

Case Reference: PAX21.324561 – Crumhach Wind Farm, Co. Sligo

Re: Shadow Flicker and Human Health – Dwelling F91 HX59 and surrounding area

Dear Sir/Madam,

I wish to make an observation in relation to planning application **PAX21.324561 – Crumhach Wind Farm**, concerning the proposed decommissioning of 23 existing wind turbines and the construction of 17 substantially larger wind turbines with a proposed blade-tip height of approximately 180 metres.

I am particularly concerned about the potential impact of shadow flicker on my residential property identified by the Eircode location **F91 HX59 and the surrounding area**.

The existing turbines in this area are approximately 75 metres in height. The proposed development would introduce turbines approximately 180 metres in height, together with a different turbine layout and additional greenfield development. I am therefore concerned that the shadow-flicker characteristics experienced by this dwelling and surrounding areas could be materially different from those associated with the existing turbines.

1. Personal medical circumstances

I wish to make the Commission aware that I have **epilepsy**.

I appreciate that not every person with epilepsy is photosensitive and that the presence of wind-turbine shadow flicker does not automatically mean that a seizure will occur.

Nevertheless, flashing or repetitive changes in light can be a recognised seizure trigger for people with epilepsy. I am therefore particularly concerned about the possibility of repetitive turbine-blade shadows passing across the windows and occupied rooms of my home

This is not simply a concern about visual amenity. It is a concern about the potential effect of a particular environmental exposure on a person with a diagnosed neurological condition.

I respectfully request that my circumstances be specifically considered in the assessment of the potential human-health effects of this development.

2. Specific assessment of F91 HX59

I request that the shadow-flicker assessment for application PAX21.324561 clearly identify and assess F91 HX59 and the surrounding area as a receptor.

The assessment should establish:

- which proposed turbines could produce shadow flicker at the dwelling;
- the distance and direction of each relevant turbine;
- whether shadow flicker could enter the dwelling through windows;
- the precise dates and times at which it could occur;
- the duration of individual shadow-flicker events;
- the maximum daily duration;
- the predicted annual duration;
- the cumulative effect of more than one turbine;
- the assumptions concerning turbine operation, rotor speed, rotor diameter and blade configuration;
- the effect of topography between each turbine and the dwelling; and
- the difference between theoretical maximum exposure and realistic operational exposure.

I particularly request that the assessment take account of the proposed turbine dimensions, including the proposed 180 metre maximum tip height and large rotor diameter, rather than relying on the shadow-flicker characteristics of the existing approximately 75 metre turbines.

3. Additional concern regarding outdoor exposure

I also wish to raise a concern regarding potential shadow-flicker exposure when I am outside my dwelling, including when walking in the vicinity of my home.

My concern is not limited to shadow flicker entering the windows of F91 HX59. As I have epilepsy, I am also concerned about the possibility of encountering moving blade shadows or intermittent sunlight/shadow while outdoors in the vicinity of the proposed turbines.

I appreciate that the potential for such an effect is dependent upon the position of the sun, the turbine, the observer and the direction in which the observer is looking. I am not suggesting that every outdoor encounter would constitute a health risk.

However, I respectfully request that the assessment considers whether there are publicly accessible roads or areas routinely used by residents in the vicinity of the proposed turbines where repetitive blade-shadow effects could occur.

Where such exposure could occur, I request that the applicant identify the relevant locations, times of year and times of day and explain what measures would be available to prevent or minimise such exposure.

Given my epilepsy, I believe it is appropriate that consideration be given to avoiding the creation of a foreseeable flicker exposure in areas routinely used by residents, rather than limiting the assessment solely to shadow flicker occurring through windows of occupied dwellings

4. Increased scale of the proposed turbines

The change in turbine scale is substantial.

The existing turbines are approximately 75 metres high, whereas the proposed turbines have a maximum tip height of approximately 180 metres.

I therefore ask the Commission not to assume that the existing wind-farm situation provides an adequate indication of the potential shadow-flicker impact of the proposed development.

The relevant question is whether the proposed turbines, in their proposed locations and dimensions, could cause shadow flicker at F91 HX59 and in the general area where I reside, walk, cycle etc and, if so, what exposure could occur.

5. Applicant's stated intention regarding shadow flicker control

I also note that the applicant's public information regarding Crumhach Wind Farm states that a shadow-flicker assessment will be undertaken and that, where the results identify shadow flicker as possible at particular times, the relevant turbines will be equipped with a shadow-flicker control system and shut down as required to mitigate the effect.

I welcome that proposed mitigation.

However, given my epilepsy and the specific concern regarding F91 HX59, surrounding areas and neighbouring properties I visit I respectfully request that this commitment should not merely remain an intention of the developer.

If permission is granted, I request that an appropriate legally enforceable planning condition require automatic curtailment/shutdown of the relevant turbine or turbines whenever conditions capable of producing shadow flicker occur.

The system should operate automatically rather than depend upon a complaint being made after the shadow flicker has occurred.

6. Human health precaution

I ask the Commission to consider the potential effects on human health and residential amenity together with the specific circumstances of a resident with epilepsy.

Where modelling indicates that shadow flicker could occur at F91 HX59, I respectfully request that the potential exposure not be regarded as acceptable merely because a general annual guideline threshold is not exceeded.

A person with epilepsy may have a particular vulnerability to flickering visual stimuli, and therefore I ask that the assessment consider whether the exposure can reasonably be eliminated at source through turbine curtailment.

7. Requested information and safeguards

Before determining the application, I respectfully request that the Commission ensure that:

1. F91 HX59 and surrounding area where I walk etc. is individually assessed
2. The full shadow-flicker modelling is made available and clearly identifies the relevant turbines;
3. The modelling reflects the maximum proposed turbine dimensions and the final proposed turbine locations;
4. The assessment identifies the precise dates and times when shadow flicker could affect
5. The cumulative effect of multiple turbines is considered;
6. The potential human-health implications associated with my epilepsy are properly considered;
7. Any uncertainty in the modelling is addressed rather than assumed away; and
8. If any potential for shadow flicker is identified, an automatic turbine shutdown/curtailment system is imposed as an enforceable planning condition.

7. Request

In light of the substantial increase in turbine height from approximately 75 metres to approximately 180 metres, the proposed change in turbine layout, and my particular medical circumstances, I respectfully ask the Commission to give careful consideration to the potential for shadow flicker at **F91 HX59 and in the surrounding area.**

I further request that no reliance be placed solely on generalised shadow-flicker limits where it is technically practicable to prevent the exposure altogether through automatic turbine curtailment.

I ask that this observation be considered as part of the Commission's assessment of application **PAX21.324561**.

Yours faithfully,

Joan Kilgannon

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