

OBSERVATION/SUBMISSION TO PLANNING APPLICATION

Case Reference: 323761

Sinead Gilligan

Cooloo

Moylough

Ballinasloe

Galway

To: An Coimisiún Pleanála

64 Marlborough Street

Dublin 1

D01 V902

Date: 08 November 2025

Re: Observation/Submission to proposed wind energy development at Cooloo Wind Farm

Location: Cloondahamper, Cloonascragh, Elmhill, Cooloo, Lecarrow, Dangan Eighter, Lissavally, Slievegorm
- Co. Galway

Applicant: Neoen Renewables Ireland Limited

Dear Sir/Madam,

I was born and reared in Dangan and went to Brierfield National school. I recently purchased a house in Cooloo with my husband Dave and welcomed our first child Aoibhi four months ago. The house is 1.47km from Turbine no4. I am very concerned about the development of Cooloo Wind farm and the impact it will have on the landscape and the future health effects it will have on my family.

I strongly object to the proposed Cooloo Wind Farm and vehemently request An Coimisiún Pleanála to reject this planning application.

Community Consultation and Engagement

The basis that the consultation was undertaken by Neoen and MKO for the Cooloo Wind Farm has failed to meet the basic expectations of transparent and inclusive community engagement. It falls short of national guidelines and the intent of An Bord Pleanála's Strategic Infrastructure Development process.

Statutory notices were published in the Irish Examiner instead of the Tuam Herald, which most local

households rely on for news.

Despite claims of consultation with local groups, key organisations such as Killarney Community Council and Killarney GAA, were not engaged in any meaningful way.

No public event was held in Moylough, even though seven of nine turbines are proposed there, excluding many directly affected residents.

The developer's report cites "door-to-door engagement" with only 55 homes and ten written responses is evidence of a process that reached few and failed to inform many.

The developer's continued reliance on online materials to provide information disadvantaged rural residents with poor internet access and a large number of older residents without a technical knowledge.

These shortcomings show that the consultation was administrative rather than genuine, and did not provide the community with a fair chance to participate. An Bord Pleanála should recognise these significant deficiencies when assessing the project's compliance with public engagement standards.

Planning Framework and Guidelines

The application depends upon the 2006 Wind Energy Development Guidelines (WEDG), which are nearly twenty years old. These guidelines were written when onshore turbines rarely exceeded 100 metres in height. The proposed turbines, however, are approximately 180 metres tall, almost double that scale, yet the same 500-metre setback is applied. This outdated standard fails to reflect advances in turbine design, the increased magnitude of visual, noise and shadow impacts, or current scientific understanding of low-frequency sound and health. Comparable European jurisdictions apply height-based setbacks (for example, 10 times turbine height or a minimum of 1–2 km). Proceeding under static 2006 standards is inconsistent with international best practice and contrary to the precautionary principle enshrined in Article 191 of the Treaty on the Functioning of the European Union (TFEU). By relying on obsolete national guidance, the proposal fails to satisfy the Galway County Development Plan 2022–2028 (GCDP) objectives to preserve landscape character and protect residential amenity (Policies LCM 1 and LCM 2).

Right to Peaceful Enjoyment of Property

Article 1, Protocol 1 of the European Convention on Human Rights (ECHR) safeguards every individual's right to the peaceful enjoyment of their possessions. It provides that: "Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law."

Approval of this proposed wind farm would constitute a clear interference with this right. If the development proceeds, I will be deprived of the peaceful enjoyment of my home and property. The construction and operation phases would bring significant and continuous disturbance — including persistent noise pollution, low-frequency noise (LFN), shadow flicker, and heavy vehicle movements. The tranquillity and visual amenity of my surroundings, which form an intrinsic part of my home environment and well-being, would be irreversibly diminished.

During construction, the constant flow of heavy machinery and associated noise would cause ongoing disruption and stress, further impacting daily life. Once operational, the presence of industrial-scale turbines dominating the landscape would permanently alter the character of the area, stripping residents of the quiet enjoyment of their homes and lands. This level of intrusion cannot be considered proportionate or justified in the public interest, and therefore conflicts with the protections afforded under Article 1, Protocol 1 of the ECHR.

Property Devaluation

The 2023 CERIS (Centre for Economic Research on Inclusivity and Sustainability) paper – ‘Wind Turbines and House Prices Along the West of Ireland: A Hedonic Pricing Approach’ – surveyed the prices of houses located near windfarms in seven counties.

The paper states that: ‘The analysis finds a robust and significant reduction in property value of -14.7% within 1km of a turbine’ and that ‘Back-of-the-envelope calculations suggest that the total loss in value for houses within 1km of a turbine in the case counties is approximately €6.8 million.’

Galway County Council is an agent for the state of the Republic of Ireland and as such is responsible to uphold Article 40 of the Irish Constitution which states – ‘the state shall in particular by its laws protect as best it may from unjust attack and in the case of injustice done vindicate the life, person, good name, and property rights of every citizen.’

I am aware that the Barnaderg Cooloo Wind Farm Action Collective have spoken to a local auctioneer, who said that he had trouble selling a house in County Mayo because it was close to several wind turbines. The auctioneer was able to site a specific instance whereby a married couple looked at the house and decided not to buy it. The auctioneer said that the presence of the wind turbines was a crucial factor in the couple's decision not to buy the house. The owners of this house ended up selling for less money than the couple had been initially willing to pay for the house.

Noise

The proposed Cooloo Wind Farm should be refused planning permission, citing the Irish High Court case *Byrne & Moorhead v ABO Energy* [2025] IEHC 330, in which wind turbine noise was legally recognized as a private nuisance, leading to the permanent shutdown of turbines in County Wexford. The objection highlights that the Cooloo proposal fails to address proven low-frequency and amplitude-modulated noise impacts similar to those measured in the Wexford case, where sound levels far exceeded safe limits and caused serious disturbance to residents living over a kilometre away. The Cooloo project's reliance on outdated ETSU-style noise standards, which disregard low-frequency and tonal effects, is therefore deemed inadequate to protect public health and residential amenity.

The proposed turbines at Cooloo—significantly larger than those involved in the Wexford case—are likely to generate even stronger low-frequency noise that travels farther and fluctuates more intensely under local atmospheric conditions. This increases the risk of nuisance and potential legal liability for both developers and planning authorities. Ireland's 2006 wind energy guidelines are outdated and fail to reflect modern scientific understanding of turbine acoustics. Until revised national standards are adopted, approving large-scale wind farms under obsolete criteria would be unsafe and contrary to the public interest. Planning permission should therefore be refused due to the clear and foreseeable risk of harm to residential amenities, the inadequacy of current noise controls, and the legal precedent confirming wind turbine noise as a substantial nuisance.

Shadow Flicker

Given this proximity and the extraordinary scale of the proposed turbines, I believe the shadow flicker standards outlined in the Wind Energy Development Guidelines (2006) issued by the Department of Housing, Local Government and Heritage are no longer adequate to protect residential amenity or public health.

The proposed turbines represent a dramatic escalation in size compared to those contemplated in 2006:

- Tip Height: 180 meters
- Rotor Diameter: 162 meters
- Hub Height: 105 meters
- Swept Area: Over 20,000 m² per turbine

These dimensions significantly increase the area affected by moving shadows, extending the reach and intensity of shadow flicker events. The 2006 Guidelines do not account for turbines of this magnitude, nor the cumulative impact of multiple units in close proximity to residential receptors.

The Guidelines permit up to 30 hours of shadow flicker per year at any dwelling. This threshold is:

- Arbitrary and unsupported by contemporary health research
- Uniformly applied without regard to turbine scale or proximity
- Silent on cumulative exposure from multiple turbines

No scientific basis is provided for the 30-hour limit, and no differentiation is made between single-turbine exposure and multi-directional flicker from clustered arrays.

Shadow flicker is often dismissed as a minor nuisance, yet growing evidence suggests more serious implications:

- Annoyance and Stress: The U.S. Department of Energy's WINDEXchange notes that even limited flicker can create persistent discomfort, especially during sensitive times of day.
- Sleep Disruption: A 2013 report commissioned by the Scottish Government (University of Salford) found that shadow flicker may contribute to sleep disturbance and reduced sleep quality.
- Photosensitive Epilepsy: Although rare, flicker frequencies between 3–30 Hz can pose risks. Complex interactions between blade movement, sun angle, and window geometry may approach sensitive thresholds.
- Motion Sickness-like Symptoms: The ClimateXChange report noted symptoms such as dizziness and nausea linked to visual stimuli like flicker.
- Mental Health and Quality of Life: A 2023 article by Fritz Energy documented community complaints about anxiety, reduced concentration, and general decline in wellbeing.
- The Guidelines make no distinction between general receptors and vulnerable groups (children, elderly, or those with neurological conditions).
- In ABP Case 318943, shadow flicker was cited as a material concern, particularly where receptors were located within 500m of turbines. The Environmental Impact Assessment recommended turbine-specific control measures.

The 2006 Wind Energy Development Guidelines offer minimal direction on how shadow flicker should be assessed, modelled, or mitigated. This omission is particularly problematic in the context of modern turbine arrays, where cumulative impacts and technological scale far exceed what the original standards contemplated.

The Guidelines do not specify:

- Which modelling tools should be used (e.g. WindPRO, WAsP, or bespoke GIS-based systems)
- What input parameters are required (e.g. rotor dimensions, sun path algorithms, terrain shading)
- Whether modelling should account for worst-case scenarios or realistic exposure windows

This opens the door to inconsistent and potentially misleading assessments. Developers may use optimistic assumptions (e.g. average sunshine hours, limited exposure angles) that understate the true impact on nearby dwellings.

There is no requirement to assess:

- Overlapping flicker events from multiple turbines
- Multi-directional exposure due to turbine layout
- Seasonal variation in sun angle and flicker duration

The Guidelines do not require developers to implement or even consider:

- Automated curtailment systems that shut down turbines during predicted flicker windows
- Physical shielding (e.g. planting, screens) to block flicker paths
- Real-time monitoring or complaint-based response protocols

This leaves residents like us with no enforceable protection. Even if flicker exceeds tolerable levels, there is no mechanism to compel mitigation unless it's voluntarily offered by the developer or imposed by planning conditions.

Other jurisdictions have moved beyond static thresholds:

- Germany requires modelling based on actual sunshine hours and mandates curtailment if flicker exceeds 30 minutes per day.
- Scotland recommends site-specific modelling and mitigation, especially near sensitive receptors.
- The Netherlands uses dynamic modelling and requires flicker-free zones around homes.

Ireland's 2006 Guidelines fail to reflect these advances, leaving communities exposed to outdated standards that do not match the realities of modern turbine design.

The shadow flicker provisions in the 2006 Wind Energy Development Guidelines are outdated and insufficient for assessing the impacts of modern wind farms, particularly in residential settings like mine. The scale and proximity of the turbines proposed near my home significantly increase the risk of adverse effects, yet the current standards offer no meaningful protection.

I respectfully urge the planning authority to:

- Apply a precautionary approach
- Require robust modelling and mitigation
- Consider the lived experience of residents
- Reject applications that fail to demonstrate compliance with updated standards

References

- Wind Energy Development Guidelines (2006) – Department of Housing, Local Government and Heritage
- ABP Case 318943 – Chapter 11: Shadow Flicker
- WINDEXchange – U.S. Department of Energy
- ClimateXChange – Report on Health Impacts of Wind Turbines (2013)
- Fritz Energy – Wind Turbines and Shadow Flicker (2023)
- Clean Power – Wind Turbines and Public Health

Impact of Wind Turbines on the Neurodiverse within the Community

Numerous studies and planning inspectors with An Coimisiún Pleanála have acknowledged that wind turbines can have negative effects on neurodiverse individuals. Research by Howell (2015) found that people with autism are more sensitive to environmental noise, experiencing higher rates of sleep disturbance, cognitive difficulties, and stress due to low-frequency noise (LFN). The neurodiverse community often struggles to filter background sounds, and constant turbine noise and vibration could cause pain, anxiety, and loss of concentration, reducing quality of life.

These impacts extend to education. Local schools and preschools, including Brierfield National School which has a special class for children with autism, would be particularly affected. Senior planning inspectors have previously noted that facilities for children with additional educational needs may become unviable near large-scale wind farms due to such disturbances.

Shadow flicker poses further risks, as studies (Becchio et al., 2010) show that individuals on the autistic spectrum may fixate on spinning movements, heightening distress. Those with epilepsy or neurological conditions may also be affected.

Ireland's obligations under the UN Convention on the Rights of Persons with Disabilities require protection from harm and equal enjoyment of rights. Allowing this development would contradict those principles.

While more research is needed, there is no definitive evidence proving that wind farms are safe for, and do not significantly impact, the neurodiverse community—and the absence of evidence is not evidence of

absence.

References:

- An Bord Pleanála. (2016). PA0041 – Assisting report to Senior Inspector [PDF].
<https://www.pleanala.ie/anbordpleanala/media/abp/cases/reports/pa0/rpa0041a.pdf>
- An Bord Pleanála. (2015). Inspector's report: ABP-PA0038 [PDF].
<https://www.pleanala.ie/anbordpleanala/media/abp/cases/reports/pa0/rpa0038.pdf>
- Howell, G. (2015). Autism and the effect of introducing a new noise source into quiet rural communities: risk factor from industrial wind power generation
- Becchio C, Mari M, Castiello U (2010) Perception of Shadows in Children with Autism Spectrum Disorders. PLoS ONE 5(5): e10582.
<https://doi.org/10.1371/journal.pone.0010582>

Brierfield National School

Brierfield National School is 1.35 km away from Turbine No 1

The turbines being this close to the school will no doubt have an impact on the education of the children in Brierfield NS. The school will suffer from noise pollution, infrasound and shadow flicker. In addition to this, during the construction phase and while laying cabling the roads to and from the school will be impacted by road closures, traffic, additional noise and dust. Again, all of this will impact on the children of the school.

Brierfield NS also has a special class for children with Autism. These children process noise and light differently to other children. The noise, infrasound and shadow flicker will no doubt impact on their daily lives in school.

I am also concerned that if planning permission is granted less people will be moving to or building in the catchment area of Brierfield NS. This will lead to fewer children in the community and may lead to the school losing teachers, and ultimately the school closure.

Biodiversity Impact - Earthworms

I object on the grounds that the Environmental Impact Assessment fails to address the impacts of wind turbine-induced vibrational noise on soil biodiversity and ecosystem function, particularly earthworm populations.

Recent peer-reviewed research by Veljilla et al. (2021, *Oikos*, 130(7), 1033–1047) demonstrates that wind turbines generate continuous low-frequency vibrations (< 500 Hz) that travel considerable distances through soil. Key findings include:

- Vibrational noise decreased by only 23 ± 7 dB over 200 metres, meaning measurable vibration extends well beyond turbine bases
- Earthworm abundance declined by approximately 40% near turbines compared to sampling points further away
- Soil compaction and crop type were ruled out, confirming vibrational noise was the primary cause
- The impact is body-size-dependent, especially harmful to earthworms and other large soil invertebrates

Earthworms are critical "ecosystem engineers" essential to soil health and agricultural productivity. A 40% decline in their populations can lead to:

- Reduced soil aeration and water infiltration, increasing flooding and erosion risks
- Disruption of nutrient cycling and carbon sequestration, undermining soil fertility and climate regulation
- Deterioration of soil structure and microbial balance, impacting crop performance and long-term land viability

These impacts are especially concerning in productive agricultural soils. The Cooloo site shares characteristics with the farmland studied by Velilla et al. (2021) — organically managed, rural, and composed of active agricultural soils.

The Environmental Impact Assessment submitted for Cooloo does not address subsurface vibrational noise or its potential to degrade soil ecosystems. This represents a significant omission in the assessment of environmental and agricultural impacts.

I respectfully request that An Coimisiún Pleanála require:

- Comprehensive assessment of soil-borne vibrational noise impacts
- Evaluation of effects on soil macrofauna, especially earthworms
- Protective buffer zones of at least 200–250 metres from turbine bases to high-value agricultural soils
- Vibration-dampening measures in turbine design and foundations
- Soil biodiversity indicators in post-construction monitoring

Reference:

- Velilla, E., Collinson, E., Bellato, L., Berg, M.P., & Halfwerk, W. (2021). Vibrational noise from wind energy turbines negatively impacts earthworm abundance. *Oikos*, 130(7), 1033–1047.
<https://doi.org/10.1111/oik.08166>

Extra construction traffic

I strongly object to this proposal due to the major disruption and safety risks it poses to our local community during the construction phase. The Traffic Management Plan fails to provide clear information on delivery schedules, routes or mitigation for abnormal turbine loads. Our rural roads are narrow, shared by farm machinery, school buses and local traffic, and cannot safely accommodate such heavy haulage without damage or obstruction. The application states that there will be approximately 14 extra return trips made by trucks carrying materials. This is vastly underestimated for a project of this size. There are no binding guarantees on road repairs, traffic management or timing of deliveries to avoid peak community use. Residents, farms and schools in Barnaderg, Cooloo and surrounding areas will face delays, dust, noise and restricted access. This plan does not adequately safeguard community safety, local livelihoods or the integrity of rural infrastructure. Permission should not proceed without full, enforceable traffic controls and local protection measures.

Climate impact

I object to the proposed Cooloo Wind Farm because it would damage Ireland's ability to meet its climate targets under the Climate Action and Low Carbon Development Act 2021. By excavating peat and clearing mature forest, this project will release large amounts of stored carbon and increase emissions from the Land Use, Land Use Change and Forestry (LULUCF) sector, which is already a major source of greenhouse gases. Under the law, all public bodies must act consistently with national carbon budgets. Allowing a development that worsens LULUCF emissions contradicts that duty and the EU 'no debit' rule under Regulation (EU) 2018/841. Renewable energy projects are important, but they should not come at the cost of destroying carbon-rich habitats or undermining Ireland's long-term environmental obligations.

Bird collision risk

I object to the proposed development on the grounds that the Collision Risk Assessment (Appendix 7-6, MKO 2025) is methodologically and scientifically inadequate to protect legally protected bird species.

The assessment relies on the theoretical Band Model, which assumes fixed avoidance rates and static behaviour, without validation using telemetry or local field data. Survey coverage is temporally and spatially limited, missing key migration and nocturnal flight periods. This approach fails to capture the real-world

behaviour of birds in the area.

The use of a 99.5% avoidance rate for Whooper Swans, without local validation, significantly underestimates the risk of collision. Evidence from Irish Wetlands Bird Survey (I-WeBS) and BirdWatch Ireland indicates that Whooper Swans routinely commute between Horseleap Lough and surrounding feeding areas at low altitudes that overlap turbine rotor heights. The conclusion of 'negligible risk' is therefore unsupported and unreliable.

The report fails to consider cumulative impacts with other regional wind farms or infrastructure, contrary to EU Directive 2009/147/EC (Birds Directive) and Article 6(3) of the Habitats Directive. This is a serious omission given the presence of multiple wind energy developments in the region.

Mitigation measures are undefined and untested. Key figures such as flightline maps (e.g., Figure 7-6-1) are omitted, hindering independent review and transparency. Without clear, evidence-based mitigation strategies, there is no guarantee that collision risks can be managed effectively.

Under the Birds Directive (2009/147/EC) and the Habitats Directive, Ireland has a legal obligation to protect migratory and resident bird populations. The assessment as presented does not provide sufficient evidence that these obligations can be met.

I respectfully request that the planning authority reject or defer this application pending an independent, peer-reviewed reassessment. This should include:

- Full telemetry and radar data for local bird populations
- Expanded seasonal coverage including migration and nocturnal periods
- Transparent disclosure of all field survey data and model assumptions
- Cumulative impact assessment with regional wind farms
- Defined, evidence-based mitigation strategies

References:

- MKO (2025). Appendix 7-6 Collision Risk Assessment, Cooloo Wind Farm EIA
- Band, W., Madders, M. & Whitfield, D. (2007). Developing field and analytical methods to assess avian collision risk at wind farms
- Scottish Natural Heritage (2018). Avoidance Rates for the Onshore Wind Farm Collision Risk Model
- NatureScot (2021). Research Report 909: Using a collision risk model to assess bird collision risks onshore wind farms
- Rees, E. (2006). Whooper Swans: Biology and Conservation. T & AD Poyser
- Crowe, O. et al. (2019). Migration and Roosting of Whooper Swans. Irish Birds 43
- BirdWatch Ireland (2024). Whooper Swan Species Profile & Irish Wetlands Bird Survey (I-WeBS)
- European Commission (2021). Wind Energy and Natura 2000

Visual Impact

The proposed turbines would be highly intrusive and visually dominant, overwhelming the existing rural character of the local landscape. Their visibility from multiple vantage points would transform a natural and agricultural setting into an industrial-scale development.

The proposal is out of scale with the surrounding environment. The turbines' extreme height and size would cause visual clutter and a loss of scenic amenity, remaining visible even at long distances and creating continuous visual intrusion.

When combined with existing or approved wind farms in the region, this development would lead to visual saturation and skyline dominance, further eroding the landscape's character and reducing its recreational value.

The developer's visual impact assessment understates the visibility and significance of the turbines. Photomontages appear selective and fail to represent the true extent of visual intrusion likely to be

experienced by residents and visitors.

The proposal would diminish the rural amenity, tranquillity, and identity of the local region. It threatens the area's sense of place and the quality of life for residents who value the natural and agricultural landscape.

The local wind farm's size and visual impact are excessive and inconsistent with the character of the area. While supporting renewable energy, developments must respect the local landscape — this project does not. The proposal should therefore be refused on the grounds of unacceptable visual and landscape impacts.

Conclusion

In light of the serious concerns outlined above I respectfully urge An Coimisiún Pleanála to refuse permission for this development. The proposal is not compatible with the principles of proper planning or sustainable development. This proposal has also divided our community and in time, if this development is allowed to go ahead, it will destroy relationships within the community and no doubt have an impact on the population of the community.

If permission is not refused outright, I request that an oral hearing be held so that the community can have our say on the impacts of this development.

Yours Sincerely,

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Name: Sinead Gilligan
Date: 08 November 2025