee, a Fellow of the Royal Entomological Society, a member of the Botanical Society of Britain and Ireland, a member of BirdWatch Ireland and a member of An Taisce.

To date, 24 students have successfully completed their PhDs under my supervision and I currently co-supervise three PhD students, one of whom is undertaking ornithological research (funded by Research Ireland and the NPWS) in the area of the proposed Shancloon Wind Farm and its surrounds. In addition, since 2019, I have supervised seven research projects within and surrounding the area of the proposed Shancloon Wind Farm. The data relating to these projects are currently being prepared for submission to peer-reviewed scientific journals. Finally, I have hosted many site visits by Irish and international university students to Cloonbar bog and its surrounds as well as fellow scientists who have visited the area.

To whom it may concern,

I believe it is essential that An Coimisiún, in considering this application, take account of the fact that the EIAR is fundamentally flawed and is not fit for the purpose intended in allowing a full and robust assessment of the likely significant effects of the proposed development on the receiving environment direct or indirect, or in combination with other effects. The criteria for these considerations of what must be assessed and considered is set out in the criteria of projects falling under the remit of the EU EIA Directive 2011/92/EU as amended by 2014/52/EU under Article 3(1).

An Coimisiún cannot permit this development on the basis of an inadequate adherence to the regulations of this Directive and therefore must refuse.

Council Regulations (EU) 2022/2577 permits streamlining of permit granting processes for renewable energy projects. This does not set aside the obligations for proper environmental assessment and the identification of likely significant and cumulative impacts of a proposed project on the receiving environment.

2.1 Bird behaviour in a turlough-dense landscape

Turloughs (disappearing lakes found primarily in the mid-west of Ireland) are EU Priority Habitats[1] which exhibit a wide range of flooding patterns mostly throughout the Winter. This results in the surface area of water available to overwintering birds constantly fluctuating unlike permanent waterbodies such as lakes and rivers where water is always present. By way of example, Geological Survey of Ireland (GSI) data (2018 - 2021) show that the area of land covered with water at Shrule Turlough (4km approx. west of the proposed development) was approximately 9.5 times greater at 3km^2 (approx.) during February 2021compared to just 0.2km^2 (approx.) during February 2022.

Research at the University of Galway[2,3] has documented, for the first time, that there are at least 16, 29 and 114 turloughs within 5km, 10km and 15km respectively, of the centre of the proposed wind farm development with a conservative estimate of 21km^2 as the total area of turloughs combined within this 15km radius (Fig. 2.1).

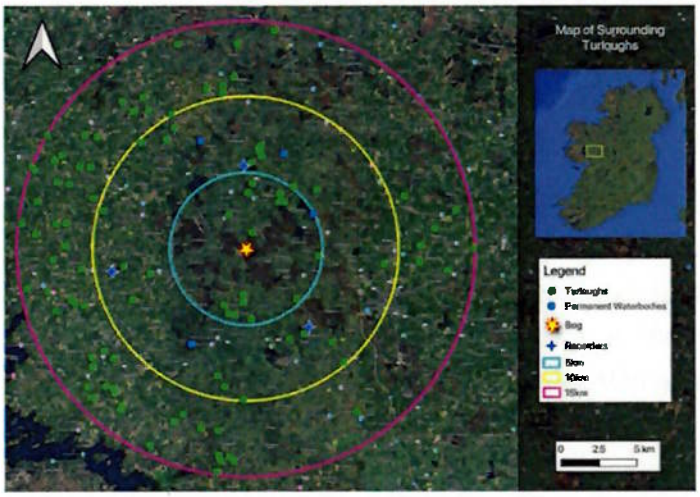


Figure 2.1: Aerial view of Cloonbar bog (location of proposed Shancloon Wind Farm) and the distribution of turloughs (green dots) within 5, 10 and 15km radius of a bird acoustic song meter recorder located at Cloonbar bog. Turlough locations were determined using the Wetlands Map of Ireland. For turloughs not included in the Wetlands Map of Ireland, expert knowledge in conjunction with the BING satellite basemap were employed to complete the database[3].
(https://wetland.maps.arcgis.com/apps/View/index.html?appid=e13b75c3bcab4932b992aa0169aa4a32&extent=-12.6266,51.3236,-3.2168,55.4102). Blue stars represent the positions of Rathbaun (north), Shrule (west) and Belclare (south- east) respectively.
Note: When the footprint of the proposed wind farm is taken into account, Rathbaun, Shrule and Belclare Turloughs are ≤ 5km from the footprint of the proposed Shancloon Wind Farm.

Regular patterns of bird flight directions, foraging distances and roosting behaviour commonly found in permanent waterbodies and for which SNH (NatureScot, 2017)[4] bird survey methodologies were designed, do not apply in a turlough-dense landscape where the availability of flooded turloughs changes frequently. Since the location of the

proposed windfarm is surrounded by turloughs, the direction and frequency with which overwintering birds cross the footprint of the proposed windfarm for foraging or roosting using opportunistic flight paths will vary within and between years depending on which turloughs are flooded or empty at any one time.

Observation: ***No quantification of the density or total area of turloughs within 15km of the proposed wind farm was presented in the EIAR thereby disregarding the complexity of interactions between bird species composition and abundance and turlough flooding patterns.***

Observation: ***No clear description of the emphemeral nature of turloughs and how this can influence the abundance and species richness of over-wintering birds between and within years was given in the EIAR.***

2.2 SNH guidelines used to inform the EIAR

Based on SNH (2016) guidelines[5] which gives the winter core foraging distance for the Greenland White-fronted Goose (Annex I species) as 5-8km, the proposed development was considered to lie outside the foraging ranges of this species which is a Qualifying Interest (QI) for the Lough Corrib SPA (just under 10km west of the proposed development).

However, Schindler et al. (2025)[6] reports a foraging range of 15km (verified by GPS data) for the Greenland White-fronted Goose which means that the proposed development is well within the range of this QI species and must be treated accordingly.

In the EIAR, it is stated that SNH (2017)[4] bird survey guidelines were followed. A close examination of the bird surveying intensity for the proposed Shancloon Windfarm EIAR reveals that the percentage of total hours (day and night) in which bird surveying was undertaken over the three sampling years combined was consistently <6% per month (September – March) for Vantage Point surveys on which Collision Risk Models are based. This figure went as low as 1% of hours in March when there is frequently a particularly high level of bird activity as birds get ready to migrate to their Summer breeding grounds. The 500m Winter Walkover surveys undertaken for the EIAR ranged from no sampling at all in September across the three sampling years to a maximum of just 1.1% of hours in February. Even less was the maximum percentage of hours of sampling for the 6Km Walkover at just 0.8% of sampling hours in February with no sampling undertaken in September for any of the three years although the I-WeBS "non-breeding" survey season (BirdWatch Ireland) runs from September to March each year.

In addition, the accuracy of the SNH recommended Vantage Point Surveys used in this EIAR has recently (2024)[7] been questioned by Dr Tom Gittings (Independent Ecological Consultant since 2001) who has analysed Vantage Point data. He states that detection rates tend to decline with distance from Vantage Points "*...with very low detection rates at distances of more than 1 km from the vantage points.* "

Observation: ***The inappropriateness of simply applying SNH (2017) bird survey guidelines designed for Scotland where turloughs are absent and therefore not considered in the guidelines, were not described in the EIAR. SNH (2017) states that this guidance document is "not prescriptive or able to cater for every possible scenario..." and "..not exhaustive and there may well be occasions where novel or different survey methods are required".***

Observation: ***Bird detections decrease with distance from Vantage Points suggesting that numbers of birds seen flying over the footprint of a proposed development are often underestimated.***

Observation: ***Information given in the SNH guidelines regarding bird foraging ranges which is incorrect is of serious concern if it results in species which are a Qualifying Interest for an SPA being excluded from consideration.***

2.3 Significant knowledge gaps recognised regarding how overwintering birds utilise a turlough-dense landscape

An acknowledgement of the significant knowledge gaps regarding how overwintering waterbirds use turloughs has been recognised by the recent (2025) awarding to the University of Galway of a research grant by Research Ireland. Research Ireland is part of the **Government of Ireland Impact 2030** (Ireland's Research and Innovation Strategy[8]) to position *"research and innovation at the heart of addressing Ireland's.....* ***environmental challenges***." Application for this highly competitive grant was based on almost six years of research by the University of Galway on the turloughs and bogs in the area of the now proposed Shancloon Wind Farm. This culminated in the recognition that a single, dedicated research project was required to start addressing these significant knowledge gaps.

A PhD has commenced (under the joint supervision of myself and Dr Caitríona Carlin, University of Galway) to increase our understanding, in particular, of how two Annex I bird species utilise this ecologically complex region. With the support of NPWS staff and advice and training from the Wildfowl & Wetlands Trust (UK), this winter (2025.26) we will fit Greenland White-fronted Geese and Whooper Swans with GPS collars to measure, in real time, how these birds utilise turloughs in this area over four years. Additional

research using UAVs with thermal cameras and acoustic monitors will also determine general bird species composition and night-time activities on turloughs. Since each bird has species-specific ecological requirements, it is planned that further studies of other red and amber listed bird species in the area will be undertaken in the future. The research objectives align with those of the **Irish National Biodiversity Action Plan**[9]: Objective 4 i.e. "***enhancing the evidence base for biodiversity action***"; the **EU Nature Restoration Law**[10] and **EU Biodiversity Strategy for 2030**[11], emphasising improving species populations such as wetland birds, many of which are currently in decline in Ireland.

Observation: ***Until the results of the above long-term, independent research studies are available, it is not possible, with any degree of confidence, to determine the potential impacts of a wind farm on over-wintering birds in this turlough-dense landscape. Until then, the precautionary principle should, therefore, apply.***

Observation: ***The above independent research is of international significance in that the results will also be of benefit not only to Ireland but to wetland bird researchers and policy makers in the UK, Iceland and Greenland with whom we will be collaborating. A windfarm development in the area during the lifetimes of the above research projects could seriously jeopardise the aims of these studies resulting in reputational damage to Ireland as a place to do biodiversity research.***

2.4 Research at the University of Galway provides evidence of the unsuitability of SNH guidelines for ornithological surveys in this turlough-dense landscape

In conjunction with Point Count surveys, research at the University of Galway has utilised modern ornithological survey methods within and around the area of the proposed windfarm. These methods, recommended as best practice by Bird Survey Guidelines (2025)[12], include the deployment of acoustic monitors and UAVs, neither of which were used to inform the EIAR for Shancloon Wind Farm (Table 2.1).

Table 2.1: A comparison of a selection of appropriate methodologies recommended by the Bird Survey Guidelines (UK) compared with the SNH (2017) methodologies used in the Shancloon Wind Farm EIAR

	Bird Survey Guidelines UK (2025)	**Methodologies used in EIAR based on SNH (2017)**
Nocturnal bird surveys	Recommends that **thermal imaging** be undertaken to quantify how birds are using habitats after dark, particularly for: • Winter waders • Migratory geese • Certain species of owl	**No thermal imaging** undertaken *Note: This technology has been in use for avian studies since the early 2000s*
Passive audio recording	**Passive audio recording** should be considered to identify: • extent of nocturnal migration over site • presence of nocturnal site usage	**No passive audio recording** undertaken. *Note: This technology has been in use for over 10 years in avian studies*

Summaries of University of Galway research within and around the footprint of the proposed Shancloon Wind Farm are given below:

Acoustic monitoring[2,3]:

- The **presence of Annex I Greenland White-fronted Goose** was confirmed within the footprint of the proposed windfarm using acoustic monitoring. This is in contrast with the EIAR which states that this species was not recorded using Vantage Point counts within the development footprint and it was, therefore, **excluded from Collision Risk Modelling**.

- Vocalisation patterns, recorded simultaneously at three turloughs (Fig. 1) to the north (Rathbaun), west (Shrule) and south (Belclare) of the proposed Shancloon Wind Farm, suggest **frequent movement** of Greenland White-fronted Goose between these turloughs, all of which are ≤ 5km from the footprint of the proposed wind farm.

- Patterns of presence/absence of Greenland White-fronted Goose vocalisations at each of the above three turloughs demonstrates considerable **night-time activity** suggesting frequent movement between turloughs at night during which no ornithological surveys for this species were undertaken for the EIAR.

- Analysis of site utilisation by Greenland White-fronted Geese using acoustic monitors shows an increase in the number of sites being used by the species within a single sampling window. In November (2024), Greenland White-fronted Geese were detected exclusively at single sites during sampling windows, with no instances of simultaneous multi-site occupation. By December 2024, the species **exhibited expanded site usage**, with detections spanning two to three sites within individual sampling windows. This pattern intensified further in January 2025, when Greenland White-fronted Geese were detected within single sampling windows across two, three and all four study sites. The progressive increase in multi-site utilisation could suggest resource depletion at individual sites, requiring increased foraging ranges to meet energetic requirements. These apparent changes in behaviour throughout the winter would not have been detected using Vantage Point Count surveys which were used for the EIAR as recommended by SNH guidelines. In addition, a foraging range of 15km would facilitate movement of Greenland White-fronted Geese between Shrule, Belclare, Rathbaun turloughs (all within c. 6.5km to 7.5km of the proposed windfarm and Cloonbar Bog and c. 12-13km apart from each other).

- **Night-time activity** was frequently recorded (Nov. 10th - Dec 9th, 2024) across the four sites (three turloughs and bog within the footprint of the proposed Shancloon Wind Farm) for IUCN red-listed waterbirds such as **Shoveler, Dunlin, Snipe, Curlew, Golden Plover and Lapwing** in addition to nine amber-listed species.

Observation: ***Passive audio recording, a methodology recommended by Bird Survey Guidelines UK (2025) and undertaken by University of Galway, confirms significant gaps in the EIAR data. It also indicates potential risks to Greenland White-fronted Geese crossing the footprint of the proposed wind farm when moving between turloughs at nighttime.***

Observation: ***Potential changing patterns in turlough usage by the Greenland White-fronted Goose as Winter proceeds and night-time activity for other red-listed bird species confirms the complexities of the relationships between overwintering birds and turloughs not presented in the EIAR.***

UAV (Drone) surveys[13]:

- UAV transects across Rathbaun turlough (<5km from the proposed windfarm) recorded greater mean bird abundances with up to **40% more overwintering birds being recorded using a UAV** compared to bird counts similar to those undertaken for the Shancloon Windfarm EIAR. Turloughs, unlike lakes, frequently have stonewalls, hedgerows and scrub running through them, making it difficult to determine accurate bird composition/densities using Point Counts alone (Fig. 2). The 6Km Walkover undertaken for the proposed Shancloon Windfarm with sampling undertaken for ≤ 0.8% of available hours is, therefore, likely a significant **underestimation** of true bird densities within 5km of the proposed development.

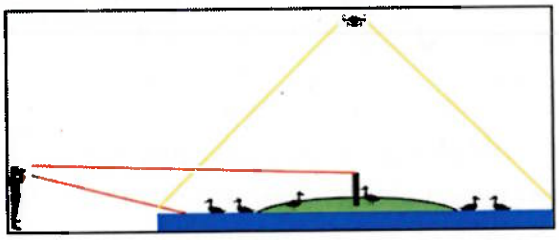


Figure 2: A simplified schematic of the limitations of using Point Counts to determine turlough bird abundances in turloughs in comparison to UAV counts[13].

Observations: ***The underestimation of bird abundances using only bird counts to inform the EIAR demonstrates the absence of robust data to confidently determine the impacts of the proposed development on overwintering birds.***

Turlough water surface area measurements[13]:

A significant positive correlation was detected between bird species richness and flooded area indicating the possibility that the greater the flooded area within a single turlough, the greater over-wintering bird diversity it supports. This study was undertaken at Rathbaun turlough (<5km from footprint of proposed development) where for the first time, turlough water surface area was calculated using a UAV and measured against bird species richness.

Observation: ***Variability in the area of flooding of turloughs surrounding the proposed windfarm at Shancloon at the times of surveying and its potential effects on determinations of bird species composition/abundance was wholly ignored in the EIAR.***

2.5 Absence of evidence is not the same as evidence of absence:

Recent research at the University of Galway analysed 18 years of Vantage Point Count surveys undertaken at a Roscommon turlough within the period November to January (2004-2025)[14]. These surveys were carried out by the same ornithologist making this dataset particularly robust in that the surveyor knows the site intimately and there is no potential for variation in surveyor competency.

Over these 18 years, Greenland White-fronted Goose was not recorded on site during one Winter sampling period on three occasions (2007/2008; 2013/2014 and 2016 /2017); two consecutive winters on one occasion (2009 - 2011) and one instance of four consecutive winters (2018 – 2024) (no sampling took place in 2019.20). The birds returned again to the site last Winter (2024.25) after an absence of up to five years.

Similarly, other red and amber-listed overwintering birds were not recorded on site during one Winter sampling period (on one occasion for Teal, Wigeon, Shoveler, and Dunlin; on two occasions for Lapwing and Golden Plover; on three occasions for Pintail, Black-headed Gull and Mute Swan); on two consecutive Winters – Pintail and Golden Plover (once) and Dunlin (three times).

Observation: ***In turlough-dense regions such as the landscape surrounding the proposed Shancloon Windfarm, bird data collected over three years, as was undertaken for this EIAR, is not sufficient to capture a true picture of overwintering bird species composition and abundance given the variability in turlough flooding patterns. For this reason, these data cannot be used to predict the potential impacts of the proposed windfarm on overwintering birds in the area.***

2.6 Limitations of metadata employed in the EIAR

BirdWatch Ireland's Bird Sensitivity Mapping Tool[15]

In section 10.6.1.2 - Avifauna (p22), it is stated that:

"BirdWatch Ireland's Bird Sensitivity Mapping Tool [....] was utilised to predict the sensitivity of birds to wind farm developments within the 10km grid square M35 that overlaps the site and *"there is no data available for the western portion of the Site".*

Observation: ***It has not been stated explicitly in the EIAR that BirdWatch Ireland's Bird Sensitivity Mapping Tool does not have any data for more than half (56%) of the 16 turloughs situated within 5km of the proposed wind farm site. With more than half the data missing, this cannot be used with confidence to predict the sensitivity of birds in the area to the proposed wind farm.***

Gaps in Irish Wetland Bird Survey (IWeBs) data

Mapping by the University of Galway has demonstrated, for the first time, that there are at least 16 turloughs within 5km of the proposed Shancloon Wind Farm. However, IWeBs annual data referred to in the EIAR, indicate that less than 20% of these 16 turloughs contribute to the national IWeBs dataset within the 5km radius.

Bird counts are the standard method used for the annual national IWeBs bird counts. IWeBs data are referred to extensively in the EIAR to give an indication of bird species composition and abundance in the area surrounding the proposed Shancloon Wind Farm. The underestimation of bird numbers at Rathbaun Turlough using bird counts alone demonstrates that the annual IWeBs data are likely an underestimation of true bird abundances, not only at Rathbaun Turlough but in the turloughs in the area for which IWebs counts are undertaken.

Research undertaken by the University of Galway at Rathbaun Turlough alone which is only one of the 16 turloughs ≤ 5km from the proposed development, has recorded in a single day (2024.25) numbers of birds exceeding the 1% thresholds required to qualify as a site harbouring nationally important populations. This applied not only to Shoveler (up to 3.5 times the 1% threshold), Tufted Duck and Wigeon (as indicated in the EIAR for the North Galway Central Lakes as a whole) but also to Pochard (greater than twice the 1% threshold) and Mallard. We also recorded (2023.24) Shoveler numbers reaching the 1% threshold at Belclare Turlough (5km approx. from the footprint of the proposed development).

Observation: ***Given that no IWeBs data exist for more than 80% of the turloughs within 5km of the proposed Shancloon Wind Farm, these incomplete datasets cannot be taken as a true reflection of bird abundances on which a decision regarding planning permission for a wind farm can be based.***

Observation: ***Data gaps for IWeBs metadata in the area within and immediately surrounding the footprint of the proposed development in combination with the likelihood that existing metadata gathered using bird counts are under-recording, means that these metadata are not a true reflection of overwintering bird species composition and abundances. These meta-data cannot, therefore, be used with confidence to determine potential impacts of the proposed windfarm at Shancloon on overwintering wetland birds in the area.***

2.7 Overview:

Twenty-one species of overwintering wetland birds found within 0-5km of the proposed windfarm at Shancloon are of conservation concern (Table 2.2, below). Of these, 33% are ranked as having the highest conservation concern, many of which are in large decline nationally (Pochard, Lapwing, Golden Plover); moderate decline (Dunlin, Curlew); and intermediate decline (Coot, Mallard, Wigeon, Tufted Duck, Pintail, Great Crested Grebe and Shoveler). In addition, eight of the bird species present which are Qualifying Interests for Lough Corrib SPA (Table 2.2), may well use these turloughs as part of their wider home range particularly during the winter. This is particularly relevant to Gadwall which recent GPS tracking has shown has a foraging range up to 20km (Spencer et al., 2023)[16] and Pochard and Tufted Duck (Gourlay-Larour et al., 2012) which have been shown to fly >10km during the overwintering period making these turloughs well within the foraging range of Lough Corrib SPA. Indeed, any winter wildfowl or waders are likely to be moving through the location to access feeding and roosting sites.

Given the significant gaps in the knowledge (as proven above) regarding how overwintering birds utilise ephemeral waterbodies such as the turloughs in the area of the proposed wind farm, the precautionary principle must apply and the Bord refuse to permit this development on the basis of an inadequate adherence to the regulations of EU EIA Directive 2011/92/EU as amended by 2014/52/EU under Article 3(1) to "....*ensure maintenance of the diversity of species and to maintain the reproductive capacity of the ecosystem as a basic resource for life*".

Table 2.2: IUCN listed waterbirds found within 0 - 5km of the proposed Shancloon Wind Farm *(Red listed species of high conservation risk (in red); Amber listed species of medium conservation concern (in yellow)* (Gilbert et al., 2021)). QI = Qualifying Interests

Group	*Latin Name*	Common Name	Lough Corrib SPA QI
Ducks	*Anas acuta*	Pintail	-
	Anas crecca	Teal	-
	Anas platyrhynchos	Mallard	-
	Aythya ferina	Pochard	Yes
	Aythya fuligula	Tufted Duck	Yes
	Mareca penelope	Wigeon	-
	Mareca strepera	Gadwall	Yes
	Spatula clypeata	Shoveller	Yes
Waders	*Calidris alpina*	Dunlin	-
	Gallinago gallinago	Snipe	-
	Numenius arquata	Curlew	-
	Pluvialis apricaria	Golden Plover	Yes
	Vanellus vanellus	Lapwing	-
Geese	*Anser albifrons flavirostris*	Greenland White-fronted Geese	Yes
	Anser anser	Greylag Goose	-
Grebes	*Podiceps cristatus*	Great Crested Grebe	-
Swans	*Cygnus cygnus*	Whooper Swan	-
	Cygnus olor	Mute Swan	-
Gulls	*Chroicephalus ridibundus*	Black-headed Gull	Yes
	Larus fuscus	Lesser Black backed Gull	-
Rails	*Fulica atra*	Coot	Yes

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Chapter 4 Peatlands

Author: Professor Mike Gormally

3. Raised Bog

Almost half (five) of the proposed wind turbines for Shancloon Windfarm are planned to be situated on three bogs (Cloonteen-Cloonbar-Toberroe Complex; Cloonsheen Shancloon; and Beagh More North) which, because of their complex hydrological processes, are particularly sensitive to large developments. When degraded by developments such as the installation of wind turbines, raised bogs will emit carbon due to the decomposition of dry peat, switching from being a carbon sink to a carbon source. The viable long-term alternative for these bogs is to rewet them, thereby restoring Sphagnum-rich, actively peat-forming bog (Wilson et al., 2022)[1]. Interference with the peat on the surface or at any depth will further damage a valuable recovering wetland system. Ireland hosts more than half of the Atlantic sub-type of raised bog that remains in Europe and as such is obliged under EU law to prioritise their conservation.

3.1 Conservation value of Cloonbar Bog "surprisingly high"

An ecological survey[2] of just over 33% of one of the bogs on which three wind turbines are proposed to be placed (i.e. Cloonbar Bog), was undertaken in 2024 by peatland expert ecologist Dr George Smith. Dr Smith has worked on raised bogs for many years and is author of the books "The Habitats of Cutover Raised Bog[3]" and "Best Practice Guidance for Habitat Survey and Mapping[4]", the former of which is referred to in the EIAR for its assessment of the ecological value of the bog.

The EIAR concludes that: "*it is **not likely that rehabilitation** could be achieved within 30 years*".

The above statement contrasts sharply with Dr Smith's comments wherein he describes the conservation value of Cloonbar Bog as:

"***surprisingly high***" and that "*a **plan for restoring** the high bog and cutover bog should be prepared...informed by the necessary hydrological, topographical and drainage surveys*".

A summary of Dr Smith's report on Cloonbar Bog documents that:

- A total of 5.8 ha of priority **Annex I 'active raised bog** (*7110)' occurs on site, of which 0.3 ha is central ecotope, the **highest quality raised bog habitat**.
- There is **more 'active raised bog** (*7110)' in the area of Cloonbar Bog surveyed (circa 33%) **than in 10 of 48 existing Special Areas of Conservation** (SACs) in Ireland where 'active raised bog (*7110)' is a qualifying interest.
- Cloonbar bog is notable as one of **the most westerly raised bogs in Ireland** and its **distinctive western raised bog flora** increases its conservation value.

- A **full suite of typical species** is present, including some that are **uncommon indicators of quality**, such as *Sphagnum austinii* (Near Threatened in Europe) and *Sphagnum beothuk*.
- A **plan for restoring** the high bog and cutover bog **should be prepared**. This should be informed by the necessary hydrological, topographical and drainage surveys.
- **Additional survey work** should be undertaken to map further areas of active raised bog (*7110), including on old cutover bog.

Observation: The conclusion in the EIAR indicating it unlikely that restoration could be achieved within 30 years contrasts sharply with Dr Smith's expert opinion that a restoration plan be prepared on the basis that there is more Annex 1 Active Raised Bog (*7110) present than in 20% of Special Areas of Conservation in Ireland where Active Raised Bog (*7110)' is a qualifying interest.

3.2 Bogs in and surrounding the proposed wind farm not yet surveyed by a national agency

None of the three bogs on which wind turbines are proposed (Figure 3.1) have yet been fully evaluated by a national agency (Table 3.1). In the absence of ecological and hydrological surveys by independent national agencies to determine the conservation value of the bogs, it is not possible to determine the impacts of the proposed wind farm even if only part of the bog is developed. This is because raised bogs function as **single hydrological units** that are interdependent and water loss can occur laterally through the peat impacting anaerobic conditions necessary for peat formation as well as leading to biodiversity loss and increased carbon emissions.

Observation: Independent national agency evaluation of bogs within and surrounding the proposed wind farm required to determine conservation value.

Figure 3.1: Location of bogs in and around the proposed wind farm at Shancloon adapted from Wetland Surveys Ireland's *Map of Irish Wetlands* (MIW Intro — Wetland Surveys) where 1a in red outline indicates the area surveyed by Smith (2024)[2] - see Table 3.1 for further details. Black dots indicate approximate location of five of the eleven turbines located on bog (see Shancloon Wind Farm EIAR)

Table 3.1: Current survey status of bogs in and surrounding the proposed wind farm at Shancloon taken from Wetland Surveys Ireland's *Map of Irish Wetlands* (MIW)* (bogs highlighted in orange represent bogs on which wind turbines are proposed)

Site Number	Site Name	Site Code	County	MIW Area (ha)	Site Evaluation
1a & 1b	Cloonteen Cloonbar Toberroe Cutover Complex *Proposed location for Wind Turbines 7, 10 & 11*	WMI_GA559	Galway	321.68	Nationally Important 1a Dr George Smith Report[2] covers just over 33% (approx.) of the area
2	Cloonsheen Shancloon Bog & Cutover *Proposed location for Wind Turbine 1*	WMI_GA562	Galway	Not given	Unknown value Survey required
3	*Beagh More North Cutover* *Proposed location for Wind Turbine 5*	MIW_GA566	Galway	Not given	Unknown value Survey required
4	Cloonglasha Beagh More Cutover Complex South-east of proposed Shancloon Wind Farm	MIW_GA563	Galway	Not given	Unknown value Survey required
5	Beagh Cloonmweelaun Cloonaglasha Cutover Complex North-east of proposed Shancloon Wind Farm	MIW_GA558	Galway	Not given	Unknown value Survey required

*http://www.wetlandsurveysireland.com/wetlands/map-of-irish-wetlands--/map-of-irish-wetlands---map/

3.3 European Law and Peatlands

Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on **Nature Restoration** and amending Regulation (EU) 2022/869 (http://data.europa.eu/eli/reg/2024/1991/oj), states that Regulation (EU) 2023/839:

*" ...emphasises the need for the protection and enhancement **of nature-based carbon removals**, for the improvement of the resilience of ecosystems to climate change, for the restoration of degraded land and ecosystems, and for **rewetting peatlands**"*

Under Article 11 of EU 2024/1991 (**Nature Restoration**), it states:

- *"Restoration measures that consist in **rewetting peatland**, including the water levels to be achieved, shall contribute to **reducing greenhouse gas** net emissions and increasing biodiversity..."*

- *"Member States shall, as appropriate, **incentivise rewetting** to make it an attractive option for farmers and private landowners..."*

- Member States shall put in place measures to: ***"Restore** organic soils in **drained peatlands** on at least **50% of such areas by 2050**".*

Observation: This Regulation is primarily for the mitigation of climate change and its impacts, since wetlands such as bogs sequester carbon and manage water flow, preventing floods. To place wind turbines on these three bogs is contrary to this Regulation, essentially preventing their restoration within the timescale of the Regulation targets. This would prevent any chance of the bogs being restored to mitigate climate change on a permanent basis in addition to destroying the range of ecosystem services they provide.

3.4 The Ecosystem Functions of Raised Bogs:

Active Raised Bog is a **priority habitat** listed under Annex I of the EU Habitats Directive (92/43/EEC) – "active raised bog (*7110)". Priority habitats are considered to be in **danger of disappearing** within the EU territory and as such member states have a **special obligation to protect** them. Objectives of the EU Directive also align with the **restoration of non-protected bogs** and are not limited to SACs.

Peatlands perform key ecological functions on which humans are dependent. Although peatlands only cover approximately 3% of Earth's land[5], they store up to 33% of the earth's terrestrial organic **carbon** – up to twice as much carbon as all the world's forests (including tropical rainforests) combined. Under natural wet conditions, raised bogs

contribute to long term **climate stabilisation** by emitting less greenhouse gases than other ecosystems. They also **regulate water** by absorbing water which is released gradually (thereby reducing risk of flooding) as well as playing a significant role in the recharging of groundwater. Raised bogs support unique habitats which are home to specialised plant and animal species, thereby contributing to **regional and global biodiversity**. The slow decomposition of organic matter which occurs in raised bogs prevents the excessive runoff of nutrients into rivers and lakes, thereby playing a critical role in **nutrient cycling**. Educational, recreational and cultural services are also provided by raised bogs, including the bogs on which wind turbines are to be placed for the proposed Shancloon Wind Farm.

Active and restored raised bogs contribute directly to **permanent climate mitigation** and biodiversity benefits through **long-term storage of carbon**. Wind turbines on raised bog also come with complex **ecological risks** such as the release of carbon, loss of biodiversity, peat instability and long-term degradation of ecosystem services. At sites such as those described above where raised bog conservation and restoration are not only possible but recommended by an independent peatland expert, ecological restoration should be the priority.

The **survey, protection and restoration** of the raised bogs selected for the proposed Shancloon Wind Farm is supported by the following national and local Climate Action and Heritage / Biodiversity Action Plans:

National Energy & Climate Plan 2021-2030

"Undertake further research to assess the potential to sequester, store and reduce emissions of carbon through the management, ***restoration and rehabilitation of peatlands****".*

National Biodiversity Action Plan 2023–2030

"Minimize the impact of climate change [....] through ***nature-based solutions*** *and/or ecosystem-based approaches."* Target 8 (Kunming-Montreal Global Biodiversity Framework)

Galway County Climate Action Plan (2024-2029)

"Identify priority areas [.....] for ***habitat restoration****, enhancement for wildlife and protection for* ***carbon and biodiversity*** *benefits".* Action LN2.1

"Carry out ecological/habitat surveys and highlight areas at risk (as well as areas which are thriving or ***providing sequestration services****) and those suitable for restoration and* ***enhanced carbon storage****."* Action LN2.2

Galway County Heritage Plan 2024-2030

*"Support the **assessment, protection and restoration** of Annex 1 Priority habitats **outside designated sites** to inform planning decisions".* Action BD3.5

Observation: National and local Climate/Heritage/Biodiversity plans strongly support the restoration of the bogs in and surrounding the proposed Shancloon Wind Farm primarily as a long-term solution to carbon sequestration along with benefits for biodiversity and other ecosystem services. The installation of a wind farm on these bogs is incompatible with these action plans.

References

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4. Smith, G F, O'Donoghue, P, O'Hora, K and Delaney, E (2011) Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council.
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Chapter 5 Marsh Fritillary

Author: Professor Mike Gormally

Invertebrates:

4.1 Marsh Fritillary – Protected under Annex II of the Habitats Directive

Marsh Fritillary Ecological Requirements

The Marsh Fritillary butterfly functions as a **metapopulation** where rather than having one large population at a single site, it survives by having many small, connected colonies where the foodplant of the caterpillar (Devil's-bit Scabious) is found. In addition, a characteristic of the Marsh Fritillary butterfly is that its population undergoes extreme **cyclical fluctuations** (NPWS)[1].

To ensure the local survival of the species, habitat creation must include **networks of habitat patches** that are close enough to facilitate butterfly movement between them[2]. It is suggested that clusters of patches up to a 2 km radius from known populations are required to maintain a viable metapopulation[3].

4.2 Marsh Fritillary records at the site of the proposed wind farm incomplete

In section 9.5.5.1of the EIAR, it is stated that:

"As part of ecological walkover assessments for the Proposed Development, the habitats within the Site were assessed for suitability to support Marsh Fritillary"

Observation: *Describing the survey for Marsh Fritillary as an "ecological walkover" does not provide sufficient detail of sampling intensity. It is, therefore, not possible to determine the quality of the baseline data used to predict potential impacts of the proposed wind farm on an Annex II protected species.*

In section 9.5.5 of the EIAR, it is also stated that only "*Habitats which were determined to be potentially suitable or habitats in good condition to support Marsh Fritillary (as per the habitat condition form) were subjected to dedicated Marsh Fritillary larval web searches..*"

And

In Figure 9.6, only two areas in the south-west of the proposed development are presented as "Marsh Fritillary Survey Areas".

Observation: *The larval food plant of the Marsh Fritillary (Devil's-bit Scabious) is found growing in many areas of the footprint of the proposed wind farm. Therefore, a map of all these areas with an NDBC Marsh Fritillary Habitat Condition Assessment*

for each area is required. This will provide proof that habitat surveying was done according to best practice.

In addition, the provision of a map of the locations and habitat condition of Devil's-bit Scabious sites within 2km of the footprint of the proposed windfarm is particularly important given the reliance of the species on networks of potential habitat patches[3].

In Table 9-11, it is stated that "*no larval webs were recorded during dedicated marsh fritillary surveys*" which only took place on one day i.e. "on 31st August 2022".

Observation: ***It is of serious concern that a search for larval webs took place on just a single day at the end of August in only one calendar year. This excludes finding later hatching colonies which might not be visible until mid-September or in other years with different weather conditions. Neither does it allow for the known cyclical fluctuations in populations of the butterfly. This level of sampling is not sufficient to determine the presence of Marsh Fritillary and therefore, it is impossible, on this basis, to make predictions regarding the impacts of the proposed wind farm on this Annex II species.***

In section 2.8, it is stated that: "*the lands within the proposed Shancloon Wind farm were not found to contain areas of suitable habitat for Marsh Fritillary.*"

Observation: I have frequently recorded Marsh Fritillary butterflies along the north-eastern and south-western boundaries of the footprint near Turbine 9 which is situated towards the north-eastern end of the proposed wind farm. A quick survey using 10 standard 1m² quadrats (as recommended by the NBDC Marsh Fritillary Habitat Condition Form) revealed that eight supported > 10 Succisa pratensis plants (Category C) with the other two quadrats supporting seven plants each (Category B). Categories B and C are one of the indicators of Good Condition Habitat.

Observation: ***Best practice[4] recommends that "In combination with a larval web survey; a survey of adult butterflies should also take place between May and July, as this can aid identification of web locations. Adult butterflies only fly in warm, sunny conditions, so visits should only be undertaken in favourable weather conditions between 10.30 and 16.30. The presence of adults confirms that there is a marsh fritillary colony in the area".***

Observation: ***Based on the above best practice[4], a detailed table indicating the dates and times of the adult butterfly surveys and the weather conditions on each day of the survey is required along with Marsh Fritillary abundances in addition to a map indicating the areas surveyed.***

Observation: ***It is of serious concern that no record of Marsh Fritillary in these areas has been documented within the footprint of the proposed wind farm in the EIAR although Marsh Fritillary is present as evidenced by my observations close to proposed Turbine 9.***

9.7.6 states that: "*Two locations within the Site were assessed through habitat walkover survey as having potential to support Marsh Fritillary: the wet grassland near T2 and the patches of Devils-bit scabious along the turbary road adjacent to cutover bog at Cloonbar Bog.*"

Observation: There are many "turbary roads" at Cloonbar Bog, so it is not possible to determine from the above statement where these "patches of Devil's-bit scabious" are.

Observation: ***The absence of EIAR records of Marsh Fritillary close to Turbine 9 suggests that sampling intensity for the species was inadequate.***

Observation: The Marsh Fritillary butterflies recorded by me on the north-eastern and southwestern edges of the windfarm boundary will be separated by a road and Turbine 9 should the development proceed. This increases the risk of creating a barrier (caused by the turbine, the road and potential loss of habitat) between these two populations of Marsh Fritillary. In addition, mitigation measures regarding potential changes to microclimatic conditions caused by turbine-induced air turbulence need to be addressed given the sensitivity of Marsh Fritillary especially during overwintering in webs close to the ground. This is of particular concern to the population on the north-eastern boundary given the prevailing south-westerly winds at the site.

In Table 9.11 – "Ecological Receptors", it is stated with reference to Marsh Fritillary that: "*No areas identified as providing suitable habitat for this species are located within the red line boundary*" and, on that basis, the Marsh Fritillary has been excluded as a Key Ecological Receptor.

Observation: ***Given that I have recorded Marsh Fritillary along the north-eastern and south-western boundaries of the footprint of the proposed development at Turbine 9, the exclusion in the EIAR of Marsh Fritillary as a Key Ecological Receptor does not apply.***

4.3 Biodiversity Enhancement and Management Plan (BEMP)

9.9.4.4 states that: "*a proposed peat storage area will be actively managed for habitat enhancement for Marsh Fritillary*". Fig. 9.4a shows that the location of the proposed habitat enhancement for Marsh Fritillary is located towards the south-west of the site near Turbines 3 and 4.

Observation: ***Only two immediately adjacent areas are set aside for habitat development for the Marsh Fritillary in the south-western end of the wind farm close to Turbines 3 and 4. There is, however, no indication of the locations of the required habitat patches within a 2km radius of this site to ensure the survival of the population.***

To guarantee the success of the "newly created sites", an intensive survey of the surrounding area is required to provide evidence on a map that there are an adequate number of patches within the footprint of the proposed windfarm to support this Annex II species. In addition, landowner agreements to manage these patches for the Marsh Fritillary need to be provided as evidence of good intent for the lifetime of the wind farm. Details of the locations of supporting corridors between habitat patches to improve connectivity also need to be provided on a map.

Observation: ***The locations where Marsh Fritillary is found near Turbine 9 (documented by me) are > 2km from the proposed "newly created site" and therefore, too far away to act as one of the required habitat patches. A conservation plan for the north-eastern end of the wind farm ensuring sufficient habitat patches with supporting corridors (inside the footprint and within 2km of the footprint) would, therefore, need to be considered to support the conservation of this Annex II species.***

4.4 Conclusion:

Based on inadequate surveying where locations of the Annex II Marsh Fritillary butterfly were overlooked and a poorly considered Biodiversity and Habitat Enhancement Plan, the potential impacts of the Shancloon Wind Farm, particularly the associated drainage and road infrastructure cannot be determined with any confidence. In addition, the

exclusion of the Marsh Fritillary as an Ecological Receptor on the basis of inadequate sampling is of serious concern, particularly for an Annex II species.

Note that NRA (TTI)[5] guidance recommends a precautionary approach with regard to marsh fritillary because *"...due to the sometimes ephemeral nature of their sub-populations, their absence from otherwise suitable sites in the vicinity of existing populations in a given year cannot rule-out the use of the area in subsequent seasons. As such, suitable but currently unoccupied habitat near to existing populations should also be considered of value, as these habitats may be critical to the long-term survival of the population."*

References:

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4. NIEA (2017) Marsh Fritillary Butterfly Surveys NIEA Specific Requirements
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Chapter 6 Commonage

Author: Professor Mike Gormally

5 Cloonbar East Wetland (Commonage)

1.1 Vegetation Sampling

Sampling season

67% of the vegetation surveys took place in September, October and January (i.e. outside the active growing season) and no vegetation sampling was undertaken in July and August, the peak flowering time for most plant species. This means that some of the less common plant species and many of their pollinators will have been missed.

The statement in Table 9-11 (Ecological Receptors) that the site *"is of limited use to pollinators"* cannot be substantiated when no visits to the site took place when pollinators are most active. An example that shows up these poor sampling methods that refutes the above statement is the recording of the **Moss Carder Bee** (*Bombus muscorum)* which is **Near Threatened** in the Irish Red List of Bees by an ecologist in 2023 on East Cloonbar Wetland. Only a comprehensive survey mid-season would provide evidence to evaluate the site, which is clearly not of 'limited use to pollinators'.

Observation: ***Vegetation sampling season inadequate to fully determine the ecological value (including plants and pollinators) at the site.***

Sampling intensity

No indication is given in the EIAR of the location, size and number of quadrats undertaken for the vegetation survey nor are the names of surveyors supplied, as they are in the ornithology section.

Volume 2 Chapter 9 Biodiversity 9.5.4.1 simply states:

"Vegetation was sampled by taking botanical quadrats/relevés which were undertaken to analyse potential links with Annex I habitat types."

Observation: ***Noting the location, size and number of each quadrat is essential in a survey to fully assess whether it adequately represents the vegetation in/around each site.***

Best practice for habitat surveys

9.5.4.1 states: "*The DAFOR scale was used to record species abundance within relevés: Dominant, Abundant, Frequent, Occasional and Rare (DAFOR).*"

The Heritage Council's *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al. 2011)[1] was cited in the EIAR as the methodology used for botanical surveys, yet Smith et al. (2011)[1] explicitly state: "*The relative abundance of different plant species, including bryophytes, should be recorded in quadrats.* ***Recording species presence or using the DAFOR scale is generally inadequate***". *"In Ireland, the most commonly used [...] is the Domin scale."*

Observation: ***Smith et al. (2011)[1] cited as the methodology used for botanical surveys was incorrectly applied and instead an inadequate method was used.***

Plant species list

Almost 90% of the plant species recorded on Cloonbar East Wetland during preliminary surveys (Table 1) undertaken by plant experts in July 2023 and October 2023, were **not recorded in the EIAR/AA/NIS** for the proposed windfarm at Shancloon.

The plant experts who undertook these surveys included:

Dr Micheline Sheehy Skeffington, Ireland (Past President of the Botanical Society of Britain and Ireland) and **Dr Steven Sylvester**, UK (Plant Taxonomist and Ecologist), both experienced field botanists who visited the area along with Professor Mike Gormally.

Observation: ***Inadequate vegetation sampling has led to key plant species which inform habitat types not being documented.***

Presence of notable plant species

Gentianella_amarella subsp. *hibernica* (Autumn Gentian), a **Near Threatened, Red Listed** species of international significance (Jackson et al, 2016)[2], is present on the site (Table 1) but was not noted in the EIAR, Appropriate Assessment or Natura Impact Statement.

Observation: ***Inadequate vegetation sampling has led to an important Near Threatened plant species being overlooked.***

1.2 Geological formation

The presence of an esker running primarily along the north-eastern boundary of the Cloonbar East Wetland was not recorded in the Shancloon Wind Farm EIAR. County Galway hosts some of the most westerly eskers in Ireland. They often act as refuges for species-rich grasslands and an attendant invertebrate fauna (Hennessy et al. 2010)[3]. In addition, they often support dry calcareous grasslands GS1 with links to Annex 1 habitats (Fossitt 2000)[4].

Observation: ***From the maps provided in the EIAR, it would appear that much of this esker will be removed to facilitate the floated access road and turning head. The impacts of the proposed development on the function of the esker as an ecological corridor, natural aquifer with biodiversity value cannot, therefore, be determined with confidence given that the esker was not recorded in the EIAR as being present on the site.***

1.3 Habitat Classification

Cloonbar East Wetland (also referred to as "the Commonage") is described in its entirety in the EIAR as a "*Dry-Humid Acid Grassland GS3*" (Fossitt, 2000)[4].

This is incorrect as even a walkover survey of Cloonbar East Wetland will reveal that there are, in fact, a range of habitats present including Dry calcareous and neutral grassland (GS1), Rich Fen & Flush (PF1) and Wet Heath (HH3). None of these habitats are mapped in the EIAR.

Further investigations of these habitats by Drs Micheline Sheehy Skeffington, Steven Sylvester and Professor Mike Gormally reveal a range of plant species present on the site (Table 5.1) that were not documented in the EIAR. Indeed, the site contains at least three potential EU Annex I Habitats which were not referred to in the EIAR/NIS/AA.

These include (Table 5.1)[5]:

1. FE2B – *Carex limosa – Menyanthes trifoliata*

Examples of this community may correspond with **EU HD Annex I habitat 7140 Transition Mires**

2. GL3A – *Briza media – Thymus polytrichus* Grassland

Very species-rich grassland with most examples corresponding with the **priority EU HD Annex I habitat Orchid-rich calcareous grassland***. In addition, it supports populations of rare orchids such as *Gymnadenia conopsea*, a rare orchid present on the

site, important for a range of pollinators. The site also contains the Near Threatened species *Gentianella amarella subsp. hibernica*.

3. HE4E- *Molinea caerulea – Calluna vulgaris – Erica tetralix*

Heath community which may qualify as **EU HD Annex I habitat Wet Heath**

Several of the species recorded (Table 1) are indicators of relatively intact wetland (e.g. *Parnassia palustris* and *Selaginella selaginoides*) and thus vulnerable, or species of species-rich heathland (*Antennaria dioica*) and are declining across Ireland and Britain (Stroh et al. 2023)[6].

Table 5.1: Plant species recorded at Cloonbar East Wetlands by Drs Sheehy Skeffington, Sylvester and Gormally indicating the presence of potential EU Annex I habitats (Codes are Irish Vegetation Classification (IVC) codes[5].

Plant Species List	**FE3A** *Carex nigra – Ranunculus flammula* fen	**FE2B** *Carex limosa-Menyanthes trifoliata* mire	**GL3A** *Briza media – Thymus polytrichus* grassland	**HE4E** *Molinea caerulea – Calluna vulgaris – Erica tetralix* heath
Achillea_millefolium			+	
Anagallis_tenella		+	+	
Antennaria dioica			+	
Bellis perennis			+	
Calluna_vulgaris				+
Carex_panicea	+	+	+	
Cirsium_dissectum	+			
Crepis_capillaris			+	
Comarum palustre		+		
Erica_tetralix				+
Euphrasia_officinalis_agg			+	
Gentianella_amarella subsp. hibernica			+	
Gymnadenia conopsea			+	
Hydrocotyle_vulgaris	+	+		
Hypochaeris_radicata			+	
Juncus_articulatus	+	+		
Linum_catharticum			+	

Lotus_corniculatus			+	
Mentha_aquatica	+	+		
Menyanthes_trifoliata		+		
Molinia_caerulea	+			+
Narthecium_ossifragum				+
Parnassia_palustris	+			
Plantago_lanceolata			+	
Polygala_vulgaris			+	
Potentilla anserina	+		+	
Potentilla_erecta				+
Prunella_vulgaris			+	
Ranunculus_flammula	+			
Selaginella selaginoides	+			
Succisa_pratensis	+		+	+
Trifolium_pratense	+		+	
Triglochin_palustre	+			
Viola_riviniana_reichenbachiana			+	

Other plant species recorded: *Alchemilla filicaulis subsp. vestita; Callitriche stagnalis; Callitriche hermaphroditica; Cerastium fontanum; Eleogiton fluitans; Hypericum humifusum; Isolepis setacea; Pinguicula vulgaris; Potamogeton_polygonifolius; Ranunculus acris; Ranunculus hederaceus; Ranunculus trichophyllus; Silene flos-cuculi.*

Observation 1: The outcome of poor practice with regard to vegetation sampling resulted in *Cloonbar East Wetland not being selected as a KER (Key Ecological Receptor) in Table 9-12 (Habitats Occurring Within the Proposed Development Boundary). As a result, the potential effects of the development on this site are not discussed in the subsequent tables (Assessment of effects on....).*

Observation 2: *The impacts of the floated access road and turning head on each the potential EU Annex I habitats at Cloonbar East Wetland (Table 1) need to be presented in detail. Potential impacts include: disruption of natural water flow, altered hydroperiods (threatening functional integrity), erosion, direct habitat loss, barrier effects as well as long-term effects such as chronic hydrological stress, restoration challenges and elevated human presence in a sensitive area.*

Observation 3: *Based on the diversity of habitats on the site, some of them potentially EU Annex I Habitats, the building of the proposed floated access road and turning head would result in irreversible damage to the ecological and hydrological integrity of this site.*

1.4 Do Nothing Scenario

Under the "Do Nothing Scenario (9.9.1), it is stated that "*The Cloonbar East Wetland would likely continue to be heavily grazed and as such would be unlikely to evolve successionally*".

It is unclear what is meant by 'evolving successionally'. In addition, no mention is made of the possibility of the commonage shareholders becoming part of an agri-environmental scheme which would protect and support the EU Annex I habitats at Cloonbar East Wetland.

1.5 Action Plans

The survey, protection and restoration of the above species and habitats in Cloonbar East Wetland is supported by:

Galway County Heritage Plan (2024-2030) which states under Action BD3.5:

"Support the assessment, protection and restoration of Annex 1 Priority habitats outside designated sites to inform planning decisions".

Galway County Climate Action Plan (2024-2029) which states under Action LN2.1:

"Identify priority areas appropriate to receiving environment for habitat restoration, enhancement for wildlife and protection for carbon and biodiversity benefits".

1.6 Overview

The inaccurate botanical assessment of Cloonbar East Wetland, as a whole, provides no substantive evidence on which the potential impacts of the proposed development can be evaluated with any rigour. Therefore, this is not fit for the purpose intended i.e. in allowing a full and robust assessment of the likely significant effects of the proposed development on the receiving environment of Cloonbar East Wetland direct or indirect, or in combination with other effects. The criteria for evaluation of what must be assessed and considered are set out in the criteria of projects falling under the remit of the EU EIA Directive 2011/92/EU as amended by 2014/52/EU under Article 3(1). Yet these have not been followed.

References:

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6. Stroh, P.A., Walker K.J, Humphrey T.A., Prescott O.L. & Burkmar, R.J. 2023. *Plant Atlas 2020*, Botanical Society of Britain and Ireland, Durham.

Chapter 7 Bats

Author : Seamus Roche

Introduction

Bats are Annex IV species protected under Article 12 of Directive 92/43/EEC and its Irish transposition. Granting consent must be predicated on convincing evidence that deliberate disturbance and deterioration, or destruction of resting places will not occur, or that a derogation route is properly demonstrated. In addition to collision risk, the project involves extensive habitat loss, including removal of peatland and associated linear features that provide critical commuting and foraging corridors for bats. On the documents before the Board, the bat assessment is not reliable enough to support consent without significant further information and enforceable conditions.

Survey Coverage and Sufficiency

The developer undertook multiyear surveys (2020, 2021, 2023, with 2024 PRF checks), including roost work, transects and static detectors. However, the per turbine seasonal compliance required to validate risk is not demonstrated in the visible material. The report itself acknowledges detector failures and redeployments (e.g. autumn 2020 S.05/S.07/S.11; spring 2021 D.01/D.02/D.08) and while "2023 reflects the layout", the documents provided do not present a complete per turbine ≥10 weather compliant nights table across spring, summer and autumn. With absence of that proof, there remains a material risk that turbine specific risk is underestimated.

Further, the report does not state microphone heights for ground units nor the exact elevations of "at height" monitoring in 2023, contrary to modern reporting practice under BCT 2023. This is significant because Leisler's bat, a highflying, high-risk species of international importance in Ireland, may be under sampled in the collision risk zone if at height data are not robustly presented.

Roosts and Article 12 Risks

Within the site, the developer reports confirmed roosts, brown longeared/common pipistrelle use at F1, soprano pipistrelle potential maternity at F2 and a Leisler's transitional and soprano satellite roost at F3. While the EIAR proposes ECoW supervision and a "24 hour leave in situ" approach for felling low potential trees, these procedural steps do not demonstrate avoidance of Article 12 offences where confirmed roosts or significant Potential Roost Features (PRFs) could be affected during construction or operation, nor do they set out a derogation plan if roost places must be altered. NPWS guidance requires a clear, legally robust pathway showing how offences are avoided or, where necessary, licensed.
https://www.npws.ie/sites/default/files/files/article-12-guidance-final.pdf

Species at Elevated Risk (Leisler's; Nathusius')

The site records Leisler's bat activity and a transitional roost (F3). Leisler's is widely recognised as highly vulnerable at onshore wind due to flight behavior. Nathusius' pipistrelle, recorded sporadically on transects is migratory, with growing European evidence for coastal/offshore migration corridors. Both species demand robust autumn

focused curtailment and importantly, at height sampling clarity to ensure risk is adequately managed.

Curtailment Lack Of Enforceable Precision

The EIAR acknowledges that most bat activity occurs <5.5 m/s wind speed and references 5.5 m/s as a recommended mitigation threshold. It proposes blanket curtailment across April–October, 30 minutes before sunset to 30 minutes after sunrise under "optimal bat activity" weather. The EIAR (chapter 8) confirms that the current cut-in speed is 3 m/s at hub height, equivalent to 2.1 m/s at 10 m height. This is substantially below the threshold at which most bat activity occurs, as the developer's own data show activity concentrated at wind speeds <5.5 m/s. International evidence demonstrates that raising cut-in speed from ~3 m/s to ≥5.0–5.5 m/s can reduce fatalities by over 60%. Therefore, any mitigation plan must specify a numeric uplift from the current 3 m/s baseline to ≥5.5 m/s, tied to enforceable seasonal and weather triggers.

Post Construction Monitoring and Adaptivity

The proposed monitoring framework of continuous turbine level acoustic surveys and carcass searches for the first three years, followed by periodic reviews is a good starting point. However, the plan does not explain how key biases will be corrected, such as searcher efficiency and carcass persistence, nor does it specify which statistical estimators will be used to calculate mortality rates. Without these details, the results could underestimate fatalities and delay adaptive responses.

Cumulative Impacts

The EIAR does not include a bat specific cumulative assessment, even though the proposed Laurclavagh Wind Farm lies within 10 km of Shancloon. NatureScot guidance requires cumulative analysis within this distance because overlapping operational periods can significantly increase collision risk. Without this assessment, population level impacts may be underestimated. A full cumulative bat risk analysis covering Laurclavagh and any other nearby wind farms should be provided.

Risks From Habitat Loss

The proposed development will remove large areas of peat bog and cutover bog, with an estimated 100,000 m^3 of peat excavated and stored on site. These habitats are not only carbon sinks but also critical for bats, particularly Leisler's bat and pipistrelle species, which rely on bog margins, drains and associated tree lines for commuting and foraging. The EIAR acknowledges that turbine locations and access roads will fragment these linear features, while vegetation clearance for felling buffers will eliminate insect rich zones that sustain bat prey.

Loss of bog habitat and hydrological alteration will reduce insect abundance and disrupt flight corridors, forcing bats to cross more open areas where turbines are

concentrated, increasing collision risk. For high flying species such as Leisler's, which already show strong site activity and a confirmed transitional roost (F3), this combination of habitat removal and turbine exposure is particularly hazardous. The EIAR does not quantify these indirect effects or propose mitigation beyond generic hedgerow planting, which cannot replicate the ecological function of intact peatland systems.

Conclusions

The Shancloon Wind Farm poses an unacceptable level of risk to bat populations. Beyond collision hazards, the project will obliterate critical peatland habitats, removing natural commuting corridors and insect rich foraging zones that sustain species such as Leisler's bat and pipistrelles. With 100,000 m^3 of peat slated for excavation, the ecological structure of the site will be permanently altered, forcing bats into open, turbine dense areas where mortality risk is highest.

The EIAR fails to quantify these indirect impacts or demonstrate compliance with Article 12 of the Habitats Directive, which demands strict protection of Annex IV species and their resting places.

In short, this development will fragment habitats, increase collision risk and undermine bat conservation obligations at a landscape scale. The Board should refuse permission or, at minimum, require a comprehensive redesign and enforceable mitigation regime that addresses habitat connectivity, curtailment and post-construction monitoring to the highest international standards.

Chapter 8 Scoping and Consultation

Author : Claire Conlisk

As stated in my bio above, in my professional capacity, I have a strong background in leading teams to successful delivery of projects, and in stakeholder engagement. I was very disappointed with the quality of Community Engagement on this project. I feel it fell very much short of what is expected, and very much short of what this community deserves. The impacts of this project on the Communities surrounding the Windfarm will be life changing. No matter what. And so they deserve to have their voices, not just heard, but listened to. That didn't happen here. There was absolutely no attempt to gain the trust of the wider community here, and without that trust, they've made delivery of this project much more challenging that it needed to be.

The first issue was that they started too late. From reading the EIAR you can see for example that bird surveys began in 2020. We are aware that conversations with landowners began much earlier than that. But in their own Scoping and Consultation Chapter, they state that public engagement started in April 2023. That's a gap of at least 3 years, during which plans were being made which had the potential of huge impacts on the lives hundreds of households, without those households being consulted. Public engagement should have started at a point when on all options were open so that people could have had meaningful input into the design.

The next issue for me is their handling of feedback. On page 9 of Chapter 5 of the EIAR, in response to a query from An Garda Síochána, they state:
"Public engagement is ongoing which has included public information events, door-to-door consultation and a project website. The feedback from the public to date has been typical for wind energy development, relating to queries on noise and visual impact."

This statement is inaccurate and misleading. First of all, the developer did not hold any public information events. The only event provided was a single one-day "clinic" in Tuam, approximately 10 miles from the proposed development site. It was by appointment only, it was not publicly advertised, and it was located outside the affected communities of Kilconly, Caherlistrane, who are the most impacted. We repeatedly asked for a public meeting but the reason given was that it was against health and safety. This is extremely disappointing and reflects a poor opinion of a community that I am extremely proud of. We held 3 public meetings ourselves with no issues and would absolutely have worked with them on a public meeting had we been approached. They were also offered Kilconly Community Centre as the venue for any public meeting by the Chairman of the Kilconly Development Association, but they never responded.

I was one of the people that attend the Clinic in Tuam. Only 2 representatives from RWE were present (though I'm told a third man had been present as other people's bookings). There were no representatives from Fehilly Timoney. I was told that someone FT had

intended to be there but was ill. This of course does happen , but there should have been a backup plan. The two people that were there were very pleasant but I very much got the feeling that I was being told what was going to happen rather than being consulted in any meaningful way. I got similar feedback from other people who attended. This is not compliance with the 2019 Draft Guidelines' emphasis on meaningful, two-way engagement. They also had very little material with them. No photo montages, no detailed explanations of the plans, no displays. Essentially all they had were the flyers that they had distributed house to house.

The second sentence of that statement above says that feedback was 'typical for wind energy development, relating to queries on noise and visual impact'. But that's contrary to my own experience. Over the past 6 weeks, we have spoken to hundreds of our neighbours in Kilconly, Caherlistrane and beyond, and, while noise, flicker, and visual were certainly mentioned, the main concerns that came up were actually the risk of flooding, the bog, and the Whooper Swans. Other topics came up also, but those were the ones that came up again, and again, and again. Many of these people have lived here all their lives and they understand where they are living. They may not be able to explain to you about underground aquifers, but they can certainly tell you which fields usually flood, when not to go in the bog, and what direction the Whooper Swans usually fly over their house. This extremely valuable local knowledge, and these very really concerns, should have been gathered and addressed but they weren't.

Some of the concerns raised with us include.

- Bog stability and peat removal
- Water quality and hydrology
- Flooding risk
- Wildlife and birds
- Construction traffic and road safety
- Impact on homes, farmland, and grazing animals
- Shadow flicker and noise

This is not reflected in the EIAR. What's also missing in the EIAR is a chart showing the concerns raised during the Community Engagement Process, and the changes that were made to address those concerns. That is a lack of transparency.

They also mention in the EIAR that they created a dedicated Website. They did create https://ie.rwe.com/projects-and-locations/onshore-wind-farm-shancloon/ but as of 13/11/2025, this page:

- Does not include any of the 2025 letters or notices

- Does not include the letter informing residents of the consultation clinic
- Omits key details about engagement and updates

The 2019 Draft Guidelines state that the project website should serve as a central, up-to-date repository of information for affected communities. It is not fulfilling that role.

Appendix 5.2 lists numbers of houses contacted but:

- Provides no detail on the nature of feedback received
- Reduces all concerns to noise, visual impact, and shadow flicker
- Provides no explanation of how concerns influenced project design
- Provides no evidence of actual "consultation" — only evidence of information drops

This is not a consultation report. It is a distribution log.

There is no evidence of:

- Community workshops
- Public information meetings
- Environmental information sessions
- Feedback summaries
- Design revisions based on local input
- Responses to questions raised by residents

Conclusion

The applicant's public engagement is inadequate, misleadingly described, and fails to comply with:

- The Aarhus Convention (Article 6)
- The Draft Revised Wind Energy Development Guidelines 2019
- Good-practice expectations evident in the Galway County Development Plan

The process has been characterised by:

- Late engagement
- Minimal effort
- Poor accessibility
- Lack of transparency
- Misrepresentation of events

- No meaningful opportunity for residents to influence the proposal

I would urge An Coimisiún to consider refusal of this application. Unfortunately, I don't think Further Information would be of any help in this case. They failed to gain the trust of the community and in that failure, not only jeopardized this particular application, but any other renewal energy project in this area. The trust of the community will be extremely hard to win now.

Chapter 9 Human Health and Population

Author : Seamus Roche

1. Introduction

Chapter 6 of the Shancloon Wind Farm EIAR, titled Population and Human Health, fails to meet the standards of accuracy, transparency and procedural compliance required under the EPA EIAR Guidelines (2022), the EIA Directive (2014/52/EU), Draft Revised Wind Energy Development Guidelines (2019) and associated best practice guidance. The assessment is undermined by material inconsistencies across chapters, selective use of evidence and reliance on outdated guidelines. Critical omissions include karst and peat stability risks, groundwater vulnerability and cumulative health impacts, while key receptors and sensitive communities are excluded from consideration. Furthermore, the EIAR misrepresents setback distances, socio-economic benefits and property value impacts and disregards WHO Environmental Noise Guidelines (2018) and precautionary principles. These deficiencies collectively render the chapter's conclusions unreliable and procedurally flawed.

2. Consultation

The EIAR claims community engagement occurred between **2019 and 2023**.

"The Applicant also conducted community consultations in relation to the Proposed Development between 2019 and 2023".

This is untrue.

Vol 3 Appendix 5.2 **First Residents Letter** and Brochure Drop

*"On the **11th April 2023**, this brochure, as well as a cover letter from the Community Liaison Officer (Kieran O'Byrne, Stakeholder Stakeholder Engagement / Communications Manager , RWE Renewables Ireland Limited,) were delivered to all residents within a 2km radius (231 houses) of the proposed turbine array"*

While RWE consulted statutory bodies in 2020, the local community was excluded for three years. This undermines compliance with Aarhus Convention obligations, the EIA Directive (2014/52/EU and EPA guidance requiring early and meaningful public participation at the scoping stage.

Many residents report the lack of consultation. There is a resident living within 1.2kM of two turbines, who first learnt of the wind farm in early October 2025, from a neighbour. Many residents complain of the complete lack of engagement from the developer, with letters dropped through letterboxes, without door knocks or any attempt to discuss the project or answers questions. This is evident is RWE's own statement that in June 2025.

Vol 3 Appendix 5.2

*"While going door to door dropping letters we met with **approximately 18 people** as we delivered."*

Many residents who did speak to RWE report being given inaccurate information, such as the turbines would not be visible from their properties, even though in some cases they were less than 1km away.

3. Cumulative Effects

The EIAR relies on the 2006 Wind Energy Development Guidelines for defining the cumulative impact study area and setback distances. This is contrary to the Department of Housing's Draft Revised Wind Energy Development Guidelines (2019), which the developer was requested to follow by An Coimisiún Pleanala. Failure to apply the 2019 guidelines undermines the validity of the cumulative impact assessment and breaches EPA EIAR Guidelines (2022) requiring use of the most up-to-date guidance.

4. Population Trends

The EIAR limits its assessment to a 2km radius from the site boundary, claiming effects are "greatly reduced" beyond this distance. This is scientifically and procedurally flawed given turbine tip heights of 180m. The Draft Revised Wind Energy Development Guidelines (2019) and EPA EIAR Guidelines (2022) require consideration of visual and cumulative impacts over a 20km zone of theoretical visibility and noise impacts beyond 2km. Restricting the study area to 2km underestimates potential health, amenity and property impacts.

5. Existing Environment

The EIAR contains a material inconsistency between Chapter 6 and Chapter 11 regarding karst features. Chapter 6 states that collapse dolines are present throughout the site, indicating active karst processes and structural weakness. Chapter 11, however, asserts that no karst features exist within 1km of the site, with only several features located 5km away. This contradiction undermines the reliability of the geological and hydrogeological assessment and raises serious concerns about peat stability, groundwater vulnerability and vibration transmission risks.

6. Population Trends

The EIAR incorrectly states that the closest inhabited property (H54 XC65) is 728m from T11 and that other properties are beyond 720m. Independent measurements confirm that H54 XC65 is less than 720m from a turbine and properties such as H54 N127 are

within 720m of T1 and T5 when measured to the curtilage. This misrepresentation conceals non-compliance with the Draft Revised Wind Energy Development Guidelines (2019). The error undermines the validity of noise, shadow flicker and health assessments.

7. Community Facilities & Services

The EIAR omits key communities such as Kilconly and Caherlistrane, which are located within the wind farm development zone and closer to the turbines than Tuam and Headford. Both parishes contain schools, sports facilities and community services, making them sensitive receptors for traffic, noise and visual impacts.

8. Socio-Economics, Employment and Economic Activity

The EIAR claims the operational phase will create 73.8 to 87.2 long-term jobs, including operations and maintenance roles. However, Chapter 14 states that the substation and control buildings will be largely automated and will not require full-time operational staff, with only occasional visits by maintenance teams. This contradiction indicates that the employment benefits have been overstated, undermining the socio-economic assessment. It is also a moot point in an economy of full employment with labour and skills shortages.

9. Assessment of Likely Significant Effects

The EIAR claims that removing turbine foundations would cause significant noise, vibration and dust impacts, using this as justification for leaving reinforced concrete in situ. However, Chapter 8 (Noise and Vibration) fails to assess noise and vibration impacts from piling and foundation works during construction. This selective approach demonstrates inconsistency and undermines the integrity of the noise and health impact assessment, breaching EPA EIAR Guidelines (2022) and EIA Directive requirements for comprehensive phase-by-phase analysis.

10. Economic Value

The EIAR assumes a 35% capacity factor for the Shancloon Wind Farm. This figure exceeds the national average of approximately 28% for onshore wind in Ireland (SEAI).No modeling has been provided by the developer to support a 35% capacity factor. Using an inflated capacity factor overstates annual energy output, emissions savings and economic benefits, particularly given curtailment and grid constraints that regularly affect Irish wind farms. This misrepresentation undermines the credibility of the climate and socio-economic assessment.

11. Proposed Community Benefit Scheme

The EIAR estimates an annual Community Benefit Fund contribution of €378,000 based on an assumed capacity factor of 35%. This figure is optimistic and exceeds the national average of 28% for onshore wind (SEAI). Overestimating capacity factor inflates projected fund contributions and misrepresents the socio-economic benefits of the project, undermining the credibility of the assessment.

12. Property Values

The EIAR selectively quotes the CERIS 2023 report to suggest property value impacts are minimal and not persistent but omits a key finding: "Turbine height is influential on house price within 1km, with turbines taller than 125m incurring a greater discount **(-22.9%)** compared to medium-sized turbines (-14.4%)." Shancloon proposes turbines of 180m tip height, which would likely result in even greater discounts.

13. Human Health & Safety

The EIAR asserts that there is "no significant risk" of sediment release or contamination during operation. However, Chapter 8 confirms artesian groundwater at the proposed substation, with continuous upward flow observed at borehole PBH-20. This indicates pressurized aquifers and high groundwater connectivity, which significantly increases the risk of pollutant migration from oil spills or leaks. The omission of this vulnerability in Chapter 6 undermines the integrity of the human health and water quality assessment.

14. Amenity Tourism and Visual Impacts

The EIAR incorrectly asserts that there are "no significant tourism attractions" near the site or TDR. In fact, the TDR passes through Galway City, a major tourism destination and the site is proximate to Knockma Forest Trail, historic castles, abbeys and cultural heritage sites. These omissions undermine the tourism impact assessment and breach Fáilte Ireland's Guidelines on Tourism in EIAs (2011), which require comprehensive evaluation of direct and indirect impacts on tourism and amenity.

The EIAR cites national surveys and tourist attitudes toward wind farms as evidence of positive perception. This is irrelevant to the assessment of local impacts, as tourists do not reside in the area or experience long-term consequences such as noise, shadow flicker, or property devaluation. Reliance on such arguments undermines the credibility of the tourism and amenity assessment.

The EIAR claims that careful design mitigates visual amenity impacts. This is misleading. The proposed 180m turbines will cause significant and unavoidable visual intrusion in a rural landscape, affecting residential amenity and tourism assets such as

Knockma and heritage sites. No enforceable mitigation measures are provided beyond vague design-stage consideration. Photomontages underrepresent visibility and cumulative visual impacts are inadequately assessed. This breaches Wind Energy Development Guidelines (2019) which requires robust visual impact analysis and mitigation.

15. Potential Effects – Human Health

The EIAR concludes that operational impacts on human health will be "imperceptible" based on an alleged lack of scientific consensus. This reasoning is flawed. Absence of consensus does not equate to absence of risk. WHO Environmental Noise Guidelines (2018) identify health risks from chronic exposure to noise above 40 dB Lnight, including cardiovascular disease and sleep disturbance. The EIAR fails to apply the precautionary principle required under Directive 2014/52/EU and does not provide quantitative health risk analysis. Vulnerable groups are ignored and the conclusion of "neutral impact" is unsupported and misleading.

16. Major Accidents

The EIAR asserts that pollution risk is limited, yet acknowledges the use of drilling muds, grout, cementing **chemicals** and **explosives** during construction. There is no risk assessment on the use of explosives anywhere in the EIAR. The site overlies a regionally important aquifer that local water schemes as well as private supplies are sourced from via boreholes. Chapter 8 confirms artesian groundwater at the substation, indicating high connectivity and vulnerability. The EIAR fails to provide a robust groundwater protection plan or assess contamination risk to private wells, breaching EPA EIAR Guidelines (2022) and the Groundwater Directive (2006/118/EC).

17. Flooding

The EIAR asserts that flood risk is managed but fails to consider the hydrological consequences of removing approximately 100,000 m^3 of peat, replacing it with concrete and constructing floating roads that will compact peat and block natural drainage. The substation is located on a field that frequently floods and artesian groundwater has been confirmed at PBH-20, indicating high hydrogeological connectivity. These factors significantly increase flood and contamination risk, undermining the validity of the flood risk assessment.

18. Catastrophic Events

The EIAR asserts that turbines have been sited to minimise foundation failure and landslide risk. This claim is unsubstantiated given that turbines are proposed on deep peat over a sensitive karst landscape with collapse dolines and unmapped fault lines. These conditions significantly increase the risk of peat instability, subsidence and catastrophic failure, as evidenced by the Derrybrien landslide case (C-215/06).

19. Mitigation Measures - Land Use

The EIAR claims new access tracks have been "sensitively designed" to minimize impact on cutover bogs. In reality, the design involves "floating roads" on peat with geotextile sheets and piling up to 10m deep, which will compact peat, block natural drainage and increase instability. The claim of "sensitive design" is misleading and unsupported.

20. Traffic Hazards

The EIAR claims traffic impacts are mitigated through a Traffic Management Plan but provides unrealistic traffic volume estimates and ignores cumulative impacts. Each 180m turbine requires multiple abnormal loads and hundreds of concrete and stone deliveries, yet the EIAR does not reconcile these figures with the proposed schedule. Galway City and villages along the TDR will experience significant congestion and safety risks, which are dismissed as "indirect" impacts. This breaches EPA EIAR Guidelines (2022) requiring accurate, cumulative traffic impact assessment and enforceable mitigation measures.

21. Socio-Economics and Energy Contribution

The EIAR asserts that wind energy is "low-cost" and reduces dependency on fossil fuels, but fails to account for curtailment and constraint payments under the DS3 system, which significantly increase costs to consumers. Grid limitations and balancing requirements mean that wind energy is not inherently low-cost in practice. This omission misrepresents the economic benefits of the project and breaches EPA EIAR Guidelines (2022) requiring transparent and realistic economic analysis.

22. Conclusion

The EIAR's treatment of population and human health issues is incomplete, inconsistent, and misleading. By restricting study areas, overstating benefits, and omitting significant risks such as peat instability, groundwater contamination, and chronic noise exposure, the report fails to provide a robust evidence base for informed decision-making. Its disregard for current guidelines, failure to reconcile contradictions,

and lack of enforceable mitigation measures breach statutory requirements and undermine public confidence in the EIA process. For these reasons, it cannot be considered a credible assessment of human health and amenity impacts and therefore permission for the wind farm should be refused.

Chapter 10 Noise

Author : Seamus Roche

1. Introduction

The Environmental Impact Assessment Report (EIAR) for the proposed Shancloon Wind Farm development presents a baseline noise survey intended to establish operational noise limits under ETSU-R-97 and the Institute of Acoustics Good Practice Guidance (IOA GPG). However, a detailed examination of Chapter 8 Noise and Vibration, Appendix 8 (Noise) and supporting documentation reveals multiple systemic flaws in data collection, processing and analysis. These issues ranging from microphone placement errors and data duplication, to unjustified exclusions and omissions of key assessments compromising the integrity of the baseline environment. As a result, derived turbine noise thresholds are artificially inflated, cumulative impacts are ignored and resident amenity is inadequately protected. The following review outlines these deficiencies with reference to specific evidence, demonstrating non-compliance with international best practice, the 2019 Draft Wind Energy Development Guidelines, WHO health-based recommendations and EU EIA Directive requirements.

2. Inflated Background Noise

This concern relates to the integrity of the baseline measurements. Microphones were positioned in close proximity of trees and dense foliage, a siting approach known to inflate LA90 background noise due to wind induced rustle. This practice is inconsistent with the Institute of Acoustics Good Practice Guidance, including Supplementary Guidance Note 2 (SGN 2, Section 2.5.2), which advises against placing microphones close to vegetation for precisely this reason, as it can artificially elevate background levels and lead to less stringent operational noise limits.

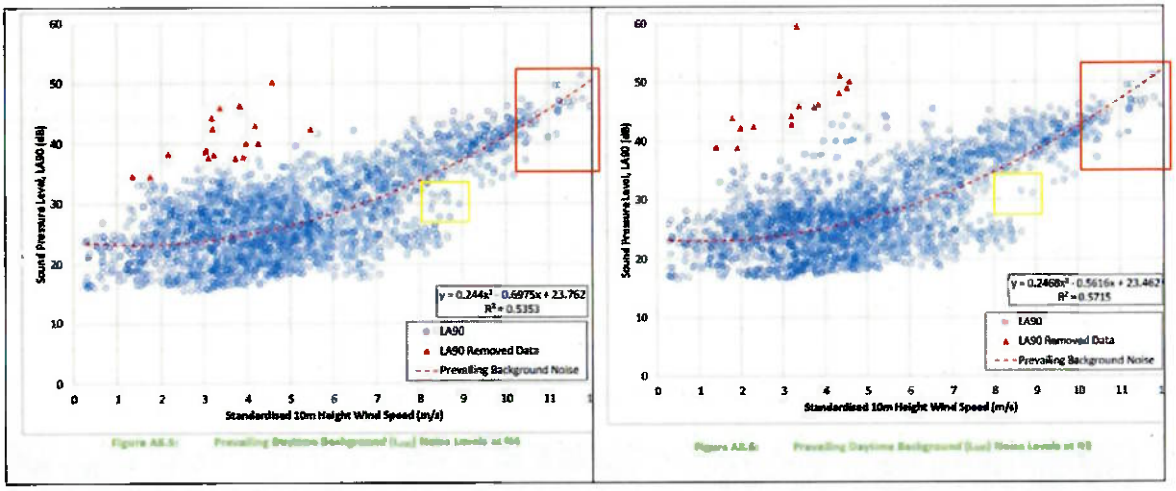
Appendix 8, Table 8.1.7 shows a steep and consistent rise in night-time LA90 levels above approximately 6–7 m/s wind speed across multiple monitoring locations, strongly aligning with the expected effect of microphone placement near foliage. The magnitude of increase is extreme in some cases. For example, N8 nighttime levels rise by approximately 35 dB between 2 m/s and 12 m/s, a pattern characteristic of wind-induced contamination rather than genuine ambient noise conditions.

Under recognised international best practice, correctly shielded microphones located away from vegetation typically exhibit a more gradual rise in background noise with wind speed, often plateauing at higher wind speeds as environmental noise sources saturate. The exaggerated increases observed in the EIAR data are therefore unlikely to reflect true environmental baseline conditions and risks inflating turbine noise thresholds, particularly during nighttime periods when residents are most vulnerable to disturbance.

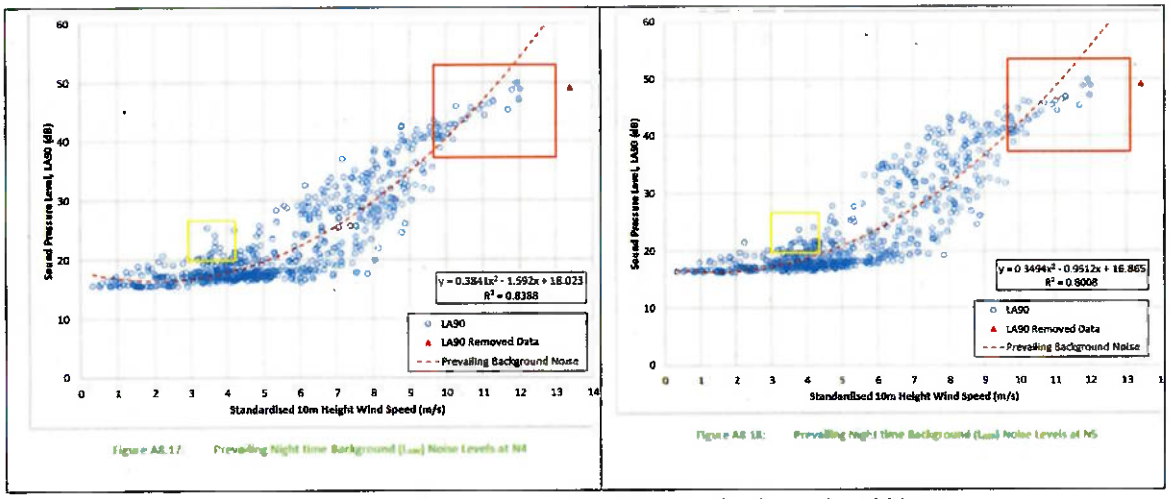
3. Unrealistic Similarities in Scatter Plots

The background noise scatter plots for locations N4 and N5 are strikingly similar across all wind speeds, with the effect most pronounced above 10 m/s but evident throughout the full range. Although these monitoring locations are 1.5 km apart and were measured using four separate Class 1 sound level meters of three different models, conditions that would normally produce noticeable variation due to differing microphone wind responses, vegetation influence and local acoustic environments, the two datasets track each other with an unusually consistent offset of approximately 0–1.8 dB. They are not perfectly identical, so this is not a simple copy & paste error, rather it points to a more fundamental issue in how the background data has been generated or processed. This level of uniformity across two independent sites, at all wind speeds and during both day and night, is not representative of the natural variability seen in genuine field measurements and seriously undermines the reliability of the background noise assessment presented in the EIAR.

Daytime



Nighttime



4. Day and Night L90 Baseline Noise Levels Identical for location N6

There is a material error in the baseline background noise data for monitoring location N6. The daytime and night-time LA90 baseline values are identical at every wind speed and the corresponding regression curves are also identical, demonstrating that the error persists throughout the analysis and is not simply a formatting or transcription mistake. As the baseline for N6 is neither credible nor robust, any turbine noise limits or conclusions that rely on this dataset cannot be considered reliable. This calls into question the integrity of the baseline evidence and the credibility of the noise assessment presented in the EIAR.

Table 8.1.7: Prevailing Background Noise – Daytime Periods

Location	Prevailing Background Noise $L_{A90,10min}$ (dB) at Standardised 10 m Height Wind Speed (m/s)										
	2	3	4	5	6	7	8	9	10	11	12
N1	25.9*	25.9	25.9	26.5	27.9	30.1	33.1	36.9	41.6	47	53.2
N2	24.3	24.7	25.5	26.7	28.3	30.3	32.7	35.5	38.6	42.2	46.1
N3	22.5	23.1	24.1	25.4	27.1	29.2	31.6	34.4	37.5	41	44.9
N4	23.3	23.9	24.9	26.4	28.4	30.8	33.8	37.2	41.2	45.6	50.5
N5	23.3	24	25.2	26.8	29	31.6	34.8	38.4	42.5	47.1	52.3
N6	23.8*	23.8	24.5	25.8	27.9	30.6	34.1	38.3	43.2	48.7	55
N7	25.9	26.4	27.4	29.1	31.3	34.3	37.8	41.9	46.7	52.1	58.1
N8	25.6	25.8	26.5	27.9	29.9	32.5	35.7	39.6	44.1	49.2	49.2§
N9	24.5*	24.5	24.9	26.1	28.1	31	34.6	39	44.2	50.2	57.1
N10	24.4	25.7	27.3	29.3	31.5	34	36.8	39.8	43.2	43.2§	43.2§
N11	25.5*	25.5	25.6	26.5	28.4	31.1	34.7	39.1	44.5	50.7	57.8
N12	25.7*	25.7	26.2	27.1	28.4	30.2	32.5	35.2	38.4	42.1	46.2

Table 8.1.7: Prevailing Background Noise – Night time Periods

Location	Prevailing Background Noise $L_{A90,10min}$ (dB) at Standardised 10 m Height Wind Speed (m/s)										
	2	3	4	5	6	7	8	9	10	11	12
N1	21.6*	21.6	21.6	22.6	24.4	27.1	30.6	35.0	40.3	46.5	53.6
N2	18.6	18.7	19.4	20.8	22.7	25.3	28.4	32.2	36.6	41.5	47.1
N3	17.0	17.3	18.2	19.7	21.7	24.4	27.8	31.7	36.2	41.3	47.1
N4	16.4	16.7	17.8	19.7	22.3	25.7	29.9	34.8	40.5	47.0	54.2
N5	16.4	17.2	18.7	20.8	23.7	27.3	31.6	36.6	42.3	48.7	55.8
N6	23.8*	23.8	24.5	25.8	27.9	30.6	34.1	38.3	43.2	48.7	55.0
N7	17.3	18.0	19.4	21.6	24.6	28.5	33.1	38.6	44.8	51.9	59.8
N8	17.4	17.5	18.5	20.4	23.2	26.9	31.4	36.9	43.3	50.5	58.7
N9	19.6*	19.6	19.9	21.2	23.5	26.8	31.2	36.6	43.0	50.4	58.8
N10	16.5	17.4	19.1	21.8	25.3	29.8	35.2	41.4	48.6	48.6§	48.6§
N11	19.9	20.2	21.3	23.1	25.8	29.2	33.4	38.4	44.2	50.8	58.2
N12	19.4*	19.4	19.8	20.9	22.7	25.2	28.3	32.2	36.8	42.1	48.1

5. Data Duplication Across Monitoring Locations

Appendix 8, Table 8.1.4 shows that seven monitoring locations (N4, N5, N6, N7, N8, N9 and N11) report identical nighttime counts of valid data points per wind speed bin, with the same total number of samples (739), despite being different sites with differing environmental conditions and monitored using different Class 1 instruments (Larson Davis LxT, Svantek 977, Svantek 307). This outcome is statistically implausible and indicates that the datasets are unlikely to represent fully independent measurements. The IOA Good Practice Guide requires site specific data to derive noise limits. If datasets have been duplicated or artificially aligned through post processing, the resulting limits are invalid and the assessment would not meet the requirements of ETSU-R-97 or the IOA GPG.

N2 also shows duplication across 11 of 13 wind speed bins, and N12 shows duplication across 9 of 13 bins, reinforcing the concern that the night-time datasets do not reflect independent measurement at each location.

Table 8.1.4: Number of Valid Datasets: Noise Monitoring Locations N1-N12– Nighttime

Wind Speed (at standardised 10 m height), m/s	Valid Datasets											
	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
0	0	1	0	1	1	1	1	1	1	1	1	1
1	2	27	10	27	27	27	27	27	27	25	27	27
2	20	56	42	56	56	56	56	56	56	36	56	56
3	41	71	48	72	72	72	72	72	72	31	72	72
4	78	162	109	165	165	165	165	165	165	87	165	165
5	52	110	109	110	110	110	110	110	110	58	110	109
6	17	74	91	74	74	74	74	74	74	57	74	71
7	23	66	97	66	66	66	66	66	66	43	66	62
8	32	80	92	80	80	80	80	80	80	48	80	78
9	27	45	39	45	45	45	45	45	45	18	45	45
10	22	28	22	28	28	28	28	28	28	6	28	28
11	9	9	9	9	9	9	9	9	9	0	9	9
12	5	5	5	5	5	5	5	5	5	0	5	5
Total Number of Data Points	329	735	674	739	739	739	739	739	739	410	739	729

Further analysis shows that N11 is reported as having 739 valid night-time data points. The N11 monitoring period (Lot 1: 7–21 December 2022) covered 14 nights, with data logged at 10-minute intervals. With the dawn chorus period removed, this allows for a maximum of 30 valid samples per night, or 420 in total. Even if dawn chorus exclusions were not applied, the theoretical maximum would still be lower than the 739 valid samples reported. This discrepancy indicates that the dataset cannot reflect the actual measurement period and raises significant concerns regarding data handling and validation. It further undermines confidence in the integrity of the baseline and is inconsistent with the IOA Good Practice Guide requirements for transparent and accurate data reporting.

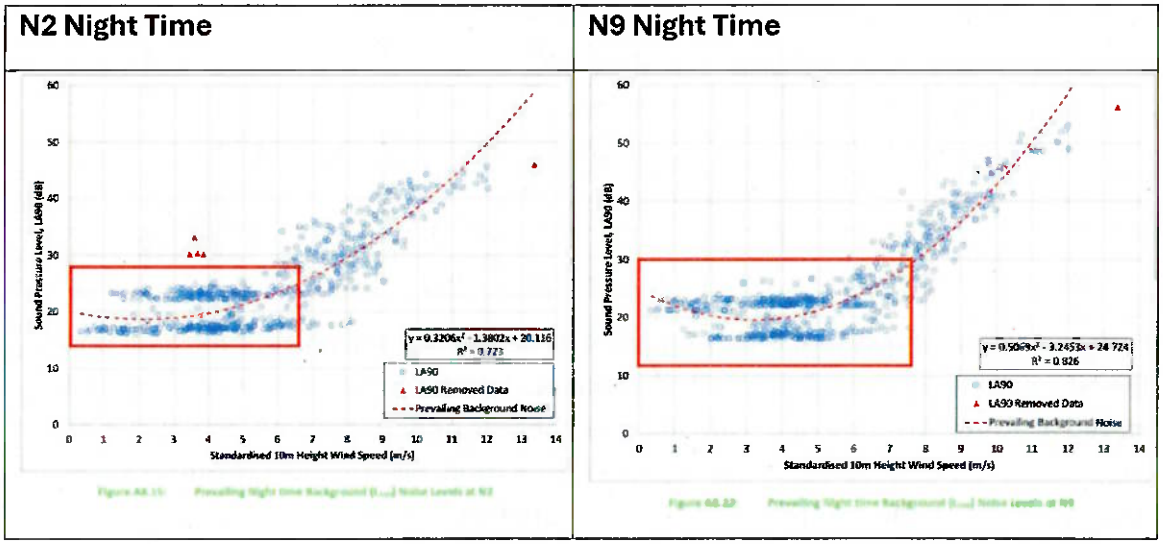
6. Implausible Noise Levels and Instrumentation Bias

Figures A8.15 (N2) and A8.22 (N9) illustrate nighttime prevailing background noise levels that highlight two fundamental weaknesses in the EIAR's baseline methodology.

Firstly, both curves present LA90 values at 0.5 m/s that are higher than those at 2 m/s, by more than 3 dB in the case of N9. In a rural environment, ambient noise should generally increase with wind speed, values reducing as wind speed rises are acoustically implausible and indicate that the lowest wind-speed bins are influenced by the self-noise floor of the instrumentation rather than genuine environmental sound.

Secondly, these datasets were collected using different Class 1 meters (Svantek 977 and Larson Davis LxT) across separate survey Lots, with no overlapping deployments or presented uncertainty analysis. While Class 1 certification ensures compliance with tolerances, it does not standardise self-noise, linearity or wind-induced microphone effects. Combining datasets from different instruments without side-by-side verification or harmonisation can introduce discontinuities and bias, which is evident in the curvature of these scatter plots.

This approach conflicts with the principles of IEC 61672 and ISO 1996-2, which require consistency of instrumentation, traceability and appropriate reporting of uncertainty. The EIAR's assertion that such limitations "have no effect on the night-time noise limit" is not supported by the data and risks underestimating potential night-time impacts.



7. Selective Placement of Microphones

The resident at N5 reports that the developer contacted him directly by telephone to request that the noise monitor be placed at his home and indicated that agreeing would be "in his best interest". The developer was already in face-to-face contact with the resident's brother, who lives approximately 150 m away and whose property does not have the 20 m high evergreen trees. The monitor was positioned beside these mature

trees, which are capable of increasing wind-induced noise and elevating baseline measurements. This raises a legitimate concern that the selected monitoring location may have resulted in higher baseline noise levels than a more representative nearby alternative.

A further concern arises at N5 regarding the influence of local vegetation on baseline readings. The resident has reported that two parties associated with the development separately enquired whether he intended to cut the 20m high evergreen trees. This was after the baseline noise monitoring had concluded. If vegetation that artificially elevated the baseline during the survey period were later removed, the actual post construction background noise would be materially lower than the EIAR baseline. This would result in significantly greater turbine audibility for residents than assessed, while the developer could continue to rely on the inflated baseline for compliance. Such a scenario would fundamentally undermine the validity of the EIAR and any planning conditions derived from it.

8. Failed Recordings

At least three residents (N2, N5 and N12) report being contacted by the developer in January 2023 and were informed that the noise monitoring carried out the previous month had "failed", with a request to repeat the recordings. However, the EIAR includes both the December (Lot 1) and January (Lot 2) datasets in the baseline analysis with no reference to any failures or data exclusions. If data previously described as "failed" has been retained in the baseline without explanation, the validity of the regressions and the limits derived from them is uncertain. Transparent reporting of equipment performance and data quality is a fundamental scientific requirement under IOA GPG and EIA standards. The absence of clarification on this issue raises legitimate concerns regarding the reliability and quality assurance of the monitoring.

9. Implausible Nighttime Noise Patterns

Appendix_8 Noise – Table 8.1.7 shows a recurring pattern of unusually high nighttime background noise levels at several monitoring locations, particularly at higher wind speeds, with nighttime values in some cases exceeding daytime levels by a substantial margin. This is counterintuitive in a rural environment, where nighttime periods are typically quieter due to reduced human activity. For example, at Location N8 the daytime level at 12 m/s is reported as 49.2 dB, yet the nighttime value is 58.7 dB, almost **10 dB** higher. Similar patterns appear across other locations.

More concerning still is the steep escalation in nighttime background noise between 10 m/s and 12 m/s. At Location N8, the level rises from 43.3 dB to 58.7 dB, a **15.4 dB** increase. This is not a minor anomaly, a 15 dB rise represents a 32 fold increase in

sound energy and is perceived as approximately three times louder to the human ear. In a rural nighttime context, such a dramatic increase is acoustically implausible and strongly suggests potential issues with data collection conditions, monitor siting, or subsequent data treatment that have resulted in elevated nighttime baseline levels. The consistency of this pattern across multiple monitoring locations undermines the credibility of the baseline data and raises serious concerns about the validity of the noise impact predictions and turbine compliance assessments.

These anomalies have significant implications for turbine noise compliance, as they artificially inflate the permissible nighttime thresholds, precisely during the period when residents are most vulnerable to sleep disturbance.

10. Unjustified Dawn Chorus Exclusion

The EIAR states that noise data between 04:00 and 07:00 was excluded to remove the influence of the dawn chorus. However, the baseline noise survey was conducted in December and January, when sunrise occurs much later in the west of Ireland, typically after 08:30. At these times (04:00 and 07:00), the dawn chorus activity is absent, making the exclusion not environmentally justified. Omitting early morning data without an environmental basis removes some of the quietest periods from the baseline, potentially inflating background levels and weakening the reliability of noise impact predictions. While the IOA Supplementary Guidance Note 2 mentions that the dawn chorus can be removed in some circumstances, it is not justified here for the reason given above. Given that nighttime hours are between 23:00 to 07:00, removing the dawn chorus takes 37.5% of data points out of the analysis.
https://www.ioa.org.uk/sites/default/files/IOA%20GPG%20SGN%20No%202%20Final%20Sept%202014_0.pdf

11. Cumulative Noise Ignored

The EIAR does not provide a numerical cumulative noise assessment for the combined operation of all 11 turbines within the proposed Shancloon development, despite several dwellings being located within 1 km of multiple turbine locations. This omission is significant, as residents will experience the combined noise from all turbines operating simultaneously. Good acoustic practice and EIA principles require cumulative effects within a development to be quantified at receptors to ensure that predicted levels reflect realistic operating conditions. Without this, the EIAR risks understating the true noise environment and increases the likelihood of exceedances at homes once the wind farm is operational.

12. Vibration Transmission Through Karst Not Assessed

The EIAR does not assess the potential for ground-borne vibration transmission through karst geology, despite turbines being located on karst terrain. Karst features such as

fissures, voids and conduits can transmit vibration over greater distances and along unpredictable pathways, with the potential to affect nearby dwellings, private wells and groundwater systems. In a karst environment, standard assumptions on vibration attenuation cannot be relied upon. The absence of a karst-specific vibration appraisal leaves a material pathway unassessed, risks unforeseen effects on residents and water supplies and undermines the completeness required of an Environmental Impact Assessment.

13. Sparse High Wind Data and Polynomial Extrapolation

The IOA Good Practice Guide requires a minimum of 200 valid data points per assessment period and at least five data points in each wind speed bin to support a reliable regression. Appendix 8, Table 8.1.4 shows that at 11–12 m/s several locations fall below this threshold, and some have no data at all (e.g. N10 daytime at 11–12 m/s). Despite this, polynomial regression curves were extrapolated to 12 m/s. Extending curves beyond the range of valid data departs from recognised best practice and introduces significant uncertainty into the high wind predictions used to set noise limits.

14. Daytime Noise Limits

The EIAR's justification for applying a daytime noise limit of 40 dB LA90 in low background noise environments (<30 dB LA90) is inconsistent with the 2019 Draft Wind Energy Development Guidelines, which place greater emphasis on receptor protection and require clear justification for adopting higher thresholds in quiet rural areas. Although the EIAR identifies 93 noise-sensitive locations within the 35 dB LA90 contour, it defaults to the upper limit of 40 dB LA90 without providing a site-specific rationale, sensitivity analysis or acoustic evidence to support this departure from lower limits appropriate to a quiet soundscape. The EIAR relies on planning based criteria drawn from ETSU-R-9, such as turbine output and dwelling count to justify limit selection. However, the IOA Good Practice Guide explicitly warns against conflating planning considerations with technical noise assessment. Applying the highest permissible limit in an area characterised by very low background sound does not align with the receptor focused intent of the 2019 Guidelines, nor with the environmental protection principles expected under contemporary policy. In the absence of a robust, site specific justification, the adopted limit cannot be considered to provide adequate residential amenity protection.

Noise Impact and Legal Precedent Concerns

Even with the Shancloon proposal setting a looser 40 dB LA90 daytime limit for low-noise environments, the EIAR's own predictions show this limit is reached or exceeded at several receptors under certain wind conditions, meaning the turbines are predicted to operate at or above the compliance limit

This application comes against a backdrop of two recent High Court rulings on wind farm noise nuisance:

Ballyduff Wind Farm : Ms Justice Egan held that turbine noise amounted to an "unreasonable interference with the enjoyment of two properties", ordering nighttime shutdowns.

Gibbet Hill Wind Farm : The Court concluded it was "fair, just and appropriate to make a permanent order directing that the three turbines in question be shut off completely", citing persistent nuisance and inadequate mitigation.

Both cases involved turbines less than half the size of those proposed for Shancloon. The Shancloon EIAR uses the same ETSU-R-97 methodology as Gibbet Hill, which failed to prevent nuisance despite compliance claims. No additional mitigation or alternative approach is proposed for Shancloon's significantly larger turbines.

These judgments establish a clear precedent: noise impacts from wind farms can constitute actionable nuisance even when modeled as compliant. Larger turbines increase acoustic risk, yet the proposal does not address this. Comparisons to passing or transitory noise nuisance fail to grasp the inescapable nature of nuisance which will continue for decades. Without stronger planning safeguards, projects like Shancloon risk prolonged, costly, and divisive litigation, undermining community trust and Ireland's renewable energy goals.

15. Failure to Comply with WHO Health Based Guidance

- The World Health Organization (WHO) recommends nighttime outdoor noise ≤40 dB Lnight to protect against sleep disturbance and adverse health effects. The EIAR dismisses WHO limits as "conditional" and not best practice, yet the predicted nighttime background levels at high wind speeds exceed 55–60 dB, far above WHO recommendations. Ignoring WHO guidance undermines the health protection of residents and conflicts with the precautionary principle in environmental planning.
- The County Galway Development Plan under development management standards requires wind energy developments to regard the: *"Impact on human health in relation to noise disturbance (including consistency with the Word Health Organisations 2018 Environmental Noise Guidelines for the European Region), shadow flicker and air quality"*

Chapter 15: Development Management Standards | Galway County Council Online Consultation Portal

- The HSE issues scoping guidance directing wind farm developers to use WHO 2018

Environmental Noise Guidelines recommending wind turbine noise below 45 dB Lden (approximately 38.6 dB LAeq) to prevent sleep disturbance, annoyance, and cardiovascular effects.

16. Failure to follow 2019 Draft Wind Energy Development Guidelines

The EIAR does not apply the requirements of the Draft Wind Energy Development Guidelines (2019), despite being requested to do so. The 2019 Draft Guidelines introduce the Rated Noise Level methodology, which includes penalties for tonality and amplitude modulation (AM), requires a robust cumulative noise assessment and specifies strengthened post construction monitoring. These provisions exist to reflect contemporary understanding of wind turbine noise and to provide enhanced protection for residential amenity. By omitting these key elements, the EIAR fails to align with current policy direction or emerging best practice. As a result, compliance with the standards envisaged in the 2019 Guidelines cannot be verified, and the assessment does not provide the level of safeguard expected for residents in relation to turbine noise.

EIAR Chapter 8 Noise Page 9 :-

"Draft Revised Wind Energy Development Guidelines (December 2019), Department of Housing, Planning and Local Government, 2019; The final version of these guidelines have never been published, and they are not considered best practice. They are discussed, but not used in this assessment as they do not reflect current best practice."

The Shancloon EIAR states that the December 2019 Draft Revised Wind Energy Development Guidelines were "not considered best practice" and therefore not applied in the assessment. However, Fehily Timoney's own commentary on these draft guidelines discusses their content and implications for noise control, noting that they introduce changes such as lower noise limits and new penalties for tonal and amplitude modulation. This creates a clear discrepancy; the guidelines are dismissed in the EIAR while being acknowledged elsewhere by the same consultant as relevant to wind energy noise regulation. Draft Wind Energy Guidelines 2019 (Noise) Published - Fehily Timoney

17. Noise Survey Blind Spots

No noise monitoring was carried out at homes across the Black River in County Mayo, including the Brackloon area, some of which are approximately 800 m from Turbine 2. As a result, no representative baseline data was collected for this community. Without onsite measurements, the predicted noise levels for these properties are speculative and cannot be regarded as robust, particularly under southerly or easterly wind conditions when propagation towards these dwellings will be greatest. This omission

creates a significant blind spot in the assessment and undermines confidence in the reliability of the noise modelling for affected residents.

18. Construction Noise Impacts

The EIAR's treatment of construction noise is incomplete and fails to meet best practice standards under BS 5228. Critically, it omits any commitment to real time noise monitoring during the construction phase, leaving no mechanism to verify compliance with the 65 dB LAeq,1hr threshold or to respond to excessive noise. This is a significant gap, particularly given the proximity of homes such as R187, whose curtilage lies just 5m from the proposed access road and not 35m as stated in the EIAR. This road must be constructed first, meaning the home will be exposed to high noise levels from the outset of the project and throughout the construction period. The predicted levels are close to the regulatory threshold, leaving no room for error.

Furthermore, the EIAR fails to assess **drilling and piling activities for turbine foundations**, despite acknowledging that piling will occur. Only pressed-in steel sheet piling is modeled for the construction of the "floating road" in Cloonbar bog. This is not representative of the high impact, repetitive noise typically associated with drilling and piling turbine foundation works. This omission is substantial, as piling is known to cause significant disturbance and is often subject to stricter controls. Curiously, noise impacts are used as an argument to leaving the foundations in place on decommissioning.

The EIAR also overlooks the cumulative impact of over 46,096 heavy goods vehicle movements, many of which will pass directly in front of residential properties, on narrow rural roads with minimal setbacks. This traffic volume is likely to cause pronounced interference, nuisance and sleep disruption for residents.

Also overlooked is the noise impacts from horizontal drilling underneath the Togher river.

Without these elements, the EIAR cannot demonstrate that construction noise and vibration will be effectively managed. This leaves residents exposed to unassessed and potentially severe nuisances and undermines the reliability of the EIAR.

19. Conclusion

The cumulative evidence presented demonstrates that the EIAR's noise chapter is fundamentally unreliable. The baseline is compromised by contaminated datasets, data-handling irregularities and critical omissions that are inconsistent with the IOA Good Practice Guide, ETSU-R-97 methodology, the Draft Wind Energy Development Guidelines (2019) and EU EIA requirements. Under the EIA Directive (2014/52/EU) data must be accurate, representative and transparently derived:-

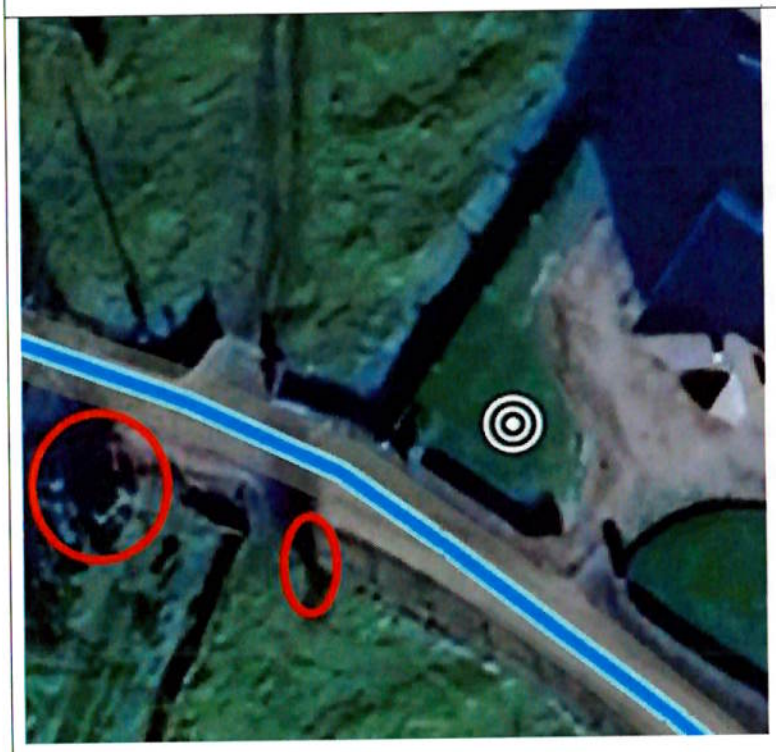
"Data and information included by the developer in the environmental impact assessment report, in accordance with Annex IV to Directive 2011/92/EU, should be complete and of sufficiently high quality."

The implausible uniformity and duplication identified within the baseline data breaches these standards, undermines the reliability of the predicted impacts and mitigation measures and fails to meet the requirement for scientifically robust and truthful assessment under the Planning and Development Act 2000 (as amended).

These deficiencies materially inflate permissible turbine noise levels and expose residents to unassessed risks of sleep disturbance, health effects and vibration, particularly given the sensitivities of the rural and karst environment. Despite the applicant having almost three years to analyse, validate and correct the monitoring evidence, the discrepancies remain unresolved and uncorrected. Given the scale and nature of the errors, no further opportunity should be afforded to revise or resubmit the baseline. An Environmental Impact Assessment must be competent upon submission and this one is not.

The EIAR cannot support informed decision-making and An Coimisiún Pleanála cannot rely upon noise limits derived from such non credible data without breaching statutory obligations for environmental protection, residential amenity and procedural integrity. The deficiencies identified constitute clear and sufficient grounds for refusal. **Permission should therefore be refused.**

Appendix – Noise Monitor Locations

Location N1	**Comment**
	Tall trees across the road.

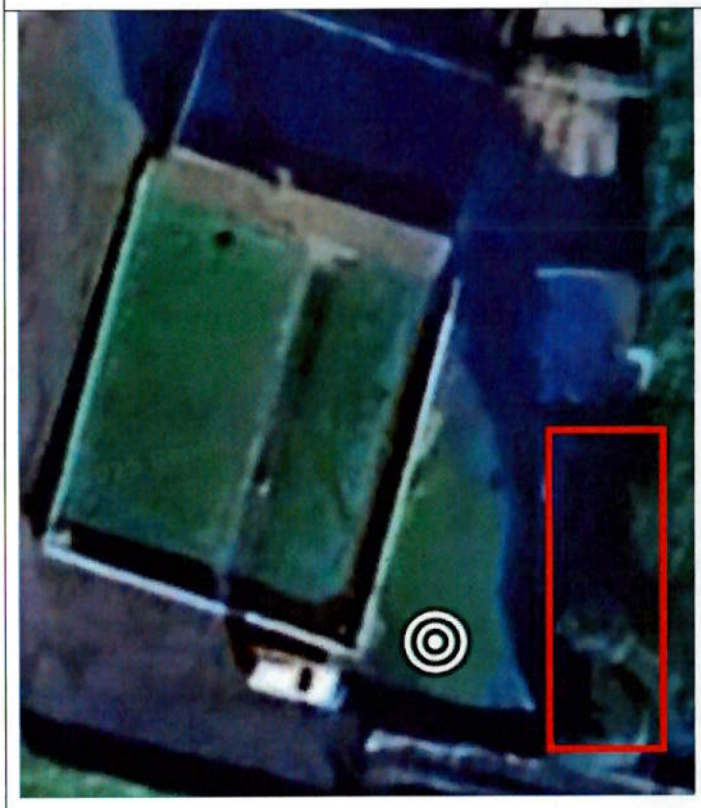
Location N2	Comment
	Noise monitor located near tall trees.

Location N3	Comment
	Noise monitor near line of tall trees.

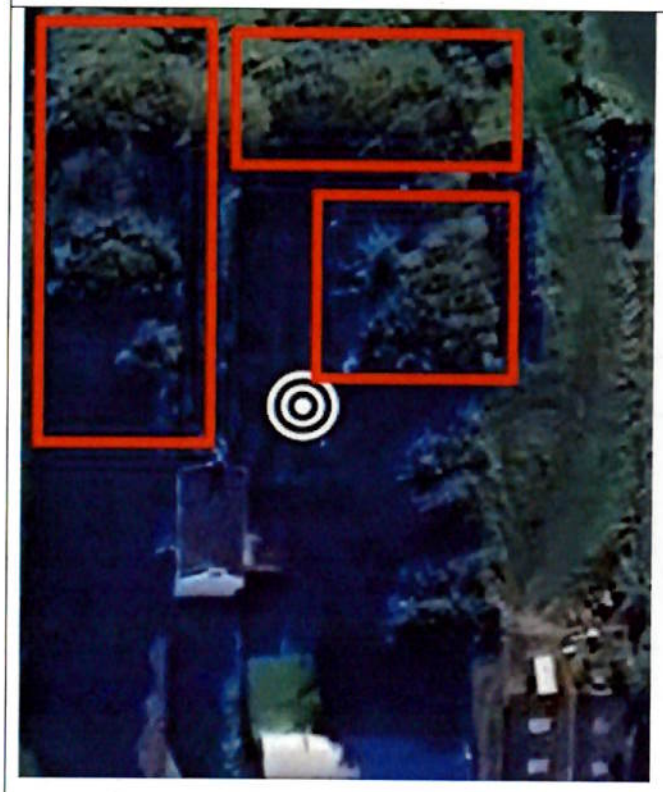
Location N4	Comment
	Trees near noise monitor.

Location N5	Comment
	Noise monitor fitted 7m away from 20m high evergreen trees.

Location N6	Comment
	Noise monitor between two groups of trees.

Location N7	Comment
	Noise monitor surrounded by trees.
Location N8	Comment
	Noise monitor located close to tall evergreen trees.

Location N9	Comment
	Noise monitor near hedgerow on local road. Trees at rear of property.

Sound Location N10	Comment
	Noise monitor surrounded by trees.

Sound Location N11	Comment
	Noise monitor surrounded by trees.

Sound Location N12	Comment
	Tall trees within a few meters of the sound monitor.

Chapter 11 Shadow Flicker

Author : Seamus Roche

1. Introduction

The Shancloon Wind Farm application fails to demonstrate compliance with the Draft Revised Wind Energy Development Guidelines 2019 (DWEDG 2019) requirement that no shadow flicker may occur at any existing dwelling or other relevant existing affected sensitive property. The EIAR's own analysis shows widespread daily and annual exceedances without curtailment, while the proposed mitigation relies on turbine mounted sensors and precalculated calendars with no receptor side verification, no redundancy, no independent auditing, and no escalation path, thus leaving residents without security for a projected 30-year lifetime.

Critically, the coordinates for Turbine 5 in the shadow flicker assessment are incorrect. This fundamental error invalidates the entire shadow flicker analysis and by extension, the EIAR, as all modelling and compliance claims are based on flawed spatial data.

The results of the modelling of the shadow flicker assessment indicate that 130 homes will be affected. In the so called "worst-case" scenario 61 homes would experience more than 30 hours of shadow flicker per year, well above the threshold set out in national guidelines. Even after applying a crude sunshine adjustment factor, 17 homes still exceed this limit. Daily, 80 receptors could be exposed to more than 30 minutes of flicker per day.

Instead of proposing meaningful mitigation, the application relies entirely on the vague promise of operational controls. There is no detailed, enforceable plan for how turbines will be shut down to prevent shadow flicker, no monitoring regime, and no mechanism for residents to verify compliance. Without a transparent and auditable control system, compliance is uncertain.

Turbine 5 Coordinate Discrepancy and Significance

A critical inconsistency exists in the EIAR regarding the location of Turbine 5 (T5). Appendix 13.2 of the Shadow Flicker Assessment lists T5 at Easting 533307, Northing 754159, whereas Chapter 2 and other sections of the EIAR consistently reference Easting 533285.84, Northing 754179.26. This discrepancy of approximately 29.3 meters is not a minor clerical error, it undermines the validity of the shadow flicker modelling, which depends on precise turbine to receptor geometry. Any error in turbine coordinates alters the calculated angles, distances, and resulting shadow flicker exposure for receptors. Consequently, the entire shadow flicker assessment and its compliance claims under DWEDG 2019 are unreliable and cannot be considered legally or technically sound.

2. Compliance Failure

The applicant relies on nacelle mounted sensors and calendars but offers no receptor side monitoring, no independent audit, no redundancy and no escalation path. Over a 30-year life, residents are asked to trust a single technology layer without safeguards or recourse. The proposed mitigation has single points of failure, if the SCADA system or turbine sensors fail, the entire shadow flicker control collapses. Turbines may continue operating and shadow flicker will occur undetected. No fail safe default to shutdown the turbine, sensor health monitoring, or redundant detection is specified. Nacelle sensors can be obstructed (dirt/ice/fault) and can miss scenarios where a dwelling window is sunlit while the nacelle is shaded (terrain masking, cloud gaps). Without receptor side verification, there is no evidence that shadow flicker is prevented at the receptor.

The EIAR applies a single 30% sunshine correction factor from Shannon Airport (1991–2020), ignoring local microclimatic conditions at Shancloon. Dawn/dusk fog and cloud variability can differ significantly from Shannon averages. DWEDG anticipates site specific assessment. Reliance on distant data undermines the validity of the "realistic" scenario and fails to demonstrate compliance under actual operating conditions.

3. Properties Not Assessed

The EIAR limits receptors mainly to dwellings excluding many occupied agricultural buildings such as milking parlours and cow sheds with large open facades. The DWEDG 2019 include *"at any particular dwelling or other potentially affected property"*. Farmers typically occupy these spaces at dawn and dusk to tend to their animals, which coincides with peak shadow flicker times. This is their place of work and should be protected, like any other workplace.

The EIAR proposes to remove residential use at residence SFAL004. However, it will remain a working farm with human occupancy and should be included in the modeling, to protect the farmer.

4. Health Risk Considerations (Photosensitivity)

Shadow flicker is not merely an amenity issue, it poses a health risk for medically vulnerable individuals. Authoritative health sources report that photosensitive epilepsy can be triggered by visual stimulation such as flickering light (typically 5–30 Hz), and even in non-epileptic individuals flicker may cause headache, nausea, dizziness and other symptoms. Natural sunlight flickering through trees or window slats is specifically identified as a potential trigger, an effect analogous to turbine shadow flicker.

5. Conclusion

The proposal offers no security for residents over the likely 30-year operational life. DWEDG 2019 anticipates planning conditions that guarantee zero shadow flicker through enforceable measures. Instead, the application proposes a single-layer, sensor-based approach without receptor-side monitoring, without redundancy, and without a clear escalation path. If sensors fail, become obstructed, or if sunlight reaches a dwelling while the nacelle remains shaded, flicker will occur undetected. Communities cannot be asked to rely on such an arrangement for three decades.

This lack of security is compounded by a material error in the EIAR: Turbine 5's coordinates by approximately 29 meters. Shadow flicker modelling depends on precise turbine-to-receptor geometry, so this discrepancy invalidates the entire assessment and its compliance claims. Residents cannot have confidence in mitigation measures when the underlying analysis is based on incorrect spatial data.

Chapter 12 Peat Management

Author : Seamus Roche

Peat and Spoil Management

This submission demonstrates that the Applicant's peat and spoil management is not evidence-based and not robust.

Their own documents show:

1. Peat depths and extraction volumes for Turbine foundations and hardstands are underestimated.

Example : The EIAR uses an average peat depth (e.g., 5.1 m for T1 hardstand) instead of the actual depth to competent material (8.0 m recorded at T1). This contradicts their own method statement requiring "founding on competent stratum". The result is a systematic understatement of peat excavation and stone replacement volumes, invalidating the peat/spoil balance and imported stone totals. This error cascades into traffic, noise, carbon footprint and programme assessments. The turbine base is also in 8m of peat but only a 3m figure is used to calculate the peat extraction volumes. If piling is assumed from 3m (unclear), then there is also an unquantified peat from piling works. This is the same for other Turbines in located in peat.

2. Peat under the substation is recorded to 2.3m (Chapter 11 Table 11-16) and artesian groundwater is present, yet zero peat is counted for the substation in the peat/spoil ledger.

3. Cable trench arisings, explicitly described and expected to encounter peat, are omitted from the peat/spoil totals. With only 0.7% headroom in the entire site-wide storage, the balance fails once trench rejects are included.

4. Landscaping volumes 22,000 m^3 (Appendix 11.4 Table 7-2) are used as a balancing figure without any evidence presented that the locations can accommodate these volumes.

5. Peat is proposed to be stored on peat (West "E") with no stability calculations. Same applies for Peat storage area East with potential peat with no assessment provided. This also has a knock-on impact on carbon calculations.

6. The volumes table gives no account of peat for the East compound (12,400 m^2) and admits "peat depth assumed based on aerial photos. No peat probe data. Assume floated construction". This is an evidence gap that could materially increase peat volumes.

7. The EIAR contradicts itself by stating "No peat shall be placed along access roads" while the construction method allows side-casting along adjacent access roads.

8. Imported stone of c. 217,541 m^3 is flagged in Chapter 11, with additional stone (bunds/pressure berms) not included, materially increasing traffic/haulage demands that are not transparently reconciled across chapters. Additionally, If peat extraction volumes are incorrect, then the stone required into the site will increase.

Conclusion

The Applicant's peat and spoil management plan is not merely deficient; it is fundamentally unreliable and incapable of supporting an informed consent decision. The EIAR contains systemic errors, omissions and contradictions that undermine its credibility:

- Peat excavation volumes are understated by using average depths instead of actual depths to competent strata, invalidating the peat/spoil balance and imported stone calculations.
- Entire categories of material, such as substation peat, cable trench arisings and East compound peat are excluded without justification.
- Storage proposals lack stability assessments, creating unquantified risks of peat failure and carbon release.
- Imported stone volumes are materially understated, with knock-on impacts for traffic, noise and emissions that have not been reconciled across chapters.

These flaws are not technical, they strike at the core of environmental integrity, traffic safety and carbon accounting. To approve this application would be to endorse a project whose environmental impacts have not been accurately assessed.

Chapter 13 Carbon Assessment

Author : Seamus Roche

Misleading Carbon Assessment in Shancloon EIAR

The carbon balance presented in the Environmental Impact Assessment Report (EIAR) for Shancloon Wind Farm is fundamentally flawed due to the use of an unsuitable methodology, unrealistic operational assumptions and incomplete lifecycle accounting. These deficiencies result in an overstated carbon benefit and undermine the validity of the planning assessment.

Use of an Invalid and Crude Carbon Assessment Tool

The EIAR relies on the Scottish Government Windfarm Carbon Assessment Tool (CAT), specifically version 2.14.1, which is explicitly marked by its authors as:

"Equivalent to version 2.14.0 but with worksheets unprotected for your own use. Do not use this version in planning applications."

This raises serious concerns:

- The version used is non-approved and non-secure, allowing formula changes and undermining result integrity.
- CAT itself is crude and unsuitable for Irish planning decisions:
    - Designed for Scottish upland peatland sites, not Irish conditions.
    - Outdated (last major update in 2014) and based on assumptions that do not reflect current science or Irish grid realities.
    - Omits full lifecycle emissions from turbine manufacture, transport, substation construction, HV/MV cabling and decommissioning.
    - Critically assumes wind farms always displace fossil fuel generation, ignoring Ireland's mixed renewable grid, where displacement is often of other renewables or low-carbon sources. This inflates carbon savings and shortens payback periods.

Unrealistic Energy Output Assumptions

The EIAR assumes:

- Capacity factor of 0.35 for 30 years.

- No curtailment due to grid constraints.
- No downtime for maintenance or major component replacement.

These assumptions are optimistic and inconsistent with Irish grid realities:

- Curtailment is common in the west of Ireland due to grid congestion.
- Turbine availability averages 94–97%, not 100%.
- Major maintenance events occur within a 30-year horizon.

Overstatement of Turbine Performance

- Average wind speed at Shancloon is 8.5 m/s between 20m and 150m.
- Nordex power curves show:
    - At 8.5 m/s, output is ~3.5 MW per turbine, not full rated capacity.
    - Full output is only achieved at 12.5 m/s, which is rare inland.
- This means turbines will operate below rated power for most of their life, making the assumed 35% capacity factor highly unachievable.

Incomplete Lifecycle Carbon Accounting

The EIAR omits major sources of embodied carbon:

- Piled foundations (large volumes of concrete and steel).
- Substation manufacture and civil works.
- Thousands of meters of HV/MV cabling and trenching.
- Construction compounds and access roads (over 13 km of tracks, including floated roads).
- Forestry clearance is limited (0.54 ha), so the dominant carbon risk is peat disturbance and hydrological alteration.

These omissions result in systematic underestimation of total project emissions.

Conclusion

The EIAR's reliance on a crude, outdated and invalid version of the Scottish Carbon Assessment Tool, unrealistic operational assumptions and flawed comparison to fossil fuel displacement results in an incomplete and misleading carbon assessment.

The proposed site lies within or adjacent to peatland habitats, critical carbon stores and integral components of Ireland's natural climate system. Disturbance, excavation, or drainage of peat during construction of turbine foundations, access roads and cabling can release significant greenhouse gases (CO_2 and CH_4), potentially offsetting or even exceeding the claimed carbon savings for many years.

The EIAR fails to provide a comprehensive, lifecycle greenhouse-gas assessment that accounts for emissions from peat disturbance, hydrological changes and eventual decommissioning.

Given these deficiencies, the carbon payback claims in the EIAR are unsubstantiated and unreliable. On this basis, the planning authority cannot have confidence in the claimed climate benefits or the adequacy of the assessment.

It is therefore reasonable for An Coimisiún Pleanála to consider refusal of permission, as the application:

- Relies on an inadequate and non-compliant carbon assessment methodology.
- Presents an elevated risk of net greenhouse-gas emissions due to peat disturbance.
- Provides climate benefit claims that cannot be verified or relied upon.

Chapter 14 Construction Traffic

Author : Seamus Roche

Introduction

The EIAR (Chapter 14, p.36) claims the Shancloon Wind Farm will generate 46,096 two-way HGV movements during construction. This figure is implausible. Based on the developer's own material volumes and standard truck capacities, the import of 217,541 m^3 of stone, 22,000 m^3 of concrete (at 8 m^3 per truck), and the export of 9,094 m^3 of spoil from the substation alone, would generate over 50,000 HGV movements. When the export and reimport of 191,201 m^3 of peat and spoil is included, a percentage of which is on public roads, the total number of HGV movements increases further.

This is before accounting for:

Abnormal loads for turbine and substation components.

Heavy plant deliveries, including two large cranes for turbine erection, rotary piling rigs for foundations, press-in/vibratory rigs for sheet-piled floated roads, a specialist horizontal drilling rig for the Togher River cable crossing, all delivered on multi-axle low loaders requiring escort and route controls.

Electrical equipment logistics including extensive cable and ducting deliveries between turbines to the substation.

Fuel deliveries, culvert/site drainage deliveries, site clearance including excavators, tree felling and export, bridge construction across the Togher river, Steel reinforcement (rebar) deliveries, site compound construction.

The substation development, on a footprint not much smaller than the pitch at Croke Park and comprising of several buildings as well as a 33 kV to 110 kV grid interface, is a major infrastructure element alone, requiring substantial volumes of concrete, steel, cable drums, transformers and other specialist electrical infrastructure.

There has been no attempt to accurately model the number of LGV movements. A flat figure is presented per month over the 24-month construction period. The EIAR indicates an average of 30 workers, peaking at 40 for a 24-month construction with multiple concurrent work fronts. This is not credible.

Construction Traffic Intensification

External bulk haulage (stone import to site)

Stone required: 217,541 m^3 for access tracks, hardstands, foundation up-fill and compounds. (developer's figure).

Loads required 21,754 or 43,508 round trips.

Concrete Supply Surges (foundation pours)

EIAR foundation assessment basis:- 1,600 m^3 of concrete per turbine, 17,600 m^3 across 11 turbines.

No estimates given for turbine hard stands, substation, met mast or other requirements for concrete. A figure of 4,400m^3 is assumed for this analysis.

Total of 22,000m^3 with 8 m^3 loads gives 2,750 trucks or 5,500 return trips. Many of which are time compressed pours that stack along the same access route.

Peat/Spoil Traffic

Excavation and storage: 191,201 m^3 of peat/spoil storage and then reinstatement, split across multiple areas (West A–F, East, T11) at 10m^3 per load.

The EIAR says the site is "delineated into western and eastern parcels" to limit (not eliminate) crossing of local roads for peat/spoil movement, later reinstatement along tracks/landscaping therefore requires thousands of additional truck trips, with interactions at the L-2234 gate and the internal L-2220/L-22204 crossing. It should also be noted that the only significant peat storage areas are in storage area west. This means any peat coming out of bogs in Cloonbar, Cloonsheen or Ironpool will have to cross public roads. These trips are not transparently included in the traffic chapter's assessment.

The export of 9,094 m^3 of spoil from the substation can only be on public roads covering a distance of at least 28km to spoil storage area east. This is 1,818 trips on local roads. A similar number of trips are required for reinstatement.

Abnormal Load Convoys (Blades, Towers, Nacelles)

From Galway Harbour through the N6/M17 interface to the R332/L-6483 and local roads, the convoys require repeated contraflow, verge oversail, removal of signal heads/columns/rails, culverting of ditches and local widening. That level of recurrent road surgery is inherently hazardous.

Large Cranes, Piling Rigs and HDD rigs

The EIAR confirms the use of two large cranes per turbine erection, rotary piling rigs (foundations), press-in/vibratory rigs and a specialist HDD rig for the Togher River cable crossing, all delivered on multi-axle low-loaders requiring escort/route controls. The EIAR references these major units repeatedly, but the traffic chapter never counts their trips nor shows special permit planning where applicable. These units demand route studies, escorts and strict timings and are not evidenced in the EIAR.

Electrical Equipment

The project involves repeated deliveries of large cable drums, joint bays, pulling equipment for 33 kV circuits to the substation, which runs to many kilometers. These movements will use constrained corridors (R332, L6483, L2234) and may involve abnormal load characteristics. Yet, the EIAR provides no trip counts, no scheduling, and no permit strategy for these critical logistics.

Substation

The proposed substation is a major infrastructure element, not a minor ancillary facility. Its footprint (123 m × 62.8 m) is almost as large in area as the pitch at Croke Park. It includes:

- A control building and an Independent Power Production (IPP) building.
- Multiple external electrical components and control panels.
- Cable sealing ends, surge arrestors, disconnectors, insulators.
- Circuit breakers, current/voltage transformers.
- Steel gantries, cable chairs, power transformers.
- Power quality compensation equipment.
- Concrete plinths and bunds.
- 2.5 m high steel palisade fence, with internal fencing to separate zones.

This substation will require:

Thousands of cubic metres of concrete, significant steel reinforcement, large cable drums and specialist electrical equipment, heavy indivisible loads such as transformers and gantries, requiring Special Permits, escort vehicles, and route-specific traffic management

These deliveries will traverse constrained rural corridors, many of which are unsuitable for abnormal loads without modification. Yet the EIAR provides no trip counts, no scheduling, and no permit strategy for these movements.

In isolation, this substation would warrant a standalone traffic impact assessment. Within the context of the full wind farm build, it represents a critical and unaccounted intensification of HGV traffic, one that cannot be ignored in any credible planning review.

Workforce LGV traffic (Underestimated)

The EIAR's 30 average to 40 peak workforce claim is not credible for a 24-month, multi-front development of this complexity (roads/drainage, piled foundations, cranes, electrical, HDD, substation). No LGV trip modelling, figures presented in the tables show the same numbers per month over the 24-month development. No park and ride measures are presented, contrary to modern traffic planning practice.

Unenforceable Designated Routes

The EIAR assumes hauliers adhere to nominated roads but sets out no enforceable route compliance regime (e.g. GPS geofencing/vehicle tracking, driver inductions with penalties). With the volumes above, any non-compliance would export risk to unsuitable local roads.

Conclusion

The traffic impact assessment presented in the Shancloon Wind Farm EIAR is critically deficient. The claimed figure of 46,096 two-way HGV movements is not supported by the developer's own material volumes, which when recalculated already exceed this number before accounting for abnormal loads, heavy plant, electrical logistics, and the large substation development.

Key traffic drivers such as concrete surges, peat and spoil movement across public roads, and the delivery of large indivisible loads are either underestimated or entirely omitted. The substation alone, comparable in scale to a major infrastructure project, has not been assessed with the rigour it demands.

The EIAR also fails to model LGV movements credibly, ignores modern traffic mitigation practices, and assumes route compliance without enforceable mechanisms. These omissions are not technical oversights, they represent a systemic failure to assess the true traffic impact of the development.

The EIAR does not provide a reliable or auditable basis for planning approval. The traffic case for Shancloon Wind Farm remains unsubstantiated and poses unacceptable risks to local infrastructure and community safety. **Permission should therefore be refused.**

Chapter 15 Aviation

Author: Mike Burke

Section Aviation analysis

In section 17.3 Methodology of the EIAR aa incorrect statement indicates the in relation to the proposed windfarms "*Galway Airport is located c. 25.4km to the south, but this airport is no longer operational.*". As can be seen from the Galway Flying Club website the club currently operates from Galway Airport and has done since 1974. The airport may not have commercial flights but remains operational.

https://www.galwayflyingclub.org/

In relation to Section "17.5.3 Aviation" the EIAR indicates that "*A detailed aviation review statement is included in Appendix 17.1: Aviation Review Statement, which concludes that the Proposed Development is remote from all IAA licensed aerodromes and radar installations, and from Irish Air Corps (IAC) Aviation Exclusion Zones and Garda Air Support Unit and Emergency Aeromedical Services.*"

Irish Air Corps (IAC) Aviation Exclusion Zones

With reference to the Department of Defence Letter "ACP-323699-25 - Department of Defence.pdf" the letter indicates that "The N84 route is identified as an Irish Air Corps low level route. The location of structures higher than 45m above ground within 3NM of the route centerline of low level routes should be considered."

As 3NM (Nautical miles) equates to 5.556 Kilometers with the following structures all are located inside this area

Turbine 1 at a height of 180m

Turbine 2 at a height of 180m

Turbine 3 at a height of 180m

Turbine 4 at a height of 180m

Turbine 5 at a height of 180m

Meteorological mast at a height of 110m and 4m lightning pole.

See image below

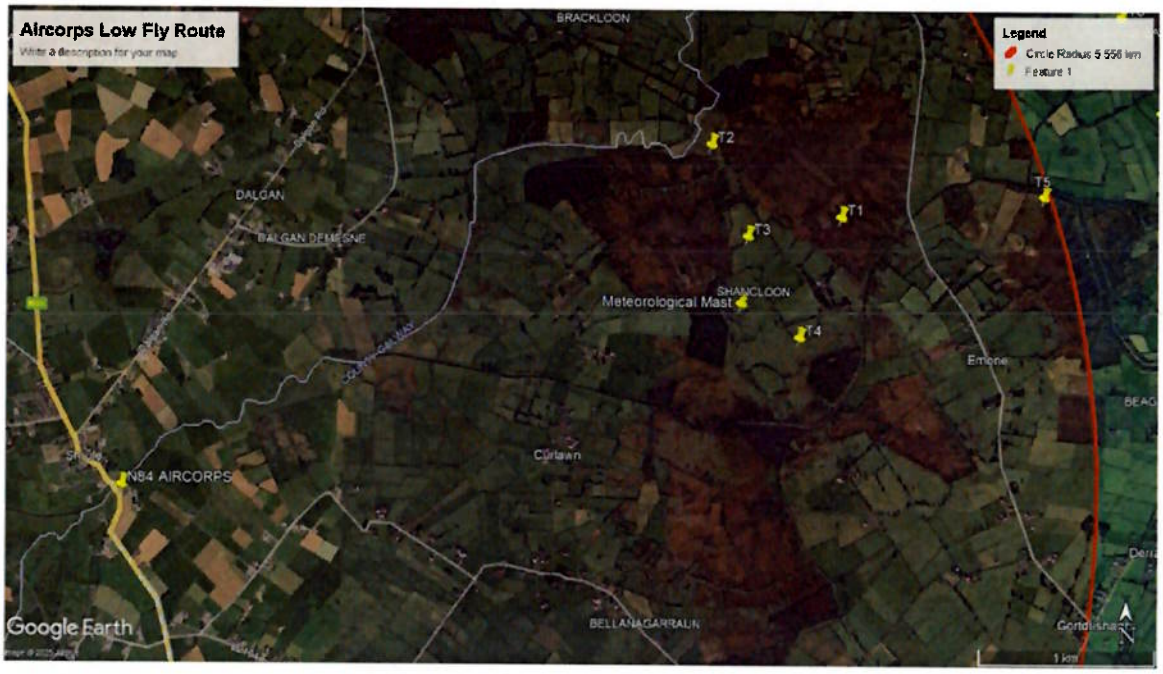


IMAGE SOURCE GOOGLE EARTH

Emergency Aeromedical Services

Whereas the EAS is based at Custume Barracks in Athlone and may not be directly impacted by the potential windfarm, the Coast Guard Helicopter which provides aeromedical support for the HSE is a regular sight in the sky over the proposed wind farm. From analysis of all flights by the ten helicopters in operation by the Coast Guard since January 2023 we have identified over 200 flights through the airspace corridor between the village of Shrule, Co Mayo and the town of Tuam Co. Galway. This corridor is currently the proposed location for two wind farms, Shancloon and Luarcalvagh. Not only do the proposed wind turbines pose a direct collision hazard in poor weather conditions research published from the University of Liverpool (ref. University of Liverpool – Wind Turbine Wake Encounter Study) and and cited by the recent IAA - National Aviation Safeguarding Framework Consultation Document indicates the wake effect of wind turbines can be noticeable for 16 rotor diameters (between 2.38 and 2.48 kilometers in this case) downstream of the wind turbines. As turbine hubs rotate 360 degrees depending on wind direction this creates a danger zone at a minimum 2.38 kilometers in all directions from each turbine in a windfarm.

Chapter 16 Cultural Heritage and Visual Impact

Author : Sarah Deane

Shancloon Wind Farm – Cultural Heritage and Visual Impact Submission

I am a visual artist living approximately one kilometre from the proposed Shancloon Wind Farm. My practice is rooted in the boglands near Kilconly, where I explore how personal and cultural histories are remembered, forgotten, and reimagined—particularly through photography, collage, archival materials, and collaborative projects. I work both independently and with local communities through initiatives such as *Bog Fam* and *Tales from the Bog*, which document oral histories, creative practices, and the lived experience of the bog. My work has been exhibited nationally and internationally, published both independently and in photography books, and I am currently Artist-in-Residence with *Friends of Kilconly Wetlands*. This experience gives me a close understanding of the bog's cultural, social, and artistic significance.

Tangible Heritage

The EIAR considers archaeology and architecture, but the proposed mitigation raises significant concerns. The development is located within an area containing 54 recorded archaeological sites, yet geophysical surveys and targeted test trenching are scheduled only post-consent. This approach allows the development to be approved before the findings are publicly available, limiting opportunities for consultation and potentially conflicting with the EIA Directive. While tangible heritage is addressed in the EIAR, the timing and scope of mitigation measures mean that public engagement on these important sites would be minimal.

Intangible and Living Cultural Heritage

The bog is a living cultural landscape, central to the identity and creativity of the local community. While the applicant claims to follow EPA, ICOMOS, and UNESCO guidance their application is limited in the EIAR with only folkore and placenames considered. The *Convention for the Safeguarding of the Intangible Cultural Heritage* defines intangible heritage as:

(a) oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
(b) performing arts;
(c) social practices, rituals and festive events;
(d) knowledge and practices concerning nature and the universe;
(e) traditional craftsmanship.

These assets are largely overlooked making this a significant omission given that the bog remains an active space for education, art, and cultural expression through projects like *Bog Fam* and *Tales from the Bog*, which sustain intergenerational connection and creative engagement with place.

The bog is also the site of planned future activity, such as an international digital arts festival embassy in 2026, which will involve international artists and the local community. By not considering these living cultural dimensions, the EIAR does not fully reflect the bog's role in sustaining community identity, creative practice, and its wider cultural and educational reach to national and international audiences.

No mitigation measures are proposed for the potential impacts on ongoing arts, educational, or community use should the development proceed. This omission is significant because, without protective measures, these intangible cultural assets are at serious risk of being permanently lost with lasting consequences for the bog's continued role as a space for cultural engagement and community connection.

These omissions are inconsistent with adopted policy, including the Galway County Development Plan 2022–2028 (Objectives CA 1 and CUH 1), the Galway County Heritage & Biodiversity Plan 2024–2030, and the National Biodiversity Action Plan 2023–2030, all of which emphasise protection of intangible heritage, support for community-led arts, and the link between cultural engagement, biodiversity, and wellbeing.

Visual Impact

The photomontages provided appear to significantly underrepresent the potential visual impact of the proposed turbines. All images are noticeably pixelated or heavily compressed. Many have visible artefacts around objects such as trees, hedgerows, buildings, and the turbines themselves. These artefacts can result from over-processing, compression, or poorly executed compositing, and they reduce confidence in the technical accuracy of the visualisations. In some cases, turbines appear unusually close to buildings or even aligned with structures, such as in VP10a, where a turbine seems to emerge from the top of a shed. The background landscapes are often soft or out of focus, contrary to guidance that requires the camera be focused to infinity. Across the set, very little achieves the level of clarity and technical accuracy expected for EIAR visual material under the stated methodology, *SNH Visual Representation of Wind Farms: Best Practice Guidelines* (version 2.2, 2017).

The quality of lighting and colour handling is also inconsistent with best-practice standards. Skies in multiple images appear blown out or lacking detail, obscuring sun direction and preventing accurate interpretation of visibility conditions. The landscape colours are frequently washed out, and the absence of "worst-case" scenarios such as white turbines against a clear blue sky limits the usefulness of the photomontages. In addition, the choice of weather and light in many images gives an impression of visual softness that reduces the apparent prominence of the turbines.

A clear example of concern is the photomontage VP13 (a&b) taken on 26 December 2023 at 15:55. The hawthorn bushes in full white bloom, along with bright fresh foliage across all hedgerows and trees, indicate that the photograph was captured most likely

in Spring and not mid-winter. The high, even lighting and minimal shadows are inconsistent with late-December sun angles in north Galway, when the sun sits extremely low and casts long shadows. This mismatch between the claimed date and the observable environmental conditions raises questions about the reliability of the other images in the set.

The selection of viewpoints further limits the validity of the assessment. Several photomontages are taken from locations without recognisable landmarks, making it difficult to understand their relationship to nearby communities. Views from the closest residences which will be the most severely impacted are limited with more attention given to towns many kilometres away. No images appear to be taken during summer and no night-time assessment has been included, despite mandatory aviation lighting required during operation of the wind farm and the area's designation in the Galway Development Plan as being currently 'largely free from light pollution'.

Taken together, the seasonal inconsistencies, soft or pixelated imagery, blown-out skies, visible artefacts, absence of summer and night-time assessments, and selective choice of viewpoints raise significant concerns about the accuracy, completeness, and reliability of the photomontages. These deficiencies make it difficult for the public to properly assess the true visual impact of the proposed development. Furthermore, these photomontages represent the only version made available; they were not displayed or discussed at the public meeting, limiting opportunities for informed comment and undermining the effectiveness of public consultation.

Conclusion

In summary, the EIAR for the proposed Shancloon Wind Farm fails to fully consider the rich cultural, social, and visual significance of Kilconly's boglands. Tangible heritage is inadequately mitigated, with key archaeological investigations deferred until after consent. Intangible heritage - including community arts, oral traditions, and ongoing educational and cultural projects - is largely ignored, putting these living practices at risk.

The visual impact assessment is undermined by technical deficiencies, inconsistent imagery, and selective viewpoints, limiting public understanding of the true scale of change.

Collectively, these omissions and shortcomings mean the EIAR does not provide a reliable or comprehensive assessment of the potential impacts of the development, nor does it safeguard the continued cultural, social, and environmental value of the boglands for the local community. For these reasons, I respectfully ask An Coimisiún Pleanála to refuse permission for the proposed development.

Conclusion

CONCLUDING REMARKS

The conclusion on this aspect is that the hydrological regime and the hydrogeological regime are the essential life force that maintains the rest of the habitats and the interaction between the ecology of the site.

It has been well demonstrated throughout the course of this submission across many different headings that the applicant's EIAR is not fit for purpose and does not meet the requirements for proper assessment and is fundamentally flawed.

Given the extant of evidence provided it should be clear that this application in any case is not sustainable in this location and the only decision merited here is a refusal of permission.

Had a meaningful scoping exercise been carried out at the outset it would have identified the area's unsuitability for this type of development.

The Commission is requested to refuse this application on the grounds stated.