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

17th June 2025
Our ref: 23408-24/JN/PW

RE: **Applicant:** Tullacondra Wind Energy Ltd

Development: The Applicant is seeking permission for the construction, operation and decommissioning of a wind energy development including: • 9 wind turbines each with a blade tip height of 175 metres, rotor diameter of 150 metres, hub height of 100 metres and a rated output of 4.5 megawatts. • Turbine Foundations, crane pad hardstanding areas and associated drainage. • Upgrade of existing site tracks and construction of new site tracks and associated drainage. • Access from the local road L5302 at Crought, Ballyclogh including a new site entrance for the construction phase and upgrading of an existing entrance for the operational phase. • An on-site 38 kilovolt electrical substation to Electricity Supply Board Networks specification to include control building with electrical infrastructure, welfare facilities supplied by rainwater harvesting and storage tank, a wastewater holding tank with high level alarm, car parking, security fencing and lighting, and all associated infrastructure, services, and site works including a temporary construction compound. • All associated underground electrical and communications cabling connecting the turbines to the proposed electrical substation. • A temporary site construction compound and associated ancillary infrastructure including welfare services, office accommodation, parking, fencing, lighting etc. • Areas for temporary storage of excavated materials. • A permanent meteorological mast of 100 metres height above ground level on a concrete base. • Installation of approximately 13.5 kilometres of 38 kilovolts underground electrical cabling, mainly within the public road, between the proposed wind farm substation to the boundary of Mallow 110 kilovolt substation at Saint Joseph's Road Mallow. • All associated site works including site clearance and ancillary development including site drainage/Sustainable Drainage System, security gates, fencing, permanent and temporary signage, and biodiversity mitigation and enhancements, including hedgerow planting. The Applicant is seeking a 10-year duration planning permission and 35-year operational period from the date of overall commissioning of the entire wind farm. The Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) will be submitted to the Planning Authority with the application.The wind farm development is proposed on a site in the townlands of Polnareagha and Ardskeagh (Templemary E.D.); and Tullacondra and Croughta, (Kilmaclenine E.D.),

At: Polnareagha, Ardskeagh, Tullacondra, Croughta, Kilmaclenine, Ballyclogh, Knockaunavaddreen, , Copestown, Ballybeg, Baltydaniel East, Twopothouse, Caurraghakerry, Co. Cork

Planning Registration Number: 24/5503 County Cork

Our clients: Tullacondra Turbine Awareness Committee c/o Mr Eoghan O'Grady, Chairman, Ballycushen, Ballyclogh, Mallow, Cork, P51 H2VH

Dear Sir/Madam,

We act on behalf of Tullacondra Turbine Awareness Committee, c/o Mr Eoghan O'Grady, Chairman, Ballycushen, Ballyclogh, Mallow, Cork, P51 H2VH.

Our client wishes to appeal the above decision issued by Cork County Council on 22nd May 2025. We enclose our **cheque** in payment of your fee of €220 We enclose the copy receipt from Cork County Council of our client's submission. *(Tab 1 of the enclosed ring binders [x2])*

Request for refusal

Our client asks the Board to refuse the Application.

The grounds and supporting reasons and materials for our clients' submission are set out below and they are further contained in the documents accompanying this letter. These include a number of expert reports on Freshwater Ecology (Pascal Sweeney) (*Tab 2)*, Hydrogeology (Aqua Geoservices Ltd.) (*Tab 3)*, Equine Impacts (Dr Desmond Leadon) (*Tab 4*), as well as materials prepared by people within the Committee and the wider community, organised under the following headings (*Tab 5*):

* Impact on Equine Industry
* Effect on Community
* Environmental Impact
* Health Implications of Wind Turbines
* Impact to Bovine Sector
* Economic
* Safety Issues for the Whole Community
* Safety – Sulphur Hexafluride (SF6) GAS
* Ecological Impact
* Hydrological Impact
* Impact on Wildlife in Community
* Archaeology Impact
* Access Roads to The Proposed Site
* Additional Considerations
* Environmental Schemes
* Aviation Impact

* Wind Farm & Turbine Design Impact

About Our Client

Our client is a committee formed by and for people in the area around the proposed development and in the wider area likely to be affected by it.

We enclose a set of signatures *(Tab 6)* indicating the extent of that support our client enjoys. That support is also apparent from the content of the submissions filed with the Council, whose file you will shortly receive.

This is a major development with the Applicant's costs in preparation of the application, EIAR and NIS likely to comfortably exceed €1 million.

The community cannot match that spend, and so our client has had to focus on certain selected issues, rather than addressing every ground for refusal. Our client knows that others are raising further grounds (or amplifying certain of our client's ground) in their own appeals to the Board as well as identifying additional serious errors and omissions in the Applicant's documentation. Our client supports and adopts those additional grounds and reasoning.

We present our client's appeal mindful of the three distinct tasks the Board will perform, namely:

1. Assessing whether the development is in keeping with the proper planning and sustainable development of the area.

2. Deciding on its environmental impacts and their acceptability, including adjudicating on the adequacy of the EIAR furnished on behalf of the Applicant.

3. Carrying out an Appropriate Assessment under the Habitats Directive and national legislation; satisfying itself that there is no reasonable scientific doubt as to impacts, within the meaning of the Directive.

At the risk of stating the obvious, the Board is not adjudicating between the relative strength of the case made for, and the case made against, granting permission by the parties in a simplistic or mechanistic fashion. Instead the Board is to independently scrutinise the application, the EIAR, the Natura Impact Statement, and all information submitted to it during the process, so as to reach a fully informed, robust, lawful decision.

With a complex proposed development like this one, we acknowledge the task before the Board is anything but straightforward.

Preliminary point on illegality of Council decision

There is an unusual feature to the Council decision making, of which the Board needs to be aware.

Our client and the public generally had to read the application material, consider it, and seek expert advice on it so as to complete their submissions to the Local Authority within a period of just four weeks. (The Act requires five weeks, but it was four, taking into account that the material was only made widely available when it went online one full week after it was received by the Council).

The Council sent a letter requesting further information to the Applicant dated 3 October 2024, allowing a period of six months for a response. The Applicant replied on 28 March 2025. The reply was over five hundred pages in length.

The Council treated the reply as being significant, and circulated the material to its own internal departments seeking comments from their perspectives. It also copied it to multiple public bodies, similarly inviting their views. Several substantial replies came back.

The Council did not invite public comment on the material. Without explanation, an entry appeared briefly on the Council website indicating that the public could comment by 1 May 2025 but this was removed.

The public concerned was deliberately denied any opportunity to comment on the additional material submitted by the Applicant, or on the commentary on it made by those whom the Council chose to copy it to.

As a result, members of the public who may have wished to participate were excluded from the process.

We consider that this exclusion decision was unlawful and contrary to fair procedures and public participation rights. As a result, the Council permission decision in our view is unlawful.

Being aware of the desirability of minimising delay in dealing with renewable energy development and also of public policy in favour of avoiding litigation if there is an alternative course of action

available, we have advised our clients to raise the issue in this appeal so we now bring that omission and consequent illegality to the attention of the Board, rather than to seek a judicial review of the Council decision.

While the Board cannot fully cure the matter at this stage it can now act to protect the public to a certain extent, including members of our client group.

We ask that the Board should immediately –

arrange for appropriate publication of the fact that the Applicant provided substantial, significant, additional material with its response to the Council request for further information;

ensure that the material is made freely accessible to the public;

invite the public concerned to make any observations they wish to make on that material to the Board within a set, reasonable period, without charge;

confirm it will take any such observations into account in its decision making.

If the Board declines to take these steps, in view of the gravity of the matter we reserve our client's position in that regard.

Summary of grounds

Our client submits that the proposed development should be refused, inter alia, because it is not in accord with the proper planning and sustainable development of the area, by reason of the failure of the Applicant to provide a reliable EIAR compliant with the requirements of the EIA Directive and national legislation; failure to assess a relevant Qualifying Interest of SAC 002170 and for the following reasons:

1. An existing deficiency in the road network serving the area of the proposed development, rendering that network, or a part of it, unsuitable to carry the increased road traffic likely to result from the development,

2. Development as proposed would be premature pending the determination by the planning authority or the road authority of a road layout for the area or any part thereof.

3. The proposed development would endanger public safety by reason of traffic hazard or obstruction of road users or otherwise.

4. The proposed development would interfere with the character of the landscape or with a view or prospect of special amenity value or natural interest or beauty, any of which it is necessary to preserve.

5. The proposed development would cause serious noise pollution and water pollution.

6. The development envisages works and/or structures which would—

    (a) be under a public road,

    (b) seriously injure the amenities, or depreciate the value, of property in the vicinity,

    (c) tend to create any serious traffic congestion,

    (d) endanger or interfere with the safety of aircraft or the safe and efficient navigation thereof,

    (e) be prejudicial to public health.

7. The proposed development would injure or interfere with a historic monument which stands registered in the Register of Historic Monuments under section 5 of the National Monuments (Amendment) Act, 1987 , or which is situated in an archaeological area so registered.

8. The proposed development—

    (a) would contravene materially a development objective indicated in the development plan for the conservation and preservation of a European site insofar as the proposed development would adversely affect one or more specific—

        (i) (I) natural habitat types in Annex I of the Habitats Directive, or

            1. (II) species in Annex II of the Habitats Directive which the site hosts,

2. and which have been selected by the Minister for Arts, Heritage, Gaeltacht and the Islands in accordance with Annex III (Stage 1) of that Directive,

3. (ii) species of bird or their habitat or other habitat specified in Article 4 of the Birds Directive, which formed the basis of the classification of that site,

4. or

    (b) would have a significant adverse effect on any other areas prescribed for the purpose of section 10 (2)(c).

Development Context

Our client recognises the vital importance of renewable energy. Our client does not however give unconditional support to the extent that normal and prudent planning and environmental standards are abandoned or given mere lip service. In particular our client wishes to place before the Board the entitlement of its members and the community it serves to respect for their personal, family, and property rights under the Constitution and the law. This is not a theoretical position. Recent High Court decisions have reinforced our clients in their view that the planning system has seriously failed to strike the correct balance in the past when permitting industrial scale wind energy installations. They invite the Board to examine the application against that background.

Proper Planning and Sustainable Development of the Area

Designation criteria
The Applicant correctly states that their proposed development is in an area marked *'open to consideration'* for renewable energy development proposals in the Cork County Development Plan. That openness to consideration however is predicated on a number of critical factors, and it is our client's submission that the proposed development does not satisfy the mandatory pre-conditions.

We refer to page 42 of the Planning Report filed in support of the Application by their consultants RSK. At Item 6 in the Table on Page 42 of the Report you will see the designation.

The relevant Plan text includes the following (our emphasis added in bold):

"Commercial Wind Energy Development is open for consideration **where proposals can avoid adverse impacts** *on:*

- *Residential amenity, i.e. noise, shadow flicker and visual impact;*

[……]

- *Proposed NHAs and other sites and locations of significant ecological value;*
- *Architectural and archaeological heritage;*
- *Natura 2000 sites (SPA's and SAC's), Natural Heritage Areas (NHA), proposed Natural Heritage Areas; and*
- *Visual quality of the landscape and the degree to which impacts are highly visible over wider areas.*

In planning such development, consideration should also be given to the cumulative impacts of such proposals."

Failing any one of these pre-requisites disqualifies a proposal from further consideration.

The proposed development fails to avoid all of those listed above.

The EIAR admits there will be adverse impacts from the operation into the future. It makes these admissions for example in relation to noise impacts (though grievously understating them as we will explain later), archaeological heritage and visual impacts on the landscape.

Those admissions carries with them an obvious consequence, namely Board refusal of the application as it fails to satisfy the designation requirements.

However, the developer attempts to escape that conclusion by claiming in many instances that the impacts, though adverse, will not be significant.

We support the point made by Mr William McSweeney in his submission to the Council (*Tab 7*), which the Board will see, about the unsatisfactory approach to the characterisation of significance used by the developer generally.

On noise, the EIAR asserts that noise levels from the operation will comply with 2006 WEDG noise criteria, ETSU-R-97 and the IOA GPG, claims that therefore there will be no significant effects on people living and working nearby, and accordingly insists that the Project complies with planning policy so far as the designation preconditions are concerned.

This argument is fundamentally misconceived.

The 2006 WEDG noise criteria do not protect residential amenity, as the High Court has found in two cases heard together, **Webster and Rollo, and Shorten and Carty v Meenacloghspar Wind Ltd.** (Judgment of Egan J. 8 March 2024, *Tab 8*).

Similarly, in the recent case of **Byrne and Moorhead v ABO Energy Ireland Ltd and others**, the High Court has once more, in a most detailed judgment, found that noise nuisance of a profoundly disturbing nature can be experienced in a home over one kilometre from turbines, an outcome that was completely discounted, wrongly as is now seen, during the planning process.

In a second judgment in the **Webster and others** case and also in the **Byrne Moorhead** case, two High Court judges have granted orders restraining turbine operations at the two windfarms.

In the **Byrne Moorhead** case three turbines have been ordered to be shut down permanently. (Judgment of Egan J. 27 May 2025, *Tab 9* and Judgment of Quinn J. 5 June 2025, *Tab 10*)

These windfarms both had planning permission. It took the plaintiffs eight years in the first instance and over 12 years in the second case to a point where they could satisfy a Judge that their lives had been gravely and unlawfully affected. The problems were predictable, and (in the Byrne Moorhead case) predicted. The predictions of noise nuisance were soundly based, yet they were ignored. Noise conditions were ineffective. The planning system had let them down.

This present application relies on what these judgments show to be a wholly outdated and discredited basis for predicting and assessing noise impacts. We submit that the Board cannot accept the soothing assurance given on behalf of the Applicant in light of current science and having regard to the facts and the law as expressed in the judgments delivered in the cases cited.

The application should be refused because it is in material breach of the County Development Plan goals as expressed through Objective ET 13-4 and 13-7.

Equine impacts

The Council Veterinary Inspector recommended refusal on this ground. Her recommendation was not accepted. The grounds in the Planner's Report for refusing to take her advice are that (a) Equine

impact is not dealt with in the 2006 Wind Energy Development Guidelines and (b) there is no 'peer reviewed' evidence supporting her advice. These reasons are, we submit, unsound.

We enclose two documents prepared by Veterinary Specialist Dr Desmond Leadon. The first in September 2024 was sent to the Council and the second is dated June 2023) *Tab 4.* These echo and expand upon the refusal recommendation made by the Council's own Veterinary Inspector. He also addresses the Planner's reasoning for disregarding the professional advice of the Council Veterinary Inspector. *Tab 11.*

Dr Leadon is a recognised Veterinary Specialist, registered as such with the Veterinary Council of Ireland.

The Veterinary Council website provides the following information with regard to Veterinary Specialists:

> ***"Veterinary Specialist Register***
>
> *A 'Veterinary Specialist' is a veterinary practitioner registered with the Veterinary Council of Ireland ("the VCI") who has a higher degree of skill and/or knowledge above that of a general veterinary practitioner in the same discipline.*
>
> *The VCI maintains a Register of Specialists whereby persons who have successfully completed post-graduate diploma-level qualifications, usually entitling them to diplomat status in approved European institutions, may apply to be recognised and registered on the Specialist Register.*
>
> *Only veterinary practitioners registered with the VCI as specialists under Section 47 of the Veterinary Practice Act 2005, as amended, are entitled to refer to themselves as specialists in Ireland.*

We are not clear as to the authority status of the 'Equine Welfare Assessment' supplied to the Council with the reply to the RFI on behalf of the Applicant.

The title page bears the name of Michael P Sadlier, whose qualifications are set out. Then it says: *Equine Veterinary Consultancy, 108 Sandford Rd., Ranelagh, Dublin.*

On page 3, it is said that *'Equine & Veterinary Consultants were invited by [the Applicant] to examine and report on the potential impacts'* etc.

Page 4 under *Statement of Authority* reads – *'This report was prepared by Michael Sadlier of Equine and Veterinary Consultants (EVC). Equine and Veterinary Consultants was established in 2018 by founder and CEO Michael Sadlier.'.*

We can find no company known as *Equine and Veterinary Consultants* in the Companies Registration Office. Nor does that name appear on a search in the Registry of Business Names.

(There is a company, registered in 2021, named Equine Veterinary Consultancy Limited, of which Michael Sadlier of 108 Sandford Rd., Ranelagh, Dublin is a Director. However that company is not identified as being responsible for the document).

There is an express need for clarity where expert opinion is tendered to the Board in the EIA process. That clarity is absent in this case - specifically as to which legal entity is in fact responsible for the material.

Finally, we also refer to the separate appeal lodged by Arthur and Eoghan O'Grady which addresses the issue of impacts on equines from their own expert perspective, giving examples of errors or omissions in the material submitted on behalf of the Applicant. Our client supports that appeal in full.

Freshwater ecology and the Habitats Directive

Please refer to the enclosed detailed report by Pascal Sweeney. This report concludes:

With the use of outdated, unreliable field survey methods, deviations from standard methodology, inexact invertebrate data, incomplete FPM surveying, and no assessment of a relevant Qualifying Interest of SAC 002170, the Aquatic Ecology Baseline Report for the Tullacondra Green Energy Project is not adequate for accurate determination of potential impacts on aquatic habitats and species.

Hydrological risk assessment

Please refer to the enclosed Aqua Geo Services report. It states in conclusion –

The hydrogeological assessment presented in the Environmental Impact Assessment Report for the proposed wind farm development is fundamentally inadequate and fails to meet the level of rigour required for a project of this scale, complexity, and environmental sensitivity. While the EIAR outlines the general hydrogeological context using publicly available data, it does not provide sufficient site-specific baseline information necessary to identify and evaluate the potential risks to groundwater receptors.

Key data gaps include the absence of direct measurements of groundwater levels, flow direction, and hydrochemistry, particularly within the highly vulnerable karstified Waulsortian Limestone aquifer. The reliance on outdated, regional-scale studies, carried out over a decade ago for unrelated purposes, further undermines the credibility and relevance of the conclusions drawn.
The EIAR also fails to properly address the presence and vulnerability of private wells. No targeted well survey was conducted, despite the rural, agricultural nature of the area and the known limitations of the Geological Survey of Ireland's well database. This omission renders the assessment of potential effects on groundwater- dependent receptors (such as domestic and/or agricultural wells) both speculative and unreliable.

Moreover, the mitigation strategy presented cannot be deemed robust or effective, as it is not based on a proper understanding of site-specific hydrogeological conditions. Without groundwater monitoring wells, verified receptor locations, and established baseline groundwater quality data, the proposed mitigation measures cannot be validated, and compliance with environmental protection standards cannot be assured.
Given the karstic geology (presence of many karstic features surrounding the proposed turbine locations), structural complexity, and documented extreme groundwater vulnerability of parts of the proposed site, the deficiencies in the EIAR's hydrogeological assessment represent a potentially serious and unacceptable risk to local water resources.

These shortcomings render the EIAR's conclusions on likely significant effects incomplete and unreliable.

In light of these fundamental weaknesses, it is respectfully submitted that the planning authority should not grant permission for this development unless and until a comprehensive, site-specific hydrogeological investigation is undertaken, and a revised assessment, based on proper field data, is made available for public review.

Road network

Transport Infrastructure Ireland termed the application premature for the reasons given in their letter to the Council of 2 September 2024. Our clients agree. In addition to the concern expressed by TII in relation to protecting the development of the national road network within its remit, our clients share the concerns voiced directly to you by so many of their neighbours about the impact of the proposed development on the local road network. Impacts range from the volume and scale of construction traffic being wholly unacceptable and destructive of local amenity use by children and adults alike to an apparent intention to use private property under and adjacent to the public road network for construction of the grid connection route without having the necessary landowner consents (*Tab 12*). The enclosures include individual and collective objections relating to a number of serious aspects of the application. These include for example, multiple landowners along the grid connection or turbine delivery route options asserting their right not to permit works running through their property, others advising the Board that they did not consent to entry onto their property for any purpose relating to preparation of the EIAR, and yet more who identify prospective interference with their property resulting from the works, to which they do not consent.

The application should be refused on this basis.

There is unacceptable uncertainty around the turbine delivery route, something commented on also by Transport Infrastructure Ireland. Given that whichever route is chosen entails significant works to enable the loads to be transported, we submit that a defined route should have been identified by now and that it should have formed part of this planning application.

In its absence, this application should be refused as premature.

Negative long-term community impacts

Proper planning and sustainable development is a matter of judgement by the Board bringing its expertise to bear as a statutory planning authority. That is matter of planning judgement and not a popularity contest. That said, we submit that the exceptionally high number of submissions sent to the Council, together with their content, depth and quality, illustrates some of the fundamental planning difficulties facing the application. The submissions from people in the area to the Council

(more than one hundred in number) underline in multiple different ways how the proposal threatens sustainable ways of life and sustainable development already in being in the locality.

Whether from older people living alone, young people starting out in life, parents rearing children, specialist teachers of children with Special Needs, farming families, equine interests, people working from home, or people facing health challenges rendering them vulnerable in differing ways, a common strand in the submissions on the Council file, as the Board will see, is advice from a diverse and strong, sustainable community that this proposal cannot proceed without causing profound long-term damage to the social, ecological and economic fabric of the area. That is a critical planning issue.

The application should be refused on this basis.

Environmental Impact

The Environmental Impact Assessment Report is a cornerstone in the EIA process. It must contain all of the necessary information and data to enable the Board to reach a reasoned conclusion with regard to the environmental impacts of the proposed development. The data must be accurate, reliable and complete. It must not be selective, misleading or partisan.

It is a statutory requirement that the authors of the Environmental Impact Assessment must have appropriate competence.

If these requirements are not met, the EIA does not pass the legal threshold and accordingly the Board is precluded from granting planning permission for the development as presented.

We submit that the EIAR fails to meet these requirements.

To demonstrate this, we will refer to the EIAR chapter on Noise, Chapter 13 and the related Appendix 13.2.

Noise Floor of monitoring equipment

The baseline noise survey graphs are at section 13.6.3 of the EIAR.

Please see the night time graph BN3 at page 13-26.

You will see that there is a linear clustering of data points in the graphs, running from left to right, at a point just above the 15 dB line in the graph.

There is no data point in the graph below that point at any time.

The monitoring equipment used at this location is said to be a Bruel and Kjaer 2250 S/N 3002365. See p. 13-16.

We attach an extract from the specification for that equipment provided by the manufacturer (*Tab 13)*. It declares that the monitoring equipment has a *noise floor* of 16.6dB. As you will appreciate, the noise floor is the level of noise internally generated by the equipment itself, and below which it cannot monitor. It can never report any quieter noise.

Any results taken from that equipment will be – by definition – no lower than the noise floor of the equipment.

We make the following points arising from these facts.

Firstly, this limitation of equipment is not frankly disclosed in the EIAR. Neither the public nor the Council was alerted to it.

The Council assessed the document in evident ignorance of that limitation, and makes no reference to it in its own internal reports nor is it disclosed or accounted for in the Acoustician's report commissioned by the Council.

Secondly, the graphs presented cannot be relied upon as accurately setting out night time noise.

Thirdly, the Board has no way of knowing what the night time noise level is.

Fourthly, the Board cannot know or calculate what the increase over present level of night time noise will be once the turbines commence operation. It therefore cannot assess the level of change in the soundscape of the area at night, the critical time while people are at rest or sleeping. In other words, it cannot assess impact.

Fifthly, being unable to assess impact, it cannot grant permission, as prior assessment of impact is an essential precondition to the Board fulfilling its role under the EIA Directive and national legislation.

Amplitude Modulation wrongly called rare

In chapter 13 at 13.4.2.2 there is an assertion that 'special sound characteristics of turbine noise such as Amplitude Modulation are *'rare'* and cannot be foreseen at planning stage'.

Emphasis added:

> *13.4.2.2 Vibration and Special characteristics of turbine noise*
>
> *Vibration emissions from operational turbines will not be significant or perceptible at distances representative of nearby sensitive receptors.*
>
> *Potential special sound characteristics of turbine noise, such as Infrasound, Low Frequency Noise, Amplitude Modulation and Tonality, are discussed in EIAR Volume III, Appendix 13.2.* ***These characteristics are rare and are not factors that can be foreseen at planning stage,*** *but their presence can be measured and rated, typically in the event of a complaint, post construction. It is therefore standard practice for special sound characteristics to be investigated, only in the event of complaint, and, where the investigation verifies their presence, mitigation measures put in place to address any identified significant adverse turbine noise characteristics. Any monitoring that may be required by the Planning Authority, as a condition of a grant of planning permission, in relation to noise will be complied with.*

That assertion of rarity and of unforeseeability at the planning stage is unscientific, unsupported by current research and utterly unreliable. The suggestion that there is some form of effective mitigation available is entirely vague and completely unfounded.

The notion that the Board should somehow skip past this issue as it can be *'addressed'* in the future is an invitation to the Board to abdicate its statutory responsibilities.

The EIA process has to be forward looking, not retrospective. The Board by law has to be in a position to assess likely significant impacts *before* it makes its decision. The judgments of the High

Court in the cases of **Webster and Rollo**, **Shorten and Carty**, and **Byrne Moorhead** serve as grim narratives of the harm done when that essential measure is overlooked at the planning stage.

Amplitude modulation is now recognised as a significant, widespread and problematic feature of wind turbine noise. Low frequency noise similarly. Further, there is no example given of any such *after the fact* alleged mitigation measures being successfully adopted. There is mere bland assertion to that effect. This is quite remarkable hubris when one stops and considers it.

On the contrary, the public record is now replete with cases where adverse noise impacts from wind turbines have arisen despite soothing predictions couched in similar terms in EIARs, remaining unresolved, even after years of suffering, so that the appalling outcome of home abandonment has occurred in multiple locations including within County Cork.

As far back as 2016, a Cork County Council Senior Planner went on the record as believing that the 2006 WEDG were no longer fit for purpose. Kevin Irwin in his report to Cork County Council on Planning Application Reg Ref 15/730 (windfarm at Carrigareirk) dated 22nd February 2016 wrote:

> *"I am of the view that the existing 2006 Wind Farm Guidelines are not-fit-for-purpose given the changes in wind-turbine development over the past 10 years:[...]* .
>
> *I acknowledge the National Renewable Energy Efficiency Targets and the commitment to reach these targets by 2020. I am aware that wind energy as a renewable-energy resource is expected to provide the bulk of the planned renewal energy in the period to 2020.* ***However, a balance must be struck between such national targets and the property rights of those with the potential to be adversely affected by windfarm development. I believe that each case must be assessed on its merits by having regard to national energy policies and the local impact on the natural environment and the lives of local people.***

Mr Irwin's words were well founded nine years ago and they can fairly be described as prescient given recent Court judgments.

Wind turbine noise - the Webster Case

We will look closer now at the judgment in the two cases, heard together, of **Webster/Rollo and Shorten/Carty v Meenacloghspar (Wind) Limited [2024 IEHC 136]** delivered on the 8th March 2024. (Tabs 8&9).

Among other findings, these cases demonstrate that the method of noise assessment used by the planning authorities to date has been grossly deficient and that noise conditions, based on use of simple decibel limits, do not protect the public.

Planning authorities conventionally apply conditions precluding for example odour nuisance outside a site boundary. Applying a similar condition relating to noise nuisance would warrant serious consideration in applications otherwise acceptable in planning and environmental terms.

After a meticulous examination of all the evidence tendered during a hearing that ran from November 2022 until May 2023, Ms Justice Egan held that wind turbine noise (WTN) had special characteristics such as low frequency and Amplitude Modulation. The noise was of a character, volume and frequency of occurrence that it unlawfully interfered with the ordinary use and enjoyment of the two sets of plaintiffs in their homes. The interference was such that any reasonable person would find it intolerable. One of the residents was forced to leave their home. One couple sold up and left the area.

Each such case must be decided on its own facts. The turbines in this application are not proposed to be as close to homes as those in Ballyduff, though they are comparable to the distance in **Byrne Moorhead** and in some instances closer. The towers are much taller, with greater rotor diameters and they are if course to be fitted with significantly larger 4.5MW generators in the nacelles than the 2.3MW turbines in the Wexford cases.

Nevertheless Ms Justice Egan's and Mr Justice Quinn's decisions have clarified the proper approach to the assessment of noise nuisance complaints concerning wind turbines. They have highlighted the negligible value of reliance on out-dated methods of acoustic measurements, involving methods of noise averaging and reliance on dBA values alone, to assess the actual impact of wind turbine noise on people in their homes.

Defence claims that compliance with guidance such as that contained in the Wind Energy Development Guidelines 2006 was sufficient to protect residential amenity from unacceptable adverse noise impacts are unsustainable and pass the threshold to be called irrational.

The applicant here however ignores all that, does not address the judgment's findings or the science considered by the Court, but instead firmly pins its colours to the mast of the outdated 2006 WED Guidance and on ETSU-R-97, with a reference to the IOA GPG.

At 13.4.2.1 it asserts, wrongly:

> *"Noise.*
> *Wind Energy Development Guidelines.*
> *Section 5.6 of the "Wind Energy Development Guidelines" (2006) (WEDG06) outlines the appropriate noise criteria in relation (sic) wind farm developments."*

We regret to have to say that this is not a credible claim.

The Board is faced with a question - does it accept the applicant's assertion that there will be no significant noise impacts for the unsound reasons it puts up? Or does it accept the findings of the two judges of the High Court, the advice in scientific studies, and the recommendations of the recent comprehensive review of ETSU for the UK government?

All of these are consistent with the real world experience of several individuals and families in County Cork and elsewhere to the effect that wind turbine noise – from *permitted* windfarms - has harmed them in their homes, in some cases forcing them to leave, something that the planning applications either failed to contemplate as potential impacts, or were dismissive of, in terms accepted by the Planning Authorities.

We submit that assertion by the applicant that there will be no significant adverse noise impact on the community in the area cannot be accepted.

It follows that the application cannot be considered for approval given the preconditions to the Plan designation *'open to consideration.'*

There is a separate EIA point.

The material in the EIAR is not reliable and so does not support the conclusion claimed for by the applicant. Noise impact is a fundamental issue of concern. It is not a side issue or one that can be discarded or discounted in any overall weighting exercise. If the Board in exercise of its EIA function cannot accept the conclusion urged on it by the applicant concerning noise impact, we submit that refusal is the proper outcome in the circumstances.

Technical Note

We enclose a Technical Note (*Tab 14*) prepared by Sarah Large, Acoustic Consultant, Walker Beak Mason Limited, Acoustic Consultants, dated 20th June 2024 in relation to a similar application currently before An Bord Pleanála. Ref. ABP 308210-20.

That application is similar also in the way that Amplitude Modulation is said by the applicant to be rare and not a matter to be specifically assessed or conditioned at the planning stage, but rather to be considered somehow, if and when it arises once the wind turbines are operational.

This Note contains an expert's opinion that is of direct relevance to the present application and it is tendered for that reason, with the express permission of Ms Large and of our clients who commissioned it in that case.

Ms Large is an Acoustician who gave expert evidence in the **Webster** case. The Court found that her evidence carried considerable weight in that case. See paragraph 568 of the judgment of Egan J. (Tab 8). Her expert evidence was also considered and accepted in the **Byrne Moorhead** case.

Ms Large states in the Technical Note that Amplitude Modulation is a significant source of wind farm noise complaints.

Discussion of AM in the EIAR submitted with that application is, she finds, outdated and does not address more recent developments including recommendations for application of controls for AM at the planning stage using a penalty scheme.

Ms Large also states that predicted noise levels presented in the EIAR there say that the noise limits may be exceeded at a small number dwellings. Her review however shows that noise limits may be exceeded at up to a greater number of dwellings, taking cumulative impact into account and based on a lower fixed limit of 40dB(A). It is considered by her that a lower value in the range of 35-40dB(A) may be more appropriate, which would further increase the number of exceedances.

Application of a penalty for AM indicates that predicted noise levels will exceed suggested noise limits at numerous dwellings. Exceedances of the suggested noise limits are not minor, with breaches of up to 12 dB(A) calculated.

The implications of a potential penalty for AM should be considered, she advises, particularly as breaches of noise limits are identified. Where mitigation is required, she notes that this may impact the viability of the scheme particularly where significant reductions in noise levels are required to meet noise limits.

The impact of AM has not been properly considered in the application.

Ms Large also presents tables analysing the exceedances and the relevant wind speeds. The cumulative impact results, she reports, indicate that *following application of an AM penalty*, noise limits will not be met at several residences; in general, she finds that the noise limits cannot be met between the wind speeds of 3m/s and 4m/s during daytime and across a wider range of 6m/s and 10m/s during nighttime. Noise limits are exceeded by up to 12 dB(A).

While her comments about the prevalence of AM and the inability of WEDG06 limits to protect residential amenity are of general application, those tables are of course specific to dwellings described in that planning appeal only.

However Mr William McSweeney, BSc MSc MVB, an Electronic Engineer and qualified Veterinarian, with considerable experience of these issues and a high degree of relevant expertise, has considered the information and predictions in this EIAR. He has applied a similar analysis to the tables and predictions provided by the applicant with the present application.

We ask the Board to examine his submission carefully and its noise calculations which show starkly different conclusions to those presented by the applicant.

Noise – relevant decision to refuse

There is an important precedent at Bord Pleanála level for noise impact from turbines warranting a refusal.

The Board refused permission sought by Ardglass Windfarm Limited Ref. PL 04.243630 for five turbines in East Cork *inter alia* on noise grounds. The noise issue was considered in the Inspector's Report which included this passage:

"**11.4.1**

In terms of the potential for estimated noise levels associated with the proposed development having the potential to represent nuisance for residents in the area, I refer to the guidelines which suggest a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours. At an increase of 5dB(A), the increase in noise levels is perceptible. In terms of the information provided as part of the appeal documents, and just by way of example of my concerns, taking one house, H47, which lies in proximity to the measuring equipment used at location identified NSLA, and at a wind speed of 7m/s, the baseline noise in this area has been recorded at 28.8dB $L_{A90,\ 10min}$ during the day and 25.2dB $L_{A90,\ 10min}$ at night. The predicted noise associated with the development is indicated at 40.7dB $L_{A90,\ 10min}$ which represents a potential increase in noise at this location of between +11.9 – 15.5 dB $L_{A90,\ 10min.}$ To apply the higher noise levels in this environment, while ensuring that the wind farm might comply in the main with the requirements, would have a significant and negative impact on the existing residential amenities of the area."

Mr McSweeney provides fuller and we suggest more reliable predictions than those of the developer, taking wind turbine noise character into account. His analysis forms an excellent basis for reaching a similar conclusion as reached by the Inspector and the Board in the Ardglass case. We adopt his analysis and conclusions and we invite the Board to do so.

Carrigcannon - hard lessons

We are struck, among other points, by the similarity in turbine layout that Mr McSweeney identifies between this proposed development and the windfarm at Carrigcannon, near Lyre, Banteer, County Cork, whose operations led to litigation by several householders in the area alleging noise nuisance, culminating in an admission from the operator *accepting liability*, an admission that was formally recorded by Gilligan J. in the High Court in 2016.

That windfarm was permitted in reliance on assurances that there would be no significant noise impact on nearby homes. In that series of cases, homes affected were as far away as 1100m.

In the present case the turbines are much taller that those erected at Carrigcannon, the generators much more powerful, and with time everyone's understanding of the nature, extent and scale of adverse impacts from WTN has greatly advanced.

Ms Large in her Note also considers the judgment of the High Court in the **Webster** case to be directly relevant to this application and she sets out her reasons for this view, including the emphasis the Court places on the necessity to take account of the particular characteristics of wind turbine noise. It is not sufficient to limit consideration to absolute noise level alone. There is a need to consider the impacts of both absolute noise levels and noise character, AM, at the planning stage, but this has not been done in the assessment presented in Chapter 9 EIAR in that case, nor has it been done in this application.

Cherry picking

At 13.10 EIAR the developer puts up reasons for not fully following the more up to date guidance found in the 2019 draft revised Guidelines. It cites in support of its position a critical response to those draft revisions written by a number of authors. One of the experts involved in preparing that critique of the 2019 draft Guidelines upon which the developer relies is Mr Dick Bowdler, Consultant Acoustician.

Given the developer's reliance on Mr Bowdler, our clients wish the Board to be aware of what Mr Bowdler has to say about the prevalence of Amplitude Modulation. It contradicts the applicant's insistence that AM is rare.

Mr. Bowdler is a long-time member of Institute of Acoustics and recipient of the IOA Medal in recognition of outstanding contributions to research and developments in the field of engineering acoustics.

He is Co-convenor of the renowned International Conference of Noise Engineers, INCE. This three day event is held every two years and is a *'must attend'* event for every significant player in the wind industry.

The conference rotates each time from city to city and the 2023 conference took place in Dublin. See https://www.windturbinenoise.eu/content/conferences/ for links to those conference papers.

The latest conference took place earlier this month in Copenhagen.

From our own attendance at past conferences we respectfully suggest the Board may gain considerable insights from reviewing the papers.

Mr Bowdler is on record saying that Amplitude Modulation is *not* rare. He points out that the one academic study suggesting otherwise (which is the 2007 one from Salford, quoted by the developer here) is *'too old to be of any value.'*

In February 2021 in a submission to An Bord Pleanála planning application PL04.308885 where the old 2007 Salford report was also cited, Mr. Bowdler observes:

> *"...the Salford study referred to is, as the footnote states, dated 2007. The suggestion that 4 out of 133 windfarms might have AM is far too old to be of any value. The turbines surveyed, for example, had an average height to blade tip of about 70m. It is now recognised that the possibility of AM is significant in any modern windfarm."*

Mr Bowdler, who is also a Chartered Engineer and Chartered Physicist, was one of the first experts to highlight the deficiencies and limitations in the ETSU approach to wind turbine noise prediction many years ago. We enclose one of his early publications on the issue – ETSU-R-97: Why it is wrong. (*Tab 15*). The consensus view took some time to catch up on this, but it has caught up.

The global scientific knowledge base was enhanced by Sarah Large and Mike Stigwood of MAS Environmental Ltd., notably in a paper presented by Mr Stigwood in the Denver InterNoise Conference in 2013 (*Tab 16*). Their findings were supported by separate research conducted in Japan, published the same year by Professor Fukushima and his team. (*Tab 17*).

More recently a similar conclusion is reached by other acoustic experts commissioned by the relevant UK government department to review that jurisdiction's noise guidance for onshore wind turbines.

The Review of Noise Guidance for Onshore Wind Turbines by WSP UK Limited, commissioned by the Department for Business, Energy and Industrial Strategy was published in February 2023 and the latest version was issued in September 2023. A copy is enclosed for ease of reference *(Tab 17)*. In their Summary of Conclusions and Recommendations (p.16 of 382) they say the research indicates that the underlying basis for ETSU-R-97 limiting values is outdated. The assumptions about AM in ETSU do not adequately represent the nature of AM as experienced and measured. Their study has identified evidence that could be used to develop a suitable control for AM.

Webster judgment – relevant paragraphs on guidance and current state of knowledge

All of this was fully ventilated at length in the High Court in the **Webster** case, which is why the judgment is of central importance and assistance to the Board in considering this application. We have therefore supplied the full text of the judgment (*Tab 8*). There are some issues in the case that need not concern the Board but we would draw attention to the following paragraphs in particular:

Paragraphs 11, 12, 13, 14, 21, 22;

> *11. Two categories of wind turbine AM have been identified in the literature and guidelines: The first is AM in the mid and upper frequency[6] ranges. The sound which this produces, is that which we commonly associate with windfarms and is best described as a swishing sound. This blade swish, which I will refer to as ("swish AM") is commonly described as "normal AM". The second category of AM has a lower frequency sound character and is best described as a "whoomph" or thump sound ("thump AM"). Thump AM is commonly described as "abnormal AM", "adverse AM" or "excessive AM".*
>
> *12. In broad terms[7], the extent to which AM fluctuates as the rotors turn is measured by the differential between the peak and the trough of the sound levels – i.e., the peak to trough differential ("the AM value"). If the AM value is high, then the perception will be of a louder sound changing to a quieter sound, and vice versa. This will increase the intrusiveness of the WTN. Conversely, if the AM value is low, then the perception will be of a sound which is more steady and monotonous. Swish AM and thump AM can each display either high or low AM values.*
>
> *13. In addition to variations in its spectral content (swish AM/thump AM), and its AM value (high or low values), AM can also exhibit other distinct characteristics such as:*
>
> - *regular AM with little variation in rhythm.*
> - *erratic AM with no clear periodicity or rhythm which exhibits sudden bursts or isolated peaks of noise and is often accompanied by high AM values.*

- *Intermittent or variable AM which disappears and returns again, or which fades in and out.*

14. Although the plaintiffs complain that the WTN causes an unwelcome general increase in noise levels at their properties, the key feature of their case is that the AM associated with these turbines (but primarily the closest turbine, T2) renders it objectively unreasonable.

21. At the outset, I will summarise my findings on the issues to be tried in this case. After outlining the legal test for nuisance, I will set out the key factual evidence and then detail the court's site visit. Next, I will provide a brief overview of the expert evidence.

22. To place the arguments of the parties in context, it will then be necessary to review the regulatory framework under which planning authorities set noise conditions for wind farm developments.

Issue 4 on pages 9-10 *'What criteria ought the court consider in the assessment of nuisance?'*

Issue 6 on pp. 11-13 '*Does an analysis under the DEFRA criteria support the argument that the characteristics of the WTN [Wind turbine noise] amount to a substantial interference with the plaintiffs' use and enjoyment of their land?*'

This is of great importance as the court finds the answer to be Yes. Helpfully for the present purpose, it gives detailed reasons, taking into account the level of noise, the type of noise, the spectral content of the noise as an aggravating feature, the character of the quiet rural locality, the exceedance of WTM over background noise, the impact of the noise on basic needs such as sleep, inability to avoid the noise, frequency of occurrence of noise and time of day or night.

We submit that the Board will have to take account of every one of these factors in assessing the suitability of the proposed development, and publish its reasoned conclusions on each of them.

Issue 10 on pp. 13-14 *Does the Court find that the WTN is a substantial interference with the plaintiffs' use and enjoyment of their land? Is liability in nuisance established?*

Paragraphs 34-37, 174-218, 361-373.

We will reproduce a small selection of those paragraphs here.

For example, in paragraph 369 you will find an echo of a key claim made in this application by the developer, a claim rejected by the Court in **Webster**. The Court finds that 'Neither WEDG nor present planning practice can determine the matter at hand **because they do not reflect current expert scientific knowledge on WTN.**' (Emphasis added). We say that finding must be respected by the Board in this case. If the Board disagrees, it will need to say so and give reasons.

368. Yet the defendant and its experts do not see this logic through. Although it maintains that it complies with draft WEDG 2019, the defendant also distances itself from that guidance.

The defendant emphasises that although consideration was being given in draft WEDG 2019 to changing the basis of regulation from that set out in WEDG 2006 – principally to bring down maximum noise limits from 45 dBA L90 to the 43 dBA L90 or 5 dBA over background and to reflect a penalty for AM - this draft guidance has not been brought forward. The defendant's uncontradicted evidence is that the present practice of planning authorities is to fix permission noise limits for wind farms in accordance with WEDG 2006 - i.e., by reference to fixed decibel limits only with no penalty for AM.

369. The defendant therefore argues that because this is the present practice of local authorities, the court ought to adopt a similar approach in its assessment of nuisance in this case. I do not agree. The issue is not whether or not WEDG 2006 remains the current regulatory framework for windfarms in this country or indeed whether the Ballyduff WTN complies therewith. ***Neither WEDG nor present planning practice can determine the matter at hand because they do not reflect current expert scientific knowledge on WTN.*** *Current expert scientific knowledge at least informs more recent publications such as draft WEDG 2019 and the ETSU Review (although of course the first of these has been withdrawn and the second has yet to be formally adopted). Unlike these more recent publications, WEDG 2006 does not even consider the extent to which those aspects of the WTN which are the source of complaint in this case may be said to be objectively reasonable.*

370. The fact that AM and thump AM remain to be regulated does not mean that the court should ignore these characteristics. I fail to see how it can credibly be said that merely because an

acknowledged problem has not been regulated in the planning sphere the court should now ignore the problem in the context of a nuisance action.

371. This review of WEDG 2006 is clearly a difficult and long-drawn-out process and the same is evidently the position in the UK. In and of itself this demonstrates just how complex and multifactorial the impact of WTN can be.

At paragraph 373: *I think it is fair to conclude that the current direction of travel in wind energy planning guidance is towards setting decibel limits combined with a penalty for character such as AM together with limits on low frequency noise.* [...]

381. I accept that the Defra Guidance is of considerable assistance Although the Defra Guidance relates to complaints of (United Kingdom) statutory noise nuisance and not to private nuisance, it is a recognised 'standard or guidance' on the assessment of WTN nuisance. The Defra Guidance provides a helpful framework under which to analyse the various elements of a WTN nuisance complaint.

We submit that in examining claims made by the developer that their operational noise nuisance will not be significant, the Board (which is of course exercising a planning function and not adjudicating on a noise complaint at this point) should pay close attention to the Court's finding in paragraph 381.

Defra criteria are listed at paragraph 385. We enclose the Defra guidance document for ease of reference (*Tab 19*).

385. The criteria identified by the Defra Guidance as relevant to the "bespoke investigation" - together with certain other pertinent considerations identified by the plaintiffs' experts – which purely for the sake of brevity I will refer to collectively as "the Defra criteria"- are as follows:

- *sensitivity of the complainant.*
- *the level of WTN;*
- *the type of noise – e.g., the prevailing AM value and the variability, regularity and predictability of the noise;*
- *whether any aggravating characteristics are present in the WTN - the spectral content of the WTN and whether thump AM is present;*
- *the characteristics of the neighbourhood where the WTN occurs;*
- *the exceedance of WTN over background noise;*

- *the impact of the WTN on basic needs such as sleep;*
- *how easily the WTN can be avoided and what measures could reduce or modify the WTN*
- *the time of day or night when the WTN occurs;*
- *the duration and how often the WTN occurs.*

The next paragraph is crucial:

386. *The above factors reflect the fact that human hearing is obligatory in the sense that our brains are constantly analysing and interpreting sound. Human responses to sound therefore combine both physiological and psychological responses. Noise is related to human response and is routinely described as unwanted sound or sound that is considered undesirable or disruptive. The difference between a sound and a noise is dependent on a number of objective and subjective variables. This all means that the characteristics of a given sound can have a considerable influence on our reactions. I accept Ms. Large's evidence that constant sound with minor change to volume, frequency or character can be easily accustomed to. By contrast, sound characteristics that attract attention and render the sound more discernible are generally considered to increase annoyance. Negative responses are therefore associated with variable, unpredictable sounds and with unexpected changes in loudness such as impulsivity, erraticism and intermittency. Assessment of noise nuisance must consider all of these variables.*

The Court makes mention of the EPA publication NG4:

387. *I also note that the Defra criteria are quite similar to those listed by the EPA in EPA NG4: Environmental Protection Agency Office of Environmental Enforcement (OEE) Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities ("EPA NG4") 48. Although this guidance, unlike the Defra Guidance, is not windfarm specific, it can only be seen as an endorsement of the view that both quantitative and qualitative factors must be weighed and assessed with care and professionalism in each case.*

We note that the EIAR contains some figures showing calculated noise contours under wind speeds that only go up to 7m/s, and using dB(A) Lday. We have not previously seen Lday used in this way. Lday does not adequately capture evening and night impacts. It is mentioned in glossary at the start of the Webster judgment in the Court's definition of Lden –

Lden This is a composite of long term leq valued for day, evening and night. It is determined by averaging the L day with the L evening plus a 5 dB penalty and the L night plus a 10 dB penalty.

That noted, we ask you to turn to paragraph 533:

533. However, Lden is an entirely different measurement metric to either L90 or leq. The Lden (also referred to as "DENL") indicator is calculated as the A-weighted average sound pressure level, measured over a 24-hour period, with a 10 dB penalty added to the average level at night, a 5 dB penalty added to the average level during the evening and no penalty during the daytime. The penalties are introduced to indicate people's extra sensitivity to noise during the evening and night.

Selecting Lday only for those noise contour maps is perplexing in this context. Lden is the choice of the WHO in its publication Environmental Noise Guidelines for the European Region 2018 wind turbine noise recommendation, for reasons that are easy to discern. We enclose that document. (*Tab 20*)

Finally please see paragraph 582:

582. I find that there are frequent and sustained periods during which AM values are conservatively in excess of 5 or 6 dBA. I also find that there are regular periods during which the AM values are considerably in excess of 6 dBA, in the order of 10 dBA or more. I find that such high AM values exacerbate the other intrusive features of the AM such as its erraticism, impulsivity and intermittency. I find that although noise levels will be lower when the windows are fully closed, high AM values remain. I find that there is a significant audible lower frequency component to the WTN. This produces clear whomping, thumping and whacking sounds. These whoomphing and thumping sounds are themselves highly variable and unpredictable. In addition to being heard, this lower frequency WTN is felt as a vibration or a sense of pressure. The WTN is audible and "felt" both outside and inside NF and HH, including in the master bedrooms at both properties. I find that, when even with the windows are entirely shut this lower frequency noise is clearly audible throughout both houses and that thump AM can be felt as a vibration in the structure of NF and in particular HH. I am satisfied that this thump AM is commonly present over sustained periods.

A High Court nuisance action is a last resort, and is probably beyond the means of most people. The purpose of the planning code, with its integrated EIA function, is to avoid the necessity for such actions ever arising. The planning authorities have fallen short for too long and the consequences have been severe on many people.

An Bord Pleanála has an opportunity with this application to achieve a correct balance, in line with current science and with the guidance given by the High Court.

County Council noise conditions make no sense and are unenforceable.

The Council applied noise conditions to the permission, in line with advice it was given by its noise consultants.

The relevant conditions include nos. 23, 24, 27 and 65. They provide *inter alia* that - "*The rating level of noise emissions from the combined effects of the wind turbines (including the application of any tonal penalty and amplitude modulation (AM) penalty), when determined in accordance with the Institute of Acoustics Wind Turbine Guidance Notes, shall not exceed the daytime and night-time criterion values....*"

However the IOA Good Practice Guide published in 2013 (with a supplementary guidance notes published in 2014) do not work for this purpose. A note on their website states that "AM was not considered in the GPG as at the time of its production no 'good practice' could be found on how to deal with it." That note is dated December 2014.

The statement by the noise consultants engaged by the Council, which we believe informs the planning permission, to the effect that *"control of tonal/impulsivity characteristics potentially associated with the as built turbines, at sensitive receptors, can be controlled by a suitably worded condition"* may have some theoretical validity. However as the Good Practice Guide referenced in the conditions does not deal with Amplitude Modulation.

In sum, the conditions are decibel based, without paying any adequate attention to WTN noise character. That is a fatal limitation as the litigation illustrates. They are in any event impossible to interpret and so will be unenforceable.

Noise – implications for human health

There is extensive authoritative material on this issue. We enclose a selection for your consideration please.

Noise is defined by the WHO as unwanted sound. The World Health Organisation ranks noise pollution as second only to air pollution in its scale of harm to human health. The wind industry, and this applicant assures the Board it will not have any significant adverse noise impact on people in the area.

The Board must decide whether that is a credible claim. It will have to give reasons for its decision on this, as it is a central topic of paramount importance to our client and to the public. Given its character, unpredictability, variability and volume, wind turbine noise is liable to cause intolerable interference to nearby residents and land users such as farmers or those in the equine industry. Our clients do not want the noise of wind turbines within their properties and especially not within their homes.

We say that it is not credible to deny significant adverse noise impacts. We base this assertion on the established science, relevant Guidance documents internationally and on High Court findings bearing directly on the issue.

Wind turbines have specifically been recognised by the WHO as being a potential source of harm to health due to noise. Please see their 2018 Report herewith. (*Tab 20*)

Exposure to noise can be harmful to health. Wind turbine noise has particular characteristics which have now been proven in Court as liable to cause nuisance. We draw the attention of the Board to the relevant Irish High Court judgments and to the selection of scientific, academic and medical studies on the topic, which we enclose. (*Tab 21*)

There is a growing awareness of the fact that exposure to wind turbine noise can cause health harm and annoyance beyond any tolerance. The recent Court decisions find that to be proven in those cases. It can and does disrupt sleep. Sleep disturbance can lead to adverse health effects. As the size of turbines has increased in recent years, the zone of noise impact spreads.

Regulations intended to protect the public frequently lag behind the science and that is what has happened in Ireland, as many families have discovered to their cost and their great distress.

The Board may not simply rely on a strained interpretation of the outdated 2006 Wind Energy Development Guidelines when coming to a conclusion on noise impact and appropriate conditions. If it does, it will face review.

We rely on the Board to examine the enclosed materials in full and to consider them in their entirely as they form an essential empirical evidence base for any determination the Board makes on the impact of turbine noise on our clients' home and the homes of other neighbours in the area.

Having reviewed the enclosed literature we request the Board to address in clear and specific terms how it evaluates the evidence presented and how that evaluation bears on its conclusions on the noise issue.

To be clear and at the risk of repetition, this is a critical element of the overall assessment the Board must make under the EIA Directive as implemented into domestic law through the Planning and Development Act 2000 as amended. It is also a critical element in the balancing of competing rights which the Board must undertake in its capacity of Planning Authority.

It must be possible for our clients to see from the Board records at the end of this process how it has weighted the evidence, and how it reaches a conclusion that is consistent with that evidence.

The material submitted by the applicant is wholly inadequate to enable the Board to complete an assessment of operational noise impacts. The developer's assertion of no significant noise impact is unfounded, unscientific and unsustainable.

The application should be refused on that basis.

Property Values

Many of the submissions on your file address this issue, and some refer to a recent academic paper on the topic. We wish to refer the Board to the enclosed study FCN Working Paper No 3/2012 (*Tab 22*) confirming negative impact on properties within 1.5km of large industrial type wind turbines. This study accords with common sense and with the experience of several Irish homeowners, some of whom we are personally aware of, seeking to sell after turbines have been constructed close to their property. The Board has valuation expertise available to it to help it assess this issue and it is a very important issue in this case.

This direct predictable and substantial harm to nearby owners would be a clear example of damage done were this application to be permitted. We submit that there is nothing to justify radical departure by the Council from the normal principles of good planning including respect for the County Development Plan zoning, ensuring incompatible uses are kept apart, and the relevant objectives in the Plan.

This negative impact on the value of multiple properties at this location is clearly a significant planning matter and it warrants refusal of the application.

Public Health and Safety

Protecting Public Health and Safety is a planning issue.

Sanitation, clean water and fire safety were all objectives which early town planning codes sought to achieve. While the planning system has become much more sophisticated over time, we submit it is important to remember its essential purpose namely protection of the public from avoidable danger.

Identifying, analysing and assessing potentially significant impacts on Public Health and Safety is an EIA issue. Yet it has not been addressed in the EIAR or accompanying planning application documents in any meaningful way. We say that for the following reasons.

Among the known serious events at wind turbine installations in Ireland in recent years are:

- The unexplained turbine fire, blade throw, and vegetation fire at Cappaboy Beg outside Kealkil, County Cork.
- The unexplained blade throw at Corkermore, County Donegal.
- The unexplained turbine collapse at Loughderryduff, County Donegal.
- The unexplained turbine collapse at Screggagh, County Tyrone.

The developer indicates that they may install Vestas turbines. Vestas has published some of its operational and maintenance materials. These contained a clear acknowledgement of the nature of the hazards posed by wind turbines.

We enclose (*Tab 23*) a copy of the *"Operation and Maintenance Manual for Vestas models NM52-900 reference number OUM100000092-03EN"*. We would ask you to read this in its entirety if you are in any doubt as to the hazard level posed by these machines. We would also then refer the Board specifically to Section 2.3 headed *"Safety Instructions"*.

We have added some emphasis. This section has a number of subheadings, including:

- **2.3.1 In case of fire**
  The manual states that in the case of fire the plant must be evacuated immediately and the power supply from the grid cut off as soon as possible. If the fire is out of control, the area around the wind turbine must be cordoned off and the police/fire department informed.

This is a real risk. Cork County has had an example of this already. Bantry Fire Service has spoken openly about problems confronting them when they were called out to an uncontrolled wind turbine fire in Summer 2014 at Cappaboy Beg. They could do nothing but let the fire burn out as it was too high to reach. They could only hope that nearby forestry would not catch fire from falling fiery debris.

The turbines proposed now are significantly taller than those in Cappaboy Beg. Also, unlike Cappaboy Beg, the proposed Tullacondra turbines are surrounded by homes, farms and equine enterprises, which would be highly vulnerable to smoke emissions in the event of fire next to them.

- **2.3.2 In case of runaway [operations]**
  The manual says that should this take place the area around the wind turbine must be evacuated immediately and the area cordoned off. It goes on *"Do not try to stop or save the wind turbine. The plant can be replaced – human lives cannot be!* ***No person must venture closer than 500m to a runaway rotor".***

- **2.3.3 Lightning and thunderstorms**
  The manual states *"Do not remain inside or near the turbine and so be exposed to a possible fatal injury caused by lightning. When the thunderstorm has passed over, personnel must wait at least 1 hour before approaching the wind turbine. Continuing rustling or hissing*

sounds from wet rotor blades show that they carry an electrical charge so do not go near or touch the plant."

• 2.3.4 In case of unusual sound patterns

The manual states that *"An unusual sound or noise often reveals that an abnormal or dangerous situation has occurred or is under development."*

We submit that the Board should abide by normal planning principles and ensure that such dangerous equipment is kept in an appropriately zoned area close to the necessary emergency services and sufficiently removed from residential properties and amenity users. If it is contemplating departure from that normal balanced and prudent planning approach, it needs first to have much more information on these risks than what it now before it.

A further risk that arises with the operation of the technology is also apparent from the Vestas documentation.

At Section 2.1.1 of the Vestas document cited above headed *"Approach to the Wind Turbine"* it states:

"Adults must keep children under close surveillance. Do not stand beneath the rotor or near the wind turbine when rotor blades are covered with ice."

That document was issued in 2005. It remains relevant.

Two years later in 2007 Vestas issued a *"Mechanical Operating and Maintenance Manual"* relating to their model V90. We enclose a copy of this Manual (*Tab 24*)

Section 2 says:

"Do not stay within a radius of 400m (1300ft) from the turbine unless it is necessary. If you have to inspect an operating turbine from the ground do not stay under the rotor plane but observe the rotor from the front.

Make sure that children do not stay by or play near the turbine. If necessary fence the foundation."

These documents reflect the fact that these large moving industrial machines are potentially highly dangerous. They ought not be permitted on the basis of inadequate information, in this open rural location surrounded by homes and farms.

Policy and balancing interests

The developer understandably has placed great stress on national and European policies relating to renewable energy. Energy is a necessity for life. (Mr Justice Humphreys has recently referred to this in his judgment in the **Coolglass** case, a judgment which is now accepted for consideration by way of appeal to the Supreme Court).

However that fact alone does not negate the essential planning principles described above. There is no national or European policy to say that it necessary to privilege commercial interests involved in power generation to an extent that they may expropriate others or devalue the homes of others or unduly diminish their established way of life. To do so would be to infringe Constitutional and common law rights, as Mr Justice Quinn describes in **Byrne Moorhead**.

In the very narrowly prescribed circumstances in which the State or other public bodies have been given power to take away a person's property, a legal balance is struck between the authority concerned and the rights of the affected landowners through the compulsory purchase compensation system.

Even the compulsory purchase system is limited to situations which advance the common good. None of that applies here. There is no system of compensation in operation. There is no overriding public good that requires use of *this particular site*.

Related factors were considered in the High Court by Judge Haughton in **People over Wind v An Bord Pleanála** [2015] IEHC 393 when he said (emphasis added):

> *"The force of Coillte's argument is somewhat undermined by the fact that* ***the proposed windfarm development is a commercial development.*** *Ultimately* ***it is primarily intended to produce profit for Coillte****. The fact that it may contribute to Ireland meeting its renewable energy targets is not necessarily proven, but even if that is assumed, the primary objective is that of a successful commercial enterprise and the public benefit to the State would seem to be secondary."*

In the planning process, no special favourable status is conferred on wind turbine developers. They must be dealt with by the planning authorities objectively and by reference to the normal principles underpinning proper planning and sustainable development of the area. They are subject to the same standards of assessment as any other type of commercial development.

Visual impact, landscape character

The visual impact of the proposed development would be profound and long term in this high value landscape. These turbines would be 175m high and alien in the landscape. The Council has previously refused permission for much more modest developments (including a two-storey dwelling) in the area by reason of adverse impact on this landscape. The application should be refused on this basis. This is addressed in more detail by several of the submissions on file to date which our clients endorse and adopt. We submit that the application conflicts with the Landscape Policy Statement at 1.2 of the National Landscape Strategy for Ireland 2015-2025.

The proposed development is also in material breach of the County Development Plan as expressed through Objective GI 14-9 and 14-13.

Archaeology

The fundamental uncertainty surrounding the extent and nature of impacts on archaeological heritage is seen from this passage on p.15-16 of the EIAR, for example.

> *"Any off-road accommodating works required on the section of the TDR Option 2 between the junction of the N20 and L1200 and the wind farm site have the potential to directly affect the ringfort (173) and souterrain (174), the ringfort (174), the bridge (166) and the house (170) and farmyard complex (171). Without mitigation, the magnitude of this effect could range from no change to high and the significance of this effect on these heritage assets could range from neutral to profound adverse (No Significant Effects to Significant Effects).*
>
> *Direct effects on sub-surface archaeological remains and above ground unregistered historic structures and field boundaries of architectural and historic interest - Wind farm site and access tracks.*

The potential exists for the proposed development area within the wind farm site to contain yet unrecorded sub-surface archaeological sites and artefacts. It is possible that such sites may be uncovered either within the topsoil and/or at the level of the underlying natural substrate.

Groundworks for the construction of the turbine bases, hardstanding, compounds, access tracks, and substation may truncate or remove any currently unknown sub-surface archaeological features and artefacts on the wind farm site and along the site access tracks.

Depending on the type of archaeological features or deposits and the extent to which they are affected, the potential direct effect of the proposed works within the wind farm site on currently unknown buried archaeology without mitigation is assessed as Negligible to Very High."

Admissions of adverse impact (though downplayed) on archaeological heritage can be found, for instance, at 15.11.3.1, 15.11.3.3 and 15.12.3.3.

The area, both on its own and especially taken together with the potential Turbine Delivery Routes and Grid Connection Route, is rich in archaeological heritage. The proposed development will seriously interfere with the integrity of that heritage, with mitigation measures that are wholly inadequate.

The application should be refused on this basis.

Conclusion

The policy in favour of promotion of renewable energy development is well known and understood. That policy however is couched in general terms so far as planning authorities are concerned: it is not directive as to the fate of any specific planning application. That is where the Board comes in.

The public including our clients are entitled to freedom from unlawful interference with their personal, family and property rights.

The Board must have due respect for those rights. It may not privilege the ambitions of a commercial operator over them.

For that reason and for the reasons and on the grounds set out in this letter and in the referenced materials and other appeals against the Council decision, our clients ask the Board to refuse the application.

Yours faithfully,

Joe Noonan
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