College road,
Carrignavar,
Co. Cork.

Date: 14 November 2025

An Coimisiún Pleanála,

64 Marlborough St, Rotunda, Dublin 1

Re: ABP case reference : PAX07.323699

Applicant : RWE Renewables Ireland Ltd

Located within the townlands of Beagh, Beagh More, Cloonbar, Cloonweelaun, Cloonnaglasha, Cloonteen, Corillaun, Derrymore, Ironpool, Shancloon, Toberroe and Tonacooleen, Co. Galway

Dear Inspector,

I highly recommend this application be looked at in detail with respect to the turbine to turbine separation distances within this application site boundary. On inspection it shows that the turbine positions are located relative to their minimum distance from households, erring then on the minimum distances suggested in the WEDG 2006 guidelines for turbine to turbine spacing. This insufficient spacing has a lot of un-intended consequences.

I am a Chartered Land Surveyor, in private practice since 1994, becoming a Fellow member of the Society of Chartered Surveyors of Ireland & the RICS in 2006.

Since 2017 I have being working in a professional capacity mapping distances and dimensions of various Windfarms in Cork, Kerry, Waterford, Limerick and Wexford counties on behalf of certain residents who have complaints of noise nuisance created by the operation of wind turbines. I was the surveyor involved in mapping the dimensions of the Ballyduff wind farm on behalf of the Plaintiffs who were impacted by amplitude modulation and turbine noise to such an extent that one of the Plaintiffs had to abandon his home and was found to have suffered psychological injury. The findings in this case were made by the High Court in a Judgment of Ms. Justice Egan delivered on the 8th March 2024 (Webster &Anor -v- Meenacloughspar (Wind) Limited and Shorten & Anor-v- Meenacloughspar (Wind) Limited. In that Judgment regard is had to the proximity of the turbines to the homes of the Plaintiffs and to the many factors which may be contributing to turbine noise, <u>including possible wake effects of one turbine on the other turbine</u> (the particular windfarm in that case has just two turbines).

I was also the surveyor involved in mapping the dimensions of the Gibbett wind farm on behalf of the Plaintiffs who were impacted by wind turbine noise and where the developers admitted liability after many years of noise nuisance. Liability was only admitted after the plaintiff's acoustician's evidence to the court, that being after 11 days of High court sitting.

I have recently carried out a study of all of the Windfarms I have worked on (10 no. on behalf of injured parties) and one factor that I happened upon is present in all. This is the spacing of certain turbines relative to each other. It is a factor in wake turbulence at particular turbines, creating noise nuisance for nearby residents.

On reading the WEDG 2006 guidelines, referring to "wind take" on page 34, the recommended siting of turbines relative to each other are given. (different to siting relative to dwellings and adjacent windfarms / properties outside of the windfarm control).

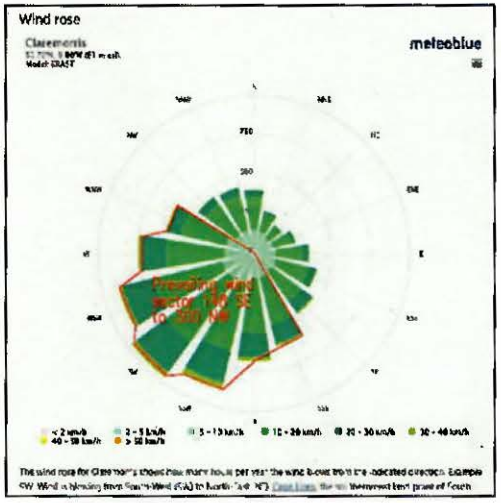
It reads "**In general, to ensure optimal performance and to account for turbulence and wake effects, the minimum distances between wind turbines will generally be three times the rotor diameter (=3d) in the crosswind direction and seven times the rotor diameter (=7d) in the prevailing downwind direction.**"

In ABP case reference **323699** to which this observation refers, the applicant has, as one can see in Map 1, next page, ignored the turbine separation distances from adjacent turbines, that are recommended in the WEDG2006 guidelines.

It should be noted that the prevailing winds, those requiring 7 rotor diameter separation distance between turbines, are not only from the southwest direction. Map 1 shows that in reality there are strong and frequent winds from 140 deg. Southeast to 300 deg. Northwest in a clockwise direction.

The following turbine spacing arrangements fail the required WEDG 2006 guidelines.

Prevailing wind Direction_T6 to T7, T6 to T8, T7 to T11, T5 to T6, T4 to T1, T2 to T1 and T3 to T1.
Cross wind directions_T10 to T9.



Failed sets of turbine pairings per WEDG 2006

Prevailing wind direction:
T6 to T7, T6 to T8, T7 to T11, T5 to T6,
T4 to T1, T2 to T1, T3 to T1.

Other wind directions: T10 to T9.

X.XX RD denotes number of rotor diameters between turbines

0m 100m 500m

Shancloon Windfarm layout
Horizontal separation distances between turbines

Map 1

WEDG 2006 guidelines

3 x rotor dia = 3x155=465m
4 x rotor dia = 4x155=620m
5 x rotor dia = 5x155=775m
6 x rotor dia = 6x155=930m
7 x rotor dia = 7x155=1085m

WEDG 2006 says 7 rotor dia (RD) in prevailing wind and 3 rotor dia. in crosswind between turbines.

Therefore at least some turbines must be 952m (7.00 RD) apart at a minimum in the prevailing wind direction.

No turbine shall be within 465m (3.00 RD) of another turbine..

SEAI have published in 2024 a series of documents on how to design and plan a windfarm layout, see the following link: https://www.seai.ie/sites/default/files/publications/Community-Toolkit-Planning-

Noise Levels

Noise generation is perceived to be an adverse impact of wind turbine operations, although noise levels of modern wind energy are generally very low. Improvements in technologies have reduced mechanical noise impacts significantly. However, it is important that turbines are located an appropriate distance from noise sensitive developments to minimise any adverse impacts upon local amenity.

Wind turbines also create noise, which can impact on the amenity of the occupants of any nearby dwellings. As such, it is recommended that a separation distance of at least 500 metres or four times tip height is incorporated between the turbine and any other dwelling.

Appropriate Distance

You will need to consider appropriate distance between all wind turbines and power lines when planning for grid connections. The minimum clearance for all turbines and overhead transmission lines must be falling distance (measured from the edge of the foundation) plus an additional flashover distance for the relevant voltage. EirGrid advises that the distance between an overhead transmission line (110kV, 22kV or 400kV) and a commercial wind turbine should not be less than three and a half rotor diameters unless EirGrid has agreed a reduction based on a risk assessment. ESB Networks should be consulted on applications, and evidence of any pre application discussions should be submitted as part of the planning application.

It is advisable to achieve a safety setback from national and regional roads and railways of a distance equal to the height of the turbine to the tip of the blade plus 10%.

In general, to ensure optimal performance and to account for turbulence and wake effects, the minimum distances between wind turbines will generally be three times the rotor diameter in the crosswind direction and seven times the rotor diameter in the prevailing downwind direction. Bearing in mind the requirements for optimal performance, a distance of not less than two rotor blades from adjoining property boundaries will generally be acceptable, unless by written agreement of adjoining landowners to a lesser distance.

→ Decommissioning and Site Restoration

Solar farms and wind turbines have a finite life and, should planning permission be granted, it is likely to be subject to a condition requiring the turbine to be decommissioned and removed when no longer in use. A condition may also be added requiring certain colours and finishes of the mast, blades and hub, but this will be specific to the turbine's location.

3.2 Identify Site Constraints

→ Refer to the Wind Energy Maps or Renewable Energy Strategy in the County Development Plan to check wind energy designations. Refer to the Council's Landscape Assessment (if any) to see where the site lies in relation to landscape sensitivity.

The above SEAI recommendation is in line with the WEDG guidelines

This windfarm designer must be referring to the 2012 Irish Wind Energy Association "Best practice guidelines for the Irish Wind Energy Industry" (link below) instead of the WEDG2006 guidelines when preparing their applications. These IWEA 2012 guidelines are in conflict with the WEDG 2006 and SEAI guidelines in many areas and should not be used in Windfarm design.

https://windenergyireland.com/images/files/9660bdfb5a4f1d276f41ae9ab54e991bb600b7.pdf

Recommendation

On the basis of what I have outlined and experienced, I highly recommend the aforementioned issues be carefully considered, and the design be altered significantly.

I have noted from another windfarm application (different design team) that they put a lot of trust in their windfarm design programs. I would not, as there are now more recently constructed windfarms having "unknown" noise issues, designed by this or similar software.

Regarding the Gibbett Hill windfarm, the turbines were all over 1049 m from the dwelling where the nuisance is confirmed and mitigation was not possible to halt this nuisance.

The 3 turbines that were ordered to be taken down, were, as in this application, less than the recommended WEDG 2006 guidelines apart.

While there are noise modes placed on some turbines, this will not suffice.

I am available for consultation or other forum if needed.

I am making an online payment of 50 Euro to An Coimisiún Pleanála.

Yours sincerely,

Con Sheehan,
Land surveyor /Fellow, "Society of Chartered Surveyors Ireland"

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