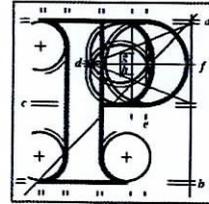


**Our Case Number:** ABP-316051-23

**Planning Authority Reference Number:**



**An  
Bord  
Pleanála**

Dr. Helen O'Donnell  
Lissanode  
Moate  
Co. Westmeath

**Date:** 09 May 2023

**Re:** Renewable energy development comprising 9 no. wind turbines and associated infrastructure.  
Umma More and adjacent townlands, County Westmeath.

Dear Sir / Madam,

An Bord Pleanála has received your observation or submission in relation to the case mentioned above and will take it into consideration in its determination of the matter. Please accept this letter as a receipt for the fee of €50 that you have paid.

Please be advised that copies of all submissions / observations received in relation to the application will be made available for public inspection at the offices of the Local Authority and at the offices of An Bord Pleanála when they have been processed by the Board.

For further information on this case please access our website at [www.pleanala.ie](http://www.pleanala.ie) and input the 6-digit case number into the search box. This number is shown on the top of this letter (for example: 303000).

Yours faithfully,

Niamh Thornton  
Executive Officer  
Direct Line: 01-8737247

BL50A

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Dr Helen O'Donnell,  
Lissanode,  
Moate,  
Co. Westmeath.

Dear Sir/Madam,

I have a number of concerns with the proposed development of a windfarm at Umma more (Application 316051) that I wish to highlight to the applicant and An Bord Pleanála (hereafter referred to as "the Board").

By way of background, I am the joint beneficial owner of my family home and ~60 acres of land at Lissanode, Moate, Co. Westmeath house (Folio WH1679F) which is less than 2km from the proposed wind farm. My family home is deemed "#92" in the report. I am an expert in health technology assessment (HTA), evidence synthesis and health economic modelling (BSc Pharm, MPharm, MSc, PhD). Given my expertise, my observations primarily relate to chapter five of the EIAR – Population and Human Health.

**1. Absence of evidence is not evidence of absence – Irish public health experts advocate a conservative approach.**

- Appendix 5-2 Windfarms & Health Literature Review

The literature review submitted by the applicant does not meet any reasonable quality standard and its conclusions cannot be relied upon.

- The aim and methods of the review are not reported.
- A declaration of conflicts of interests of the review authors or an assessment of potential conflicts of the authors of the included studies are not reported.
- No attempt is made to synthesise the evidence in a coherent fashion.
- No appraisal of the strength of evidence underlying the study conclusions is conducted.
- The review was last updated 8 years ago and is out of date.

Further, best practices such as reporting the search strategy or list of excluded studies are not followed. Given the deficiencies identified above, the review may be significantly biased. Based on the information in the application, it is impossible for local residents or the Board to make an informed decision on the impact of the development on resident's health.

A robust review of the health effects of wind turbines is required before a decision can be made on the proposed development. In Chapter 5 of the EIAR,

- The applicant stated that: "There is currently no published credible scientific evidence to positively link wind turbines with adverse health effects."

In the absence of an up-to-date high quality systematic review of the literature examining this issue, I believe the applicant has not provided sufficient evidence in the report to justify this statement.

- HSE Position Paper

Citing the HSE in their "Position Paper on Wind Turbines and Public Health: HSE Public Health Medicine Environment and Health Group, February 2017", the Applicant states that the HSE "advise developers on making use of the draft Guidelines, as a means of setting noise limits and set back distances from the nearest dwelling" (On p525 Environmental Impact Assessment Report).

The Applicants reporting of the HSE position paper is incomplete. It is prudent to note other aspects considered by the position paper:

- "While a range of effects have been reported anecdotally, there is no published scientific evidence to support adverse effects of wind turbines on health. However, there is a lack of high-quality evidence investigating possible relationships between wind farms and health outcomes, and further research is required."
- "However, many studies of wind turbines and health have limitations and it may well be that our understanding of types of noise and types of sleep disturbance is not comprehensive"
- "International experience with uncertainty in environment and health issues such as this advocates a precautionary approach. We therefore welcome efforts to address concerns of local communities through revised national planning guidelines. In light of the uncertainties involved, evidence on what makes risks more acceptable to those most likely to be affected should be considered."

It is premature to conclude there are no adverse health outcomes. Absence of evidence in the flawed submission is not evidence of no effect. The HSE noted that the revised guidelines recommend the complete elimination of shadow flicker between wind turbines and neighbouring dwellings and welcome the proposed guidelines. However, the Applicant does not intend to follow the draft guidelines or the HSE advice with regards to the elimination of shadow flicker. If approved, the applicant should be mandated by the board apply the technology to remove all shadow flicker.

**2. The applicant's modelling assumptions are not conservative and grossly underestimate the extent of shadow flicker that each house will be subject to if the development is approved.**

Accurate modelling is critical so that:

- The Board can make an informed decision with regards to planning.
- Households affected by the development can make an informed decision about how the prospective development impacts their interests, and accordingly decide on whether to submit an observation to the Board.
- If the development is approved, that the applicant, the Board and the affected parties are aware of the extent and type of mitigation measures are required.

The following assumptions grossly underestimate the extent of shadow flicker on the affected houses.

- "At each property, shadow flicker calculations were carried out based on 4 no. notional windows facing north, east, south and west, labelled Windows 1, 2, 3 and 4 respectively".
- "Each window measures one-metre-high by one-metre-wide."

The Irish bungalow is a common house type in the development area and are often built aligned to the road with at least four windows on their longest side. Based on visual inspection of the relationship between the road network, the affected houses, and the turbines, most of the affected

houses will have at least four windows facing the turbines rather than one window in the applicants estimates.

The Applicant's assumptions also grossly underestimate the average window size in Ireland. Reasonable modelling with regards to the number of windows, their spacing across the length of the house, and average window size of the window would substantially increase the expected duration of shadow flicker that Drumraney and Moyvoughly residents would have to endure compared to the submitted estimates. In the absence of the measurement of all window sizes, the modelling should be repeated with justifiable and conservative estimates of window number, sizing and spacing.

- "tilt angle is assumed to be zero"

I am unsure what the tilt angle is in reference to. Windows are generally at a 90 degree angle to the ground. It would be prudent if the applicant could confirm that this is what they have modelled and amend as appropriate.

- Assuming 30.7% sunshine throughout the year.

The average duration of sunshine differs across each month of the year. Given shadow flicker is defined to occur at set times throughout the year, the assumption applied may underestimate the extent of annual shadow flicker a house is subjected to. To gain more accurate estimates, the applicant should apply month specific percentage sunshine estimates based on the average number of sunshine hours and the average number of daylight hours each month. These calculations would place little additional workload on the applicant but substantially increase the accuracy of the estimates.

- "The sun is assumed to be shining during all daylight hours such that a noticeable shadow is cast. This will not occur in reality."

The statement above is incorrect: The applicants daily shadow flicker estimates include this assumption, but their annual estimates do not. This qualification is not clearly set out in the report when the above statement and similar statements are made. They cite an assumption of 100% sunshine as justification for not modelling shadow flicker estimates accurately and for their claim that their estimates are conservative. Therefore, their application is factually inaccurate and should be amended.

- Verification and quality assurance

Modelling like any mathematical exercise is prone to human error. It is best practice to describe the verification and quality assurance tests applied to the final estimates. Given the critical impact of the results of the analysis to people in the Drumraney and Moyvoughly area, the applicant should describe the verification and quality assurance tests applied to the final estimates.

I have over five years' experience of validating and quality appraising health economic models conducted by external parties. While I'm not an expert in environmental modelling, the concepts of verification and quality assurance are universal. The biased assumptions applied in the model indicate that a biased approach may have been taken throughout model development. As a non-expert, it is likely that there are other biased inputs and approaches that I have not identified. Therefore, local residents cannot have confidence in the information as submitted.

Given the inaccuracies in the Application, I believe the Applicant should be required to prepare accurate estimates of the accuracy of shadow flicker for the residents' and the Board's

consideration. An independent expert review where the actual model and not just the claimed inputs and outputs is reviewed is also warranted.

It is not appropriate to state that mitigation measures will be implemented whatever the extent of shadow flicker would be in the event that the development is granted permission. Accurate estimates are required so that the affected parties are empowered with the knowledge of the extent of mitigation measures required if the development is granted, and so that they have the opportunity to make observations on the application.

Any reasonable individual would have to conclude that shadow flicker is a nuisance and a source of extreme annoyance for families who ought to be allowed to enjoy natural light and views from their home. Blinds are not an appropriate mitigation as they prevent the occupiers from enjoying the natural light that is important for mood and health. Technology exists so that families would not have to be subjected to shadow flicker. If the 2019 guidelines are applied, it's a win-win scenario for both windfarm developers and local residents. If the development is approved, the applicant should be mandated to apply the technology to remove all shadow flicker in line with HSE recommendations and the 2019 recommendations. Failure to remove shadow flicker further highlights that the Applicant does not care at all about the interests of the local residents.

### **Summary**

It is my firm belief that the benefit/harm balance for a windfarm of this scale in a low wind area does not lie in favour of the development.

Given evidence of the poor character of the Applicant to date including misleading leaflets (supplied to local residents (as supported by the Advertising Standards Authority for Ireland (ASAI) and the biased shadow flicker estimates presented above, I am concerned that there may be other bias throughout the application that is not identifiable to a non-expert. It is critical that the Board ensure that any decision is based on robust information.

Further, If the development is approved, I am concerned that the Applicant will not adhere to the conditions stipulated. If approved, clear processes, penalties and enforcement actions should be specified to ensure that noise and shadow-flicker mitigations required are enforced.

Many thanks for taking my observations on board. I look forward to reviewing the revised shadow flicker estimates and accurate reviews of the potential health effects in a resubmission to the Board.

Best wishes,

Dr Helen O'Donnell.