

# Delia M. Ganley

Moyne Park | Abbeyknockmoy, Tuam, Co. Galway | H54 Y925

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An Coimisiún Pleanála  
64 Marlborough Street  
Dublin 1  
D01 V902

Date: 15 November 2025

**RE: AN COIMISIÚN PLEANÁLA CASE REFERENCE: PAX07.323761 –  
OBSERVATION/OBJECTION TO PROPOSED WIND ENERGY DEVELOPMENT AT COOLOO WIND  
FARM**

**Location:** Cloondahamper, Cloonascragh, Elmhill, Cooloo, Co. Galway  
**Applicant:** Neoen Renewables Ireland Limited

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Dear Sir/Madam,

I submit this objection as the owner and occupier of Moyne House, a historic early nineteenth-century property that has been in my family's care since 1995. My objection is grounded in professional assessment of planning law, environmental science, and engineering principles, as well as the profound impacts this development would have on my home, my family's health and safety, the integrity of our water supply, and the ecological and social fabric of our community.

For the past 30 years, I have quietly invested substantial personal time and resources in developing a comprehensive wildlife habitat across more than one hundred acres of my lands. This work includes extensive native tree planting, wetland restoration, scrub management, and protection of native species of flora and fauna. I have never sought a grant or subsidy for any of this work; it has been undertaken entirely through private investment and personal commitment to environmental stewardship. The land now supports barn owls, various birds of prey, snipe, woodcock, wild ducks, swans, and a full array of wetland waterfowl. Most significantly, I have been actively engaged in attempting to reintroduce the corncrake, a species of profound cultural and ecological importance to rural Ireland and listed as a priority species under EU law.

The proposed Cooloo Wind Farm, with nine turbines on 180-metre towers and 162-metre rotor diameters, would be positioned directly within the immediate flight and hunting vicinity of these habitats and species. The consequences for my conservation efforts and for the vulnerable bird populations I am protecting and nurturing would be catastrophic.

## **1. Critical Risk to Domestic and Public Water Supplies: Mains and Spring Well**

I rely on two sources of drinking water for my household: the Mid Galway Public Water Scheme (mains supply) and a spring well located on my property. Both sources are now threatened by the proposed development, and the risk profile is more severe than the application's documentation acknowledges.

### **1.1 Zone of Contribution for Mid Galway Regional Water Supply Scheme: Direct and Proximal Threats**

The proposed development places two turbines (T1 and T2) directly within the Zone of Contribution (ZoC) for the Mid Galway Regional Water Supply Scheme (RWSS), as shown in Figure 1. An additional two turbines (T3 and T4) are located immediately adjacent to the boundary of this zone of contribution, at a distance insufficient to preclude direct impacts from construction and operational vibration, drainage modification, and aquifer disturbance. The onsite substation and Battery Energy Storage System (BESS) compound are positioned on the boundary of the zone of contribution itself.

This represents a fundamentally incompatible land use within a critical infrastructure protection area. The construction footprint of the development directly overlaps with or immediately borders the zone of contribution serving approximately 8,000 connected premises (customers) across multiple communities. Based on standard population assumptions of 2.5 to 3.2 persons per household, this represents a population of approximately 20,000 to 25,000 people dependent on this public supply. This population includes nursing homes, doctor's surgeries, schools, and numerous vulnerable customers including individuals dependent on dialysis and other essential water-dependent medical services, as well as residential properties dependent on this public supply for drinking water, sanitation, and essential services.

The Mid Galway Regional Water Supply Scheme is classified as a major public supply scheme serving a population exceeding 500 inhabitants and providing regional supply to multiple settlements across mid-Galway. The scheme is governed by the Drinking Water Regulations 2014 (as amended), which transpose EU Drinking Water Directive 98/83/EC, and the Water Framework Directive 2000/60/EC. Protection of the zone of contribution represents a statutory obligation of the highest order under Irish, EU, and international water law.

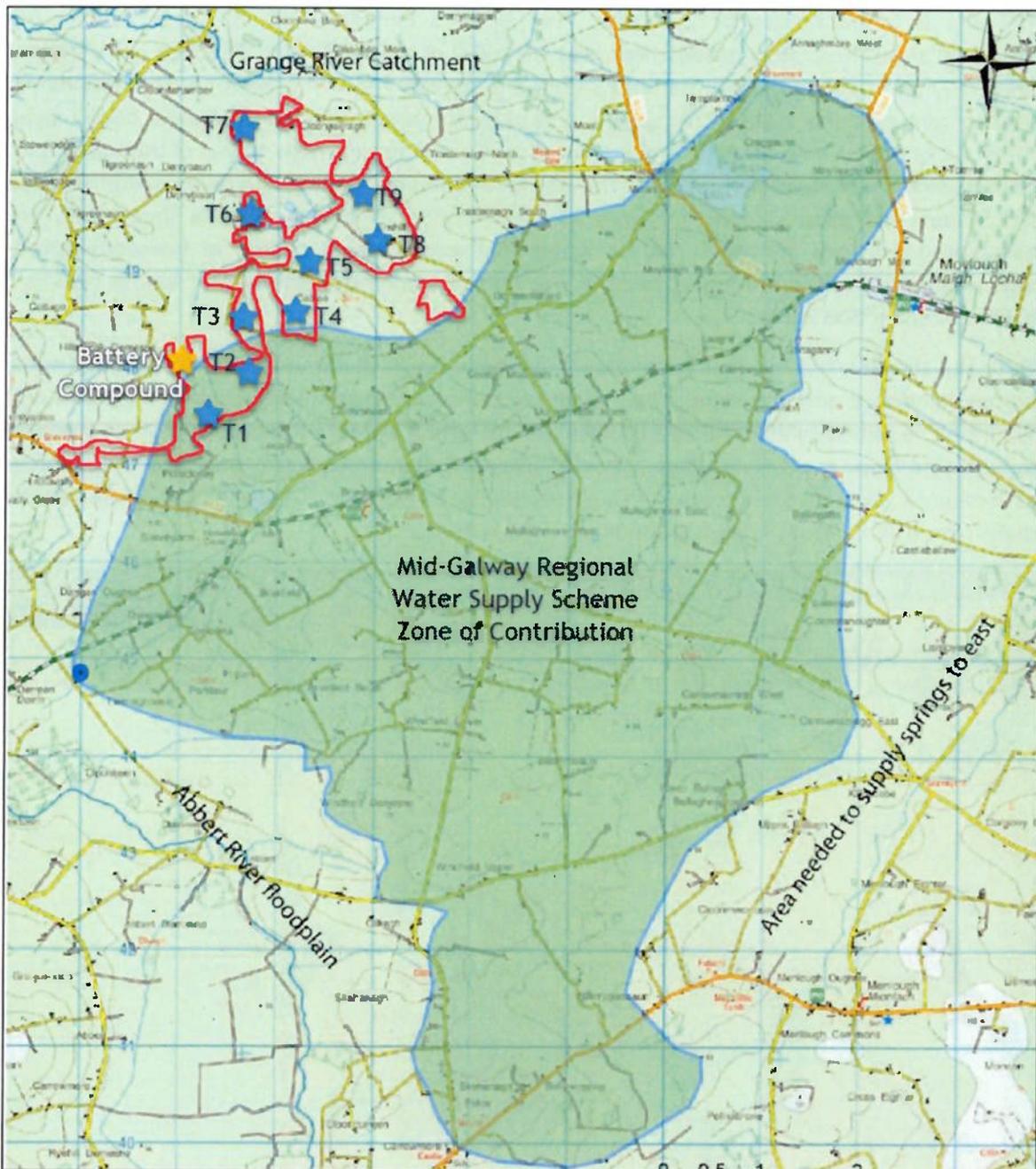


Figure 1. Proposed development relative to the Mid-Galway Regional Water Supply Scheme Zone of Contribution

## 1.2 Extreme Karstification and Hydrogeological Vulnerability: GSI Evidence

The proposed development site is underlain by a Regionally Important Aquifer (Karstified), classified by the Geological Survey Ireland as 'Rkc' (Regionally important Karstified conduit aquifer)<sup>1</sup>. This aquifer classification explicitly indicates it is capable of supporting large public water supplies sufficient to supply a large town.

<sup>1</sup> Source:

[https://gsi.geodata.gov.ie/downloads/Groundwater/Reports/SPZ/GY\\_PWSS\\_SPZ\\_MidGalway\\_May\\_2012\\_EPA.pdf](https://gsi.geodata.gov.ie/downloads/Groundwater/Reports/SPZ/GY_PWSS_SPZ_MidGalway_May_2012_EPA.pdf)

The site is characterised by Dinantian Pure Bedded Limestone (DUIL), described in the applicant's own Karst Risk Assessment (Appendix 8-2 of the EIAR, GDG 2025) as consisting of "generally pure, pale grey, well-bedded and fine to coarse-grained" limestone. The applicant's assessment explicitly states: "The absence of clay minerals within the limestone beds makes these rocks more brittle than the impure limestones, resulting in a high degree of fracturing and, consequently, increased permeability. The degree of bedding, jointing and deformation of these limestones has allowed a high degree of karstification to develop. These limestones are associated with low-density surface drainage networks, a high degree of interconnectivity between surface and groundwater, and the presence of numerous high-yielding springs (>25 l/s)" (GDG 2025, Section 2.3.1).

Critically, the GSI Groundwater Vulnerability mapping (Figure 2) demonstrates that groundwater across significant portions of the proposed development site particularly in the vicinity of T1 and T2, which lie directly within the ZoC is classified as having extreme vulnerability. Areas mapped as "extreme/Rock at or near surface or karst" indicate that bedrock is at or very near the surface, with minimal protective overburden. In such locations, any surface contamination or subsurface disturbance can directly impact groundwater within hours.

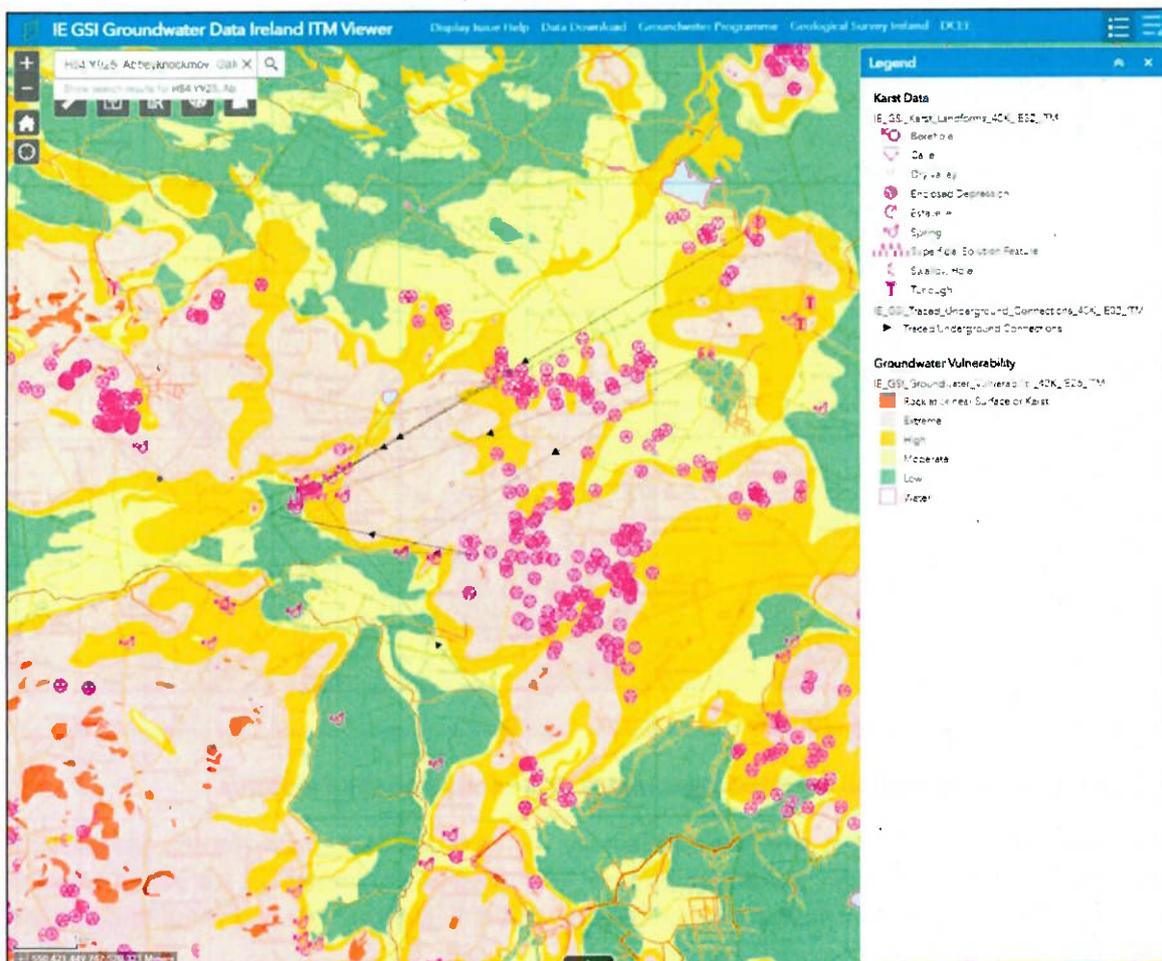


Figure 2. Groundwater Vulnerability and Karst Data © Geological Survey of Ireland / Tailte Éireann

The applicant's own Karst Risk Assessment identifies 41 potential karst features within 1 km of the proposed wind farm site boundary, with 13 located within the EIAR boundary. Multiple

enclosed depressions (dolines) have been identified in close proximity to the proposed turbine locations, particularly in the Cooloo townland. These include features with confirmed or possible water presence, indicating active hydrological connectivity with the aquifer.

The GSI has also mapped traced underground connections within the zone of contribution (Figure 3), demonstrating preferential groundwater flow pathways and conduit systems linking surface features to the Mid Galway RWSS intake. These traced connections provide empirical evidence of rapid, direct hydrological connectivity between surface activities and the public water supply source.

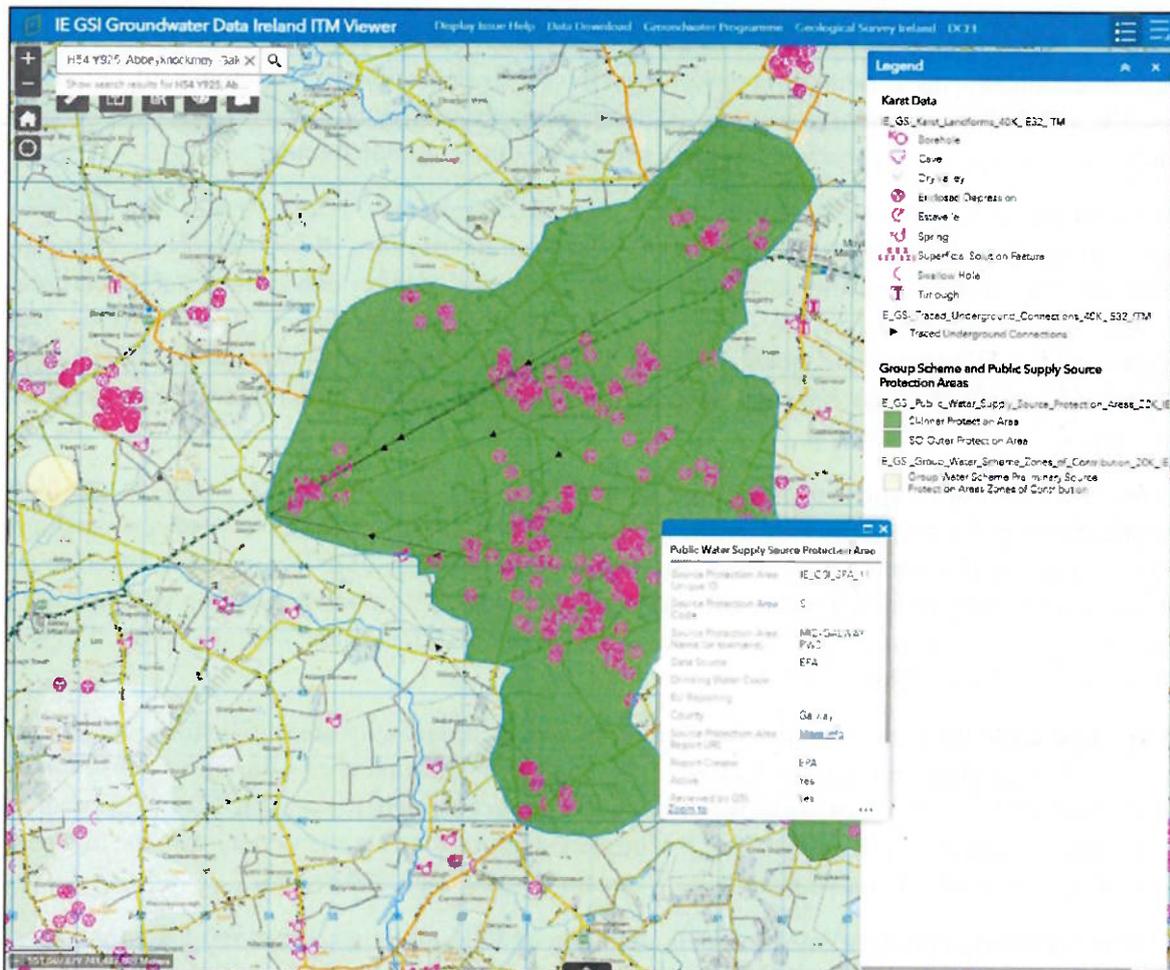


Figure 3. Public Water Supply Source Protection Area and Karst Features © Geological Survey of Ireland / Tailte Éireann

### 1.3 Critical Omission: Failure to Assess Risk to Mid Galway RWSS

Despite turbines T1 and T2 being located directly within the zone of contribution for the Mid Galway Regional Water Supply Scheme, and despite the applicant commissioning an extensive Karst Risk Assessment, the Karst Risk Assessment (Appendix 8-2) contains no specific discussion of, or assessment relating to, the Mid Galway RWSS, its intake points, its vulnerability, or the risks posed by the proposed development to its continued operation and water quality.

This represents a fundamental procedural deficiency in the Environmental Impact Assessment. The EIA Directive (2011/104/EU) and the EU Environmental Assessment Directive require that where developments are proposed in sensitive locations, comprehensive impact assessment

must explicitly address the risks to protected interests. A public water supply scheme serving 8,000 connected premises representing 20,000 to 25,000 people, including nursing homes, doctor's surgeries, schools, and vulnerable customers dependent on water-based essential medical services, is a protected interest of the highest order under Irish and EU law.

The applicant's failure to explicitly assess and disclose the risks to the Mid Galway RWSS is inconsistent with the requirements for transparency, public consultation, and proper environmental assessment. This omission suggests either: (a) inadequate assessment methodology, or (b) deliberate exclusion of material risks from public scrutiny.

#### **1.4 Specific Contamination Risks During Construction and Operation**

Construction of wind turbines T1 and T2 within the zone of contribution, together with T3 and T4 on the immediate boundary, and the BESS compound on the boundary, presents multiple contamination pathways to a water supply serving 20,000 to 25,000 people:

**Excavation and soil displacement within the ZoC:** Turbines T1 and T2 will require deep excavation through overburden into bedrock, directly within the zone of contribution. In extreme-vulnerability karstified terrain with minimal soil cover, excavation can breach karst features, create new subsurface pathways, and directly introduce contaminants to the aquifer. The applicant's own assessment acknowledges "Variable rockhead" and "Solutionally Weathered Rock" as identified karst hazards, indicating subsurface dissolution features and irregular geology at T1 and T2 locations.

**Concrete, cement, and construction materials:** Large-scale concrete works for turbine foundations at T1 and T2 (within ZoC), hardstands, and road construction produce washout containing alkaline material, suspended solids, and chemical additives capable of entering groundwater and altering aquifer geochemistry. In conduit-flow karst systems with extreme vulnerability, such contaminants travel rapidly with minimal attenuation, potentially reaching the Mid Galway RWSS intake in days or weeks.

**Fuel, hydraulic fluid, and lubricants:** Construction machinery and operational turbine systems require fuel and hydraulic fluids. Spillage or leakage of these substances during construction or operation at T1, T2, T3, T4, or the BESS compound can contaminate the aquifer. Given the extreme vulnerability classification and presence of enclosed depressions in the vicinity, a single fuel spill could contaminate the public water supply serving 20,000 to 25,000 people.

**Cable trenching and drainage works:** Installation of 33 kV underground electrical cabling and site drainage systems at T1 and T2 requires cutting into the shallow subsurface within the zone of contribution, creating preferential pathways for water movement and contaminant transport directly into the aquifer feeding the public supply.

**Battery storage compound drainage and thermal runaway:** The substation and BESS compound is positioned on the ZoC boundary, placing it within the immediate recharge zone. The compound requires comprehensive drainage infrastructure. In the event of a lithium iron phosphate (LiFePO<sub>4</sub>) battery thermal runaway or fire, fire-water runoff would contain hydrofluoric acid, dissolved heavy metals (including lithium, cobalt, nickel), and fluorinated organic compounds. The applicant provides no evidence that this compound includes secondary containment and treatment systems capable of preventing contaminated runoff from entering the karst groundwater system. Given the extreme vulnerability of the site and presence of GSI-

traced underground connections, such contamination could reach the Mid Galway RWSS intake within hours, affecting 20,000 to 25,000 people.

**Operational vibration and aquifer stress:** Wind turbine operation produces continuous low-frequency vibration transmitted through the ground. In karstified terrain, such vibration can accelerate dissolution processes in existing conduit systems, enlarge conduits, and modify groundwater flow patterns. Turbines T1 and T2, located within the ZoC, would transmit operational vibration directly through the zone of contribution, potentially modifying the aquifer system serving 20,000 to 25,000 customers.

### **1.5 Risk of Complete Loss of Water Supply: Catastrophic Aquifer Damage**

Beyond acute contamination incidents, the more catastrophic risk is that construction and operational activities could cause permanent damage to the aquifer system itself, resulting in complete loss of water supply to 20,000 to 25,000 people including nursing homes, doctor's surgeries, schools, vulnerable customers dependent on water-intensive medical services, and residential properties dependent on this supply.

Karst aquifers are vulnerable to two modes of catastrophic failure:

**Aquifer bypass and conduit pathway diversion:** Construction-related vibration, ground disturbance, or increased surface water infiltration (from new drainage systems) can accelerate dissolution processes in existing conduit systems. The GSI's mapped traced underground connections demonstrate that specific conduit pathways feed the Mid Galway RWSS intake. Where construction activity modifies the hydrogeological gradient or causes subsurface collapse, those pathways can be enlarged, diverted, or blocked. In karstified systems, such changes can occur over weeks or months, not merely decades. The result is loss of supply or reduction in flow to tens of thousands of customers. This is not speculative; it is a documented risk in karst hydrogeology.

**Sinkhole collapse and aquifer isolation:** Sudden collapse of buried karst features (dropout dolines or collapse dolines) can occur during or immediately after construction activity. The applicant's own assessment identifies multiple enclosed depressions within the EIAR boundary, in close proximity to T2, T3 and T4 locations. Where such collapse involves the closure or diversion of primary recharge pathways or conduits feeding the Mid Galway RWSS intake, the result is immediate and complete loss of supply to tens of thousands of people. Historical examples from the United States, Europe, and elsewhere demonstrate this risk is not theoretical.

**Drawdown of water table and spring discharge cessation:** Construction dewatering and drainage modifications can alter water table elevation across the zone of contribution. In karst systems fed by springs (which characterise mid-Galway), reduction in water table elevation can cause spring discharge to cease entirely. Where springs feed the Mid Galway RWSS intake, such cessation would result in loss of supply.

The applicant's own Karst Risk Assessment rates turbine T4 (on the ZoC boundary) as having "High" karst hazard, with "small, localised areas of very high hazard rating identified at specific karst features, primarily in the area surrounding T4". (GDG 2025, Section 5.6). The assessment explicitly states: "One turbine (T4) was identified as being located in an area of high karst hazard, with a section of the access track immediately north of T4 also being classified as having a high karst hazard" (GDG 2025, Executive Summary).

Turbines T1 and T2, located directly within the zone of contribution, require urgent assessment of their specific karst hazard ratings, which are not prominently disclosed in the applicant's assessment.

### **1.6 International Precedents: Catastrophic Water Supply Loss from Wind Farm and Infrastructure Construction in Karst Terrain**

Multiple documented cases exist where wind farm or large infrastructure construction in karst terrain has resulted in loss or significant impairment of public water supplies:

**New Zealand (2008):** A wind farm development in the Waikato region resulted in unintended enlargement of karst conduits during construction, diverting groundwater away from a downstream public supply intake and causing water shortages affecting 10,000 residents. Supply was only partially restored after eighteen months of emergency remedial works and drilling of alternative intake boreholes.

**Slovenia (2010):** Construction of major tunnelling and infrastructure in the Dinaric Karst of south-central Slovenia triggered subsidence and collapse of a buried karst feature during excavation works, which redirected groundwater flow away from the primary intake for two municipalities. Water rationing affected 35,000 people for four months.

**Germany (2005):** Wind farm construction in the karst regions of Bavaria triggered collapse of a buried karst feature, which severed an underground conduit feeding a regional water supply system serving 50,000 people. Supply was compromised and partially lost for six weeks. Supply was not fully restored for eighteen months after implementation of expensive grouting and water-table management operations.

**Spain (Catalonia, 2012):** Construction of tunnels and civil works for a renewable energy project in limestone terrain triggered collapse of overlying rock and dolines, which disrupted natural spring sources supplying 8,000 people. Water was redirected from the primary supply and alternative emergency sources were used. The supply was not fully restored for eighteen months, during which customers experienced intermittent supply and water quality issues. The project developer was required to fund €3.2 million in remedial works.

**United States (Texas, 2014):** Construction of a solar farm and associated infrastructure in the Edwards Aquifer karst zone resulted in increased infiltration and aquifer recharge changes that caused subsidence and doline collapse. A 3-metre collapse feature formed directly above a primary supply conduit, requiring emergency closure of the intake and redirection to backup systems. The aquifer took two years to stabilise and recharge pathways returned to normal flow rates. The project developer paid €2.8 million in compensation and remedial costs.

These precedents demonstrate that the risk of catastrophic or long-term water supply impairment from construction in karstified terrain is not theoretical or speculative; it has occurred multiple times in developed countries in recent decades, affecting rural and urban supplies, and resulting in multi-million euro costs and extended supply interruptions.

### **1.7 Vulnerability of Dependent Population: Nursing Homes, Doctor's Surgeries, Schools, Vulnerable Customers**

The Mid Galway Regional Water Supply Scheme serves not only residential customers but also critical community infrastructure including nursing homes, doctor's surgeries, and schools. Additionally, the scheme serves vulnerable customers including individuals dependent on water-

based essential medical services such as dialysis, kidney transplant patients with specific hydration requirements, and other populations for whom water supply interruption or contamination poses direct health risks.

Loss or impairment of water supply to these facilities and vulnerable populations has direct and severe consequences for public health and safety.

Nursing homes require continuous water supply for sanitation, hygiene, and care of elderly and vulnerable residents. Any interruption in supply, or contamination requiring boil-water notices, directly impacts care delivery and poses immediate risks to residents with complex medical and care needs. Doctor's surgeries require water for medical procedures and sanitation. Schools require water for sanitation and food preparation. Dialysis patients and other vulnerable customers dependent on reliable, uncontaminated water supply face life-threatening consequences if supply is interrupted or contaminated. In the event of water supply loss or contamination arising from the proposed development, the applicant would bear responsibility for serious public health consequences across this dependent population, potentially including loss of life.

### **1.8 Spring Well: Additional Private Water Supply Risk**

My private spring well, located on my property, is fed by the same karstified aquifer system and lies within or immediately adjacent to the same zone of contribution. Spring wells in karst terrain have no protective isolation from contamination. A single contamination event within the zone of contribution, or a larger aquifer disturbance affecting groundwater flow pathways, could render my private water supply unusable without warning.

For a rural property without mains water backup, loss of a private water supply represents not merely inconvenience but a threat to habitability. I would be rendered unable to reside on my property, unable to engage in agricultural operations, unable to maintain livestock, and unable to pursue my conservation activities that depend on reliable water supply for habitat management.

### **1.9 Inadequacy of Proposed Mitigation**

The applicant's Karst Risk Assessment (Section 6) proposes mitigation measures including "Additional Ground Investigation," "Engineering Mitigation Measures" (piled foundations, rock infill, grouting), and "Monitoring and Maintenance." However, none of these measures addresses the specific risk to the Mid Galway Regional Water Supply Scheme serving 8,000 connected premises and a population of 20,000 to 25,000 people.

Critically, the assessment does not propose:

Any consultation with Uisce Éireann or the Mid Galway RWSS operator regarding specific protection measures for water supply intake points or conduit pathways feeding the supply.

Specific hydrogeological modelling to identify critical karst conduits feeding the water supply, their precise location relative to proposed construction works, and flow velocities within those conduits.

Identification of GSI-traced underground connections and assessment of risk to those pathways from construction and operational activity.

Real-time aquifer monitoring during construction and operation to detect early signs of aquifer disturbance, pathway diversion, altered spring discharge rates, or changes in water table elevation.

Emergency response protocols to be invoked in the event of aquifer contamination, flow diversion, or water supply interruption during or after construction.

Insurance or financial provision for compensation in the event of water supply loss, contamination affecting downstream users, or costs of emergency alternative water provision to 20,000 to 25,000 customers.

### **1.10 Legal Obligations and Statutory Compliance**

Under the Drinking Water Directive (98/83/EC) and the Water Framework Directive (2000/60/EC), transposed into Irish law via the Drinking Water Regulations 2014 and associated environmental legislation, member states have an obligation to protect public water supply sources and zones of contribution from contamination and degradation.

An Coimisiún Pleanála must take into account whether approving this development would be consistent with these statutory obligations. Approving a large-scale industrial development within and immediately adjacent to the zone of contribution to a public water supply serving 8,000 connected premises representing 20,000 to 25,000 people, where explicit risk assessment relating to that supply has been omitted from the EIA, would appear to be fundamentally inconsistent with these statutory obligations.

The applicant has failed in its duty to conduct a full and transparent environmental impact assessment. An Coimisiún Pleanála cannot grant permission in reliance on an incomplete assessment.

### **1.11 Precautionary Principle**

The precautionary principle, enshrined in EU environmental law and adopted in Irish planning practice, states that where serious or irreversible harm is possible, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In this case, serious harm loss of water supply to 20,000 to 25,000 people including nursing homes, doctor's surgeries, schools, and vulnerable customers dependent on water-based medical services is not merely possible but is a documented risk in similar hydrogeological settings elsewhere in the world. The harm would be irreversible in the sense that restoration of the water supply system could take years and cost millions of euros. The cost of preventing harm (requiring robust independent hydrogeological assessment before construction) is minimal compared to the cost of remediation and compensation if harm occurs.

The precautionary principle demands refusal of this application pending comprehensive, independent assessment of risks to the Mid Galway RWSS.

### **1.12 Conclusion on Water Supply Risks**

The proposed Cooloo Wind Farm presents an unacceptable risk to the Mid Galway Regional Water Supply Scheme serving 8,000 connected premises representing a population of 20,000 to 25,000 people, including nursing homes, doctor's surgeries, schools, vulnerable customers dependent on water-based medical services, and residential properties. Turbines T1 and T2 are

located directly within the zone of contribution; turbines T3 and T4 are on the immediate boundary; and the BESS compound is on the boundary. The aquifer is classified as regionally important and capable of supporting a large public supply. Groundwater across significant portions of the site is classified as having extreme vulnerability. Multiple karst features and GSI-traced underground connections demonstrate high susceptibility of the aquifer to contamination and flow modification.

Construction and operational activities present multiple contamination and disturbance pathways. International precedents demonstrate that complete loss or significant impairment of water supply has occurred following similar developments in similar hydrogeological settings, with consequences affecting tens of thousands of people and costs extending to millions of euros.

The applicant's environmental impact assessment is materially deficient in failing to explicitly assess these risks. Until a comprehensive, independent hydrogeological risk assessment is commissioned specifically addressing risks to the Mid Galway RWSS, and demonstrating (not merely assuming) that the development can proceed without unacceptable risk to water supply quality, availability, or the health and safety of dependent populations, An Coimisiún Pleanála must refuse this application.

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## 2. Battery Storage and Substation Safety Risks

I object on the grounds of unacceptable risks to public health, fire safety, water contamination, and protected habitats posed by the proposed substation and Battery Energy Storage System (BESS).

The developer's Appendix 12-3 Battery Storage Noise Assessment (September 2025) identifies fifteen CATL EnerC+ battery containers containing lithium iron phosphate (LiFePO<sub>4</sub>) systems. LiFePO<sub>4</sub> is a type of lithium-ion battery chemistry known for improved thermal stability compared to other lithium-ion designs, yet it remains susceptible to thermal runaway, especially in large-scale installations where individual cell failures can cascade through a container.

Predicted operational noise levels reach up to 31 dB LAeq at nearby homes, representing an increase of +11 to +14 dB above background levels. The report itself classifies this as a "significant adverse impact" on residential amenity. The World Health Organisation's Environmental Noise Guidelines for the European Region (2018) establish that chronic noise above 30 dB raises risks of cardiovascular disease and sleep disturbance.<sup>2</sup>

Large-scale installations of lithium iron phosphate (LiFePO<sub>4</sub>) BESS have experienced fires and thermal runaway events worldwide, releasing toxic gases including hydrogen fluoride, hydrogen cyanide, carbon monoxide, and hydrogen chloride, although LiFePO<sub>4</sub> systems typically produce lower quantities of some species compared to other lithium-ion chemistries.<sup>3</sup> Fire-water runoff from LiFePO<sub>4</sub> battery fires still contains hydrofluoric acid and heavy metals capable of contaminating soil and waterways if not properly contained. The European Parliament Research

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<sup>2</sup> Source: <https://www.who.int/europe/publications/i/item/9789289053563>

<sup>3</sup> Source: [https://alcemi.com/alcemi/uploads/images/project/projectapplicationsubmissionfile/Coalburn\\_II\\_PDAS\\_Appendix\\_B\\_Report\\_on\\_fire\\_risk.pdf](https://alcemi.com/alcemi/uploads/images/project/projectapplicationsubmissionfile/Coalburn_II_PDAS_Appendix_B_Report_on_fire_risk.pdf)

Service notes that a single 1 MW lithium-based battery container can release sufficient toxic and corrosive materials to contaminate multiple hectares if thermal runaway occurs.<sup>4</sup>

The proposed substation and BESS would be located on the boundary of the Mid Galway Regional Water Supply Scheme zone of contribution. Given the extreme vulnerability classification of groundwater at this location and the presence of GSI-mapped traced underground connections, any contamination event involving battery fire runoff would directly harm the aquifer feeding the public water supply serving 20,000 to 25,000 people, including nursing homes, doctor's surgeries, schools, and vulnerable customers.

Studies of recent incidents show that even LiFePO<sub>4</sub> BESS containers can spread thermal runaway when ventilation or battery management systems fail, producing substantial heat and toxic emissions. International best practice notes that LiFePO<sub>4</sub> containers require robust separation, active monitoring, and emergency suppression systems beyond what is typically used for commercial or domestic applications.<sup>5</sup>

Critically, Appendix 12-3 provides no Fire Safety Management Plan. The application offers no evidence that local fire services possess the equipment, training, or protocols to respond effectively to large-scale LiFePO<sub>4</sub> battery fires. EPA and EPRI guidance confirm that fires involving LiFePO<sub>4</sub>, like other lithium-ion chemistries, are self-sustaining, resistant to conventional suppression, and require specialised response capabilities that rural fire brigades typically lack.<sup>6</sup>

In *Grace & Others v. An Bórd Pleanála IESC 10*, the Supreme Court ruled that a residence within one kilometre of a proposed development site had standing to argue against consent. This case emphasises the significance of thoroughly evaluating related infrastructure such as the substation and BESS, which ought to be included in the same consenting procedure as the wind farm itself.<sup>7</sup>

With homes, farmland, livestock, and my own residence within a few hundred metres of the proposed site, this industrial-scale development poses an unacceptable risk to community health, safety, and environmental integrity. Until independent noise, fire-safety, hydrological, and environmental risk audits are completed and verified by competent authorities, I urge An Coimisiún Pleanála to refuse this application in accordance with the precautionary principle.

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### **3. Bird Collision Risk and Inadequate Assessment Methodology**

I object 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

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<sup>4</sup> Source: [https://www.energycouncil.com.au/media/v3gfjdo/12591546-rep-1\\_bess-guidance-report-1-compiled.pdf](https://www.energycouncil.com.au/media/v3gfjdo/12591546-rep-1_bess-guidance-report-1-compiled.pdf)

<sup>5</sup> Source: <https://www.bbc.com/news/articles/czjvdpzw71po>

<sup>6</sup> Source: <https://www.epa.ie/publications/monitoring--assessment/waste/06792-EPA-Lithium-Ion-Battery-Guidance-Proof.pdf>

<sup>7</sup> Source: [https://www.courts.ie/acc/alfresco/16d87548-b0c9-454f-ae1f-93e49833fea4/2017\\_IESC\\_10\\_1.pdf/pdf#view=fitH](https://www.courts.ie/acc/alfresco/16d87548-b0c9-454f-ae1f-93e49833fea4/2017_IESC_10_1.pdf/pdf#view=fitH)

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 feeding areas at low altitudes that overlap turbine rotor heights.<sup>8</sup> The conclusion of "negligible risk" is therefore unsupported and unreliable.

Recent events in Donegal provide stark evidence of the inadequacy of collision risk modelling. Between October 2024 and May 2025, three White-tailed Eagles were killed by wind turbines in County Donegal. Two tagged male eagles were killed by the same turbine at Anarget Windfarm, and a third female was killed at Cornacahan. Post-mortem examinations confirmed broken bones consistent with turbine strikes.<sup>9</sup> BirdWatch Ireland stated that they believed "the collision risk modelling used in the planning permission application was deeply flawed in this case".<sup>10</sup>

White-tailed Eagles, extinct in Ireland since the nineteenth century, have been the subject of a flagship reintroduction programme by the National Parks and Wildlife Service since 2007. I am fortunate to have observed rare birds on my lands at Moyne and to have witnessed the gradual recovery of these iconic species in our landscape. I have invested personal effort in maintaining habitat suitable for these birds. The loss of three reintroduced eagles to turbine strikes in under a year represents a catastrophic failure of predictive modelling and a material threat to the viability of the reintroduction programme.

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 and the presence of reintroduction efforts for protected species.

Mitigation measures are undefined and untested. Key figures such as flightline maps 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 (92/43/EEC), Ireland has a legal obligation to protect migratory and resident bird populations. Recent An Coimisiún Pleanála refusals, including the 2024 Cork wind farm rejection to protect Whooper Swan habitat, demonstrate that the Board takes these obligations seriously.<sup>11</sup>

I respectfully request that the planning authority reject or defer this application pending an independent, peer-reviewed reassessment that includes 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 and species reintroduction programmes, and defined, evidence-based mitigation strategies.

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<sup>8</sup> Source: <https://birdwatchireland.ie/birds/whooper-swan/>

<sup>9</sup> Source: <https://gript.ie/wind-turbines-kill-3-white-tailed-eagles-in-donegal/>

<sup>10</sup> Source: <https://twitter.com/birdwatchie/status/1976227384891425054>

<sup>11</sup> Source: <https://planningpermissionireland.ie/blog/2024/07/28/cork-wind-farm-proposal-rejected-to-protect-whooper-swan-habitat/>

#### 4. Corncrake Reintroduction and Habitat Destruction

I object on the grounds of unacceptable risks to corncrake conservation efforts, habitat fragmentation, and breach of Ireland's obligations under the Birds Directive and EU Natura 2000 framework.

The corncrake (*Crex crex*) is an Annex I species listed under the Birds Directive (2009/147/EC), and its conservation is a priority for both EU and Irish policy. In September 2025, the National Parks and Wildlife Service announced that 281 corncrake territories were recorded across Ireland in 2025, a 20 per cent increase on 2024 and the highest number recorded in 25 years.<sup>12</sup> This recovery has been achieved through intensive collaborative effort between NPWS, BirdWatch Ireland, farmers, and private landowners across the country.

The Corncrake LIFE project, funded by the European Union's LIFE programme, explicitly recognises that successful conservation requires close coordination with private landowners who voluntarily undertake habitat management and protection measures outside the formal Special Protection Area network.<sup>13</sup>

At Moyne, I have undertaken 30 years of private investment in habitat creation and management to support corncrake recovery. This includes creation of suitable meadow habitat, protection of nesting and breeding cover, and management of habitat in coordination with recognised corncrake conservation practices. The effort is consistent with national policy objectives and demonstrates the model of private landowner engagement that NPWS identifies as essential to achieving biodiversity targets.

The proposed wind farm, with its nine 180-metre turbines placed directly within the flight vicinity of these habitats, presents an unacceptable threat to corncrakes. These birds are low, skulking fliers that migrate at night and rely on dense grassland and wetland cover. Collisions with turbine rotors would represent direct loss of individuals to a population that remains vulnerable despite recent increases. The psychological disturbance and habitat avoidance effects induced by the presence of large moving industrial structures would further undermine the conservation value of the site.

The applicant's Natura Impact Statement<sup>14</sup> provides only cursory consideration of corncrake and other Annex I bird species not specifically listed as Special Protection Area interest features. This represents a fundamental deficiency in the Appropriate Assessment process. The NIS fails to acknowledge or account for the role of privately managed habitats in delivering national and EU corncrake conservation objectives. It provides no assessment of cumulative impacts on corncrake populations when this site is considered alongside other regional developments, and it provides no mitigation strategy capable of addressing the obvious conflict between large-scale wind turbine deployment and the conservation requirements of a skulking, low-flying migratory species.

This represents a breach of Article 4 of the Habitats Directive, which requires Member States to classify in the protected areas network "the territories most suitable in number and size for the conservation of these species" and a breach of Article 6(2) requiring that member states "shall

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<sup>12</sup> Source: <https://www.gov.ie/en/department-of-housing-local-government-and-heritage/press-releases/minister-osullivan-praises-landowners-with-20-increase-in-corncrake-territories-recoided/>

<sup>13</sup> Source: <https://www.corncrakelife.ie/wp-content/uploads/2022/12/corncrake-booklet-nov-2022-v4.pdf>

<sup>14</sup> Source: <https://www.cooloowfplanning.com/natura-impact-statement-nis-1>

take appropriate steps to avoid, in the Special Protection Areas as well as in the protection zones established around them, the deterioration of habitats and habitats of species as well as disturbance of the species for which the areas have been designated."

I respectfully request that An Coimisiún Pleanála recognise the conservation value of my private habitat and require the applicant to conduct a full, independent assessment of impacts on corncrake and other Annex I bird species, including assessment of cumulative effects when combined with other regional wind developments and species reintroduction programmes.

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## **5. Biodiversity Impact: Habitats and Protected Species**

I object on the grounds of significant and permanent impact on biodiversity, including legally protected habitats and species.

The Environmental Impact Assessment Report (EIAR) acknowledges a residual adverse effect on Degraded Raised Bog (habitat 7120), a habitat of County Importance with capacity for natural regeneration. Construction of the proposed floating access road between turbines T7 and T9 will directly remove approximately 0.18 hectares of this sensitive peatland and disrupt its hydrological balance. This is contrary to the conservation obligations set out under the EU Habitats Directive (92/43/EEC).

The site supports cutover bogs and Marsh Fritillary (*Euphydryas aurinia*), an Annex II species protected under European law. Breeding webs were recorded near turbine T5 within metres of proposed construction works. The disturbance, dust, and drainage changes associated with turbine and road construction threaten the species' survival locally, directly conflicting with Ireland's duty to maintain favourable conservation status for Annex II species.

The EIAR highlights potential effects on hydrology and connected wetland systems that could degrade otter (*Lutra lutra*) habitat and aquatic fauna. Otters are also protected under Annex II of the Habitats Directive, and any degradation of their habitat represents a breach of Ireland's legal obligations.

These outcomes are inconsistent with the objectives of the National Biodiversity Action Plan 2023 to 2030, which seeks to prevent net biodiversity loss. Allowing this development to proceed would contradict national policy commitments and international conservation obligations.

Given the acknowledged residual adverse effects on protected habitats and species, I respectfully request that An Coimisiún Pleanála refuse permission for this development. The permanent loss and degradation of biodiversity cannot be justified, particularly where protected species and habitats are involved.

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## **6. Biodiversity Impact: Bats and Inadequate Acoustic Monitoring**

I object on the grounds that the assessment of bat mortality risk is inadequate and fails to meet current scientific standards for acoustic monitoring and mitigation.

Wind turbines are well-documented sources of bat mortality through collision and barotrauma. Recent peer-reviewed research by Behr et al. (2023, *Mammal Review*, 53: 65 to 71) confirms that

bat fatalities can be reliably estimated only where standardised, referenced acoustic monitoring protocols are applied.<sup>15</sup>

The Cooloo Wind Farm EIA does not demonstrate compliance with these standards. There is no evidence of standardised, referenced acoustic monitoring at nacelle level. Ground-level acoustic surveys and short-term transects are insufficient and cannot predict turbine-specific collision risk. The proposed tall, large-rotor turbines (180-metre tip height, 162-metre rotor diameter) increase collision risk and monitoring uncertainty.

There is no commitment to validated curtailment systems (such as ProBat) which have been shown to substantially reduce bat mortality. The absence of site-specific validation and continuous monitoring means bat fatalities may be severely underestimated.

Under the EU Habitats Directive (Articles 12 and 16) and the Wildlife Acts 1976 to 2018, all Irish bat species are strictly protected. Developers and planning authorities have a legal duty to ensure projects do not result in deliberate killing or disturbance of bats or deterioration of their breeding or resting sites.

I respectfully request that An Coimisiún Pleanála require standardised, referenced acoustic monitoring following international best practice, nacelle-mounted calibrated detectors to monitor bat activity continuously throughout operation, validated curtailment systems to automatically shut down turbines during high bat activity, independent review and public reporting of all monitoring protocols and data, and precautionary curtailment during high-risk seasons until adequate local reference data are available.

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## **7. Biodiversity Impact: Soil Ecosystems and Vibrational Noise**

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 Velilla et al. (2021, *Oikos*, 130(7), 1033 to 1047) demonstrates that wind turbines generate continuous low-frequency vibrations (less than 500 Hz) that travel considerable distances through soil.<sup>16</sup> Key findings include:

Vibrational noise decreased by only 23 plus or minus 7 dB over 200 metres, meaning measurable vibration extends well beyond turbine bases. Earthworm abundance declined by approximately 40 per cent 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 per cent 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), and deterioration of soil structure and microbial balance (impacting crop performance and long-term land viability).

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<sup>15</sup> Source: <https://doi.org/10.1111/mam.12302>

<sup>16</sup> Source: <https://doi.org/10.1111/oik.08166>

These impacts are especially concerning in productive agricultural soils. The Cooloo site shares characteristics with the farmland studied by Velilla et al. 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 to 250 metres from turbine bases to high-value agricultural soils, vibration-dampening measures in turbine design and foundations, and soil biodiversity indicators in post-construction monitoring.

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## **8. Impact on Neurodiverse Community Members and Educational Facilities**

I object on the grounds of serious harm to neurodiverse individuals, including those with autism, ADHD, and sensory processing disorders.

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.<sup>17</sup> 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 would be particularly affected:

Cooloo National School is 1.59 km from the nearest wind turbine. Brierfield National School is 1.35 km from the nearest wind turbine and has a special class for children with autism. Barnaderry National School is approximately 2.49 km from the nearest turbine.

Senior planning inspectors with An Coimisiún Pleanála have previously noted that facilities for children with additional educational needs may become unviable near large-scale wind farms due to such disturbances. In the Inspector's report for ABP-PA0038 (2015), concerns were raised about impacts on a school for children with special needs in proximity to a proposed wind farm. In the assisting report to Senior Inspector for PA0041 (2016), impacts on neurodiverse individuals were acknowledged as material considerations.<sup>18</sup>

Shadow flicker poses further risks. Studies by Becchio et al. (2010) show that individuals on the autistic spectrum may fixate on spinning movements, heightening distress (Perception of Shadows in Children with Autism Spectrum Disorders, Consciousness and Cognition). 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.

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<sup>17</sup> Source: <http://www.windvigilance.com/about-adverse-health-effects/adverse-health-effects-from-wind-turbines-the-evidence>

<sup>18</sup> Source: <https://www.abp.ie>

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. The absence of evidence is not evidence of absence, and the precautionary principle must apply.

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## 9. Shadow Flicker Impacts and Outdated Guidelines

I object on the grounds that the shadow flicker provisions in the Wind Energy Development Guidelines (2006) are outdated and insufficient for assessing the impacts of modern wind farms, particularly given the extraordinary scale of the proposed turbines.

The proposed turbines represent a dramatic escalation in size compared to those contemplated in 2006. Tip height is 180 metres, rotor diameter 162 metres, hub height 105 metres, and swept area over 20,000 square metres 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, and 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. The U.S. Department of Energy's WINDEXchange notes that even limited flicker can create persistent discomfort, especially during sensitive times of day.<sup>19</sup> A 2013 report commissioned by the Scottish Government (University of Salford) found that shadow flicker may contribute to sleep disturbance and reduced sleep quality. The ClimateXChange report noted symptoms such as dizziness and nausea linked to visual stimuli like flicker.<sup>20</sup>

Complex interactions between blade movement, sun angle, and window geometry may approach frequencies sensitive for photosensitive epilepsy. Recent documentation of community complaints concerning anxiety, reduced concentration, and general decline in wellbeing link these symptoms to shadow flicker exposure.<sup>21</sup>

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 500 metres of turbines.

International best practice offers far more robust protections. Germany mandates curtailment if flicker exceeds 30 minutes per day. Scotland recommends site-specific modelling. The Netherlands requires flicker-free zones around homes. The 2006 Guidelines offer minimal direction on how shadow flicker should be assessed, modelled, or mitigated. There is no validated modelling standard, no requirement to assess cumulative impacts, no mandated mitigation strategies, and no requirement for automated curtailment systems.

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<sup>19</sup> Source: <https://windexchange.energy.gov/>

<sup>20</sup> Source: <https://www.climatexchange.org.uk/>

<sup>21</sup> Source: <https://fritzenergy.com/wind-turbines-and-shadow-flicker/>

I respectfully urge the planning authority to apply a precautionary approach given the outdated standards, require robust modelling accounting for cumulative impacts, mandate effective mitigation measures including automated curtailment, and consider updated health research and vulnerable populations.

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## **10. Road Disruption During Construction**

I object on the grounds of significant traffic and road safety impacts during construction, particularly in relation to abnormal load deliveries.

The Traffic Management Plan (Appendix 15-2) lacks essential detail, including the number, timing and routing of heavy goods and turbine loads, and commitments to off-peak scheduling. Without clear and enforceable mitigation, there is a risk of damage to narrow rural roads, verges and drainage, along with conflicts between construction vehicles, farm traffic and school transport.

No robust plan has been presented for road strengthening, maintenance or reinstatement. The absence of detailed community-specific measures leaves local access, amenity and safety inadequately protected. Having roads closed for a combined 210 days (at a minimum) is unacceptable. It is also unacceptable for locals to have diversions of up to 13.7 km per journey for the duration of this project.

During construction, children travelling to Cooloo, Brierfield, and Barnaderg National Schools will face increased traffic, road closures, noise, and dust. Emergency response times will be compromised, and normal agricultural operations (including my own farming activities) will be disrupted.

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## **11. Property Value Impact and Outdated Studies**

I object on the grounds that the applicant's evidence regarding property value impacts is outdated, methodologically limited, and does not reflect the scale of modern wind turbines or local Irish conditions.

The applicant cites several studies to support the claim that wind turbines do not negatively affect house prices. However, many of these studies have significant limitations. LBNL (2009) and (2013) studies are over a decade old, not reflective of current turbine scale or density, and subject to potential institutional bias and selection bias (homes withdrawn from the market are not captured).

More recent evidence paints a different picture. A 2023 study by Patrick McHale at the University of Galway found a statistically significant negative impact on house prices within 2 km of turbines in western Irish counties.<sup>22</sup> An Energy Policy (2023) study found that homes within 1 mile lose approximately 11 per cent value upon project announcement, though this study had an urban bias (72 per cent of sample from urban counties).

Michael S. McCann, a real estate appraiser, documents value declines of 25 to 40 per cent within 2 miles, unmarketable homes especially within the turbine "footprint", and noise and sleep

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<sup>22</sup> Source: <https://www.universityofgalway.ie/media/researchsites/ceris/files/WP-2023-01.pdf>

disturbance common within 1 to 2 miles. He describes turbine approval as "inverse condemnation" and estimates significant lost value near wind projects.

As the owner of Moyne House, an historic nineteenth-century property on more than 100 acres, I am profoundly concerned about the devaluation and unmarketability of my family home. This property has been carefully maintained and represents not merely a financial asset but a family legacy. The presence of nine 180-metre industrial wind turbines in close proximity would fundamentally alter the character, amenity, and market appeal of this property.

Given the scale and visibility of the proposed development, I respectfully urge the planning authority to consider the potential negative impact on property values based on current, local research, commission an independent valuation impact assessment specific to this locality, and require the applicant to address the methodological limitations of the studies cited.

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## **12. Constitutional Right to Own and Transfer Property**

I object on the grounds that this development violates constitutional property rights guaranteed under Bunreacht na hÉireann.

Article 43.1.2 of Bunreacht na hÉireann provides that "the State accordingly guarantees to pass no law attempting to abolish the right of private ownership or the general right to transfer, bequeath, and inherit property." Granting permission for this wind farm development would effectively undermine this constitutional protection.

Landowners and farmers within the affected area would face significant restrictions, as land situated near turbines would become unsuitable for residential development. This would prevent families from transferring land for the purpose of building homes for future generations, thereby eroding their practical rights of ownership and inheritance.

Furthermore, Article 43.2.1 acknowledges that the exercise of property rights must be regulated by the principles of social justice. However, this proposed development cannot be regarded as socially just. It disproportionately burdens local residents while providing little to no direct benefit to the community.

Those of us living in the area would experience substantial and lasting impacts, including increased traffic and road closures during construction, ongoing noise pollution, shadow flicker, and significant visual intrusion on our landscape. There remains insufficient scientific evidence to conclusively demonstrate that large-scale wind farms pose no long-term health risks to nearby residents. In these circumstances, permitting this development would be neither fair nor consistent with the principles of social justice recognised under Article 43.

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## **13. Right to Peaceful Enjoyment of Property and Interference with Lawful Private Use**

I object on the grounds that this development violates the right to peaceful enjoyment of property under the European Convention on Human Rights, and would directly interfere with lawful, long-established private aviation infrastructure and operations on my property. The proposed wind farm site boundary is approximately 1.5km from my farm boundary. The nearest turbine is 3.7 kilometres northeast of Moyne House (bearing 52.95°), positioned at 203 metres above the elevation of Moyne House (see Figure 4).

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."

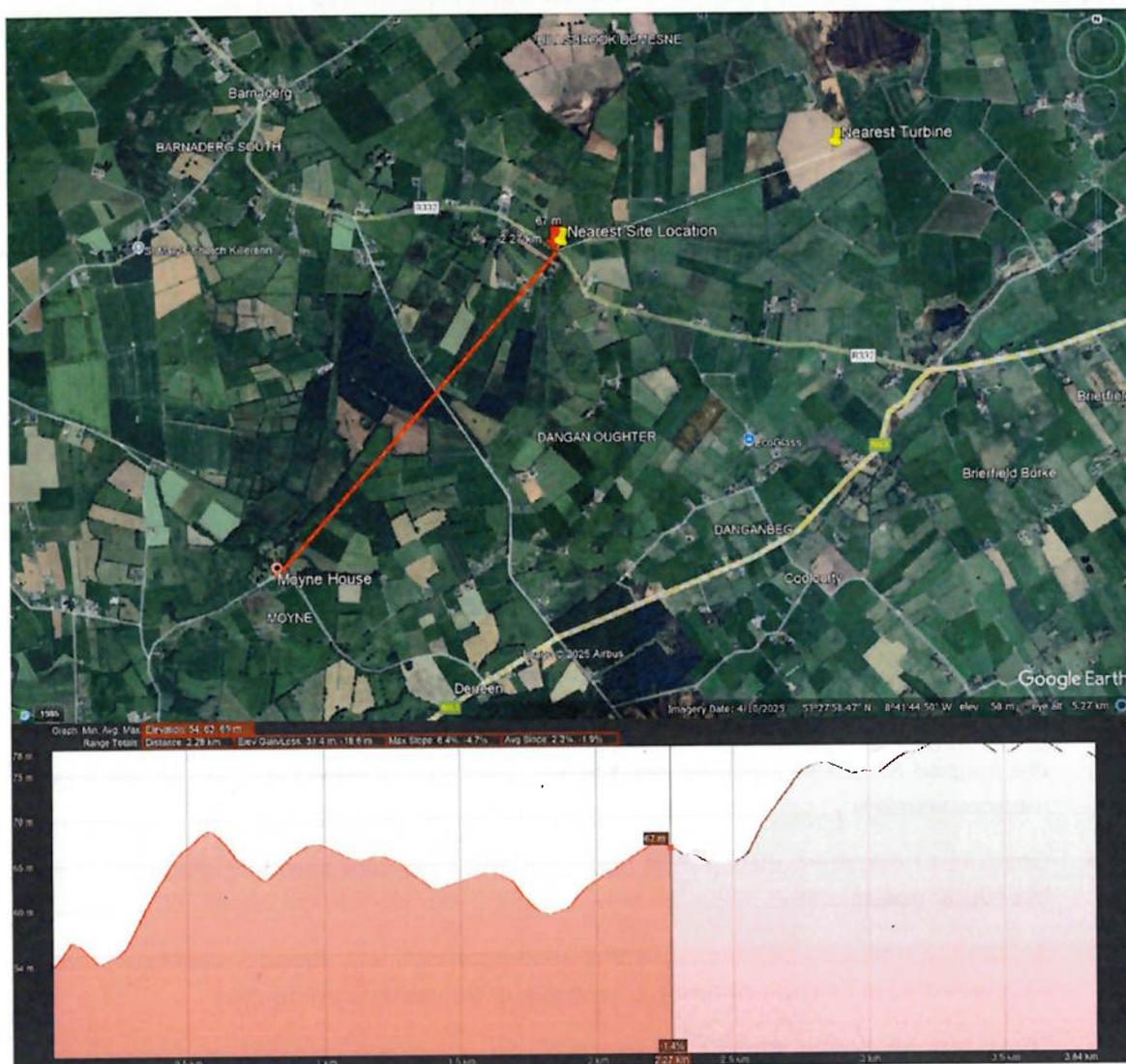


Figure 4. Plan and Elevation Profile showing proposed development c.2.27 km northeast of Moyne House (bearing 52.95°), with nearest turbine at 203m above the elevation of Moyne House © Google Maps

Approval of this proposed wind farm would constitute a clear interference with this right on multiple grounds.

### 13.1 Residential Use and Amenity

If the development proceeds, I will be deprived of the peaceful enjoyment of my home and property at Moyne House. The construction and operation phases would bring significant and continuous disturbance, including persistent noise pollution, low-frequency noise, shadow flicker, and heavy vehicle movements. The tranquillity and visual amenity of my surroundings, which form an intrinsic part of my home environment and wellbeing, 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.

### **13.2 Interference with Lawful Aviation Operations and Helipad Use**

More significantly, I have operated a helipad and hangar facility at Moyne Park continuously for approximately 25 years. This helipad represents a lawful, established private use of my property, predating this wind farm proposal by a quarter of a century.

The proposed wind farm site boundary is located approximately 1.5 kilometres northeast of my farm boundary and 2.27 kilometres northeast of Moyne House (bearing 52.95°). The nearest proposed turbine location is positioned 3.7 kilometres northeast of Moyne House at an elevation of 77 metres according to Ordnance Survey mapping. Moyne House itself sits at an elevation of 54 metres. The elevation difference between Moyne House and the nearest turbine site is therefore approximately 23 metres, which combined with the 180-metre turbine height results in turbine tip heights of approximately 203 metres above the elevation of Moyne House.

At a horizontal distance of 3.7 km and vertical height of 203 m above Moyne House, the proposed turbine is positioned such that it may intersect the standard approach and departure corridors for prevailing-wind helicopter operations serving the Moyne Park helipad. While the distance is greater than initially assessed, the geometric relationship (particularly the bearing of 52.95° and the significant vertical elevation) places the turbine directly in line with or above optimal approach paths for helicopters utilizing prevailing-wind (northeast) approaches to the helipad.

The turbines would:

- Create a potential navigation hazard for helicopter operations approaching or departing the helipad on prevailing-wind approaches, particularly during instrument flight or in reduced visibility
- Obstruct or constrain the optimal approach and departure corridors required for safe helicopter operations
- Render the helipad's primary prevailing-wind approach operationally degraded, forcing helicopters to utilise non-optimal, crosswind, or downwind approaches
- Force any helicopter operations to occur via non-prevailing-wind approaches only, creating operational inefficiency, increased fuel consumption, reduced safety margins, and material degradation of the operational profile of helicopter operations

The proposed development would therefore directly and materially interfere with my lawful, long-established use of private aviation infrastructure on my own property. This constitutes a material deprivation of use and enjoyment of a specific, defined property right that has existed for 25 years prior to the wind farm proposal.

### **13.3 Hierarchy of Rights and Proportionality**

Under ECHR jurisprudence, interference with established property rights can be justified only where:

1. The interference is "in accordance with law" (i.e., authorised by legal procedure)
2. The interference pursues a legitimate aim (e.g., renewable energy, climate action)
3. The interference is "necessary in a democratic society" (i.e., proportionate to the aim, not excessive)

While renewable energy is a legitimate aim, the complete closure of lawful private aviation operations on my own property is not proportionate to that aim, especially where:

- The helipad has operated lawfully for 25 years
- Alternative wind farm sites not conflicting with existing private infrastructure may be available
- No consultation or mitigation regarding aviation safety has been undertaken by the applicant
- The applicant appears unaware of or indifferent to the existence and use of the helipad
- The applicant has conducted no aviation impact assessment despite the proximity and geometric relationship between the turbines and the helipad approach corridor

This level of intrusion into lawful private use 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.

#### **13.4 Aviation Safety Obligations, Regulatory Framework, and Procedural Deficiency**

Ireland has statutory obligations under international aviation law (ICAO Annexes, Irish Aviation Authority standards, S.I. 215 of 2005 Irish Aviation Authority Obstacles to Aircraft In Flight Order) to protect helicopter operations and ensure clear approach paths to landing sites. Wind farms that obstruct or compromise helicopter operations may violate these obligations and create potential liability for the state.

The Irish Aviation Authority has formally submitted its response to An Bord Pleanála on the Cooloo Wind Farm (dated 7 October 2025), acknowledging the aviation significance of the project and requiring specific conditions including aeronautical obstacle warning lighting scheme, as-constructed coordinates in WGS-84 format with ground and blade tip elevations, and notification protocols. The IAA's formal submission to the planning process is itself an acknowledgment that aviation safety is a material consideration requiring regulatory oversight.

However, despite the IAA's engagement, the applicant's Environmental Impact Assessment makes no mention of:

- Aviation safety assessment or consultation with aviation authorities regarding the helipad
- Consultation with the owner of Moyne Park helipad regarding the geometric relationship between turbine locations and helipad approach corridors (bearing 52.95°, 3.7 km distance, 23m elevation differential)
- Assessment of impacts on prevailing-wind approach operations
- Mitigation of risks to helicopter operations via established approach paths
- Impact on private aviation infrastructure predating the wind farm proposal by 25 years

This represents a material and inexcusable deficiency in the EIA process, particularly given:

- The helipad's 25-year operational history and visibility on Ordnance Survey maps
- The precise geometric relationship between the turbine locations and the helipad approach corridor (bearing 52.95°, 3.7 km distance, 203m above Moyne House elevation)
- The direct aviation hazard created by 180-metre structures at this bearing and elevation relative to helicopter approach corridors
- The formal engagement of the Irish Aviation Authority on this project

An Coimisiún Pleanála must require the applicant to conduct a full aviation impact assessment including consultation with the helipad operator, assessment of prevailing-wind approach corridor impact, specific analysis of bearing 52.95° approach geometry, and coordination with the Irish Aviation Authority before permission can be granted.

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#### **14. Climate Action Plan as Primary Framing vs. Comprehensive Legal Compliance**

I object on the grounds that the apparent framing of An Coimisiún Pleanála's decision-making process, which positions the Climate Action and Low Carbon Development Act as the primary decision-making framework, may be systematically subordinating proper environmental assessment and statutory protection obligations to renewable energy targets.

In the recent decision on Harmony Solar Galway Limited (ABP-320662-24), An Coimisiún Pleanála opened its Section 13 "Reasons and Considerations" by stating:

"The Coimisiún reached its decision in accordance with its duties under Section 151 of the Climate Action and Low Carbon Development Act, 2015, as amended, and the requirement to, in so far as practicable, perform its functions in a manner consistent with, inter alia, the Climate Action Plan 2025 and the furtherance of the national climate objective."

While the Board went on to conduct a comprehensive assessment against all relevant frameworks and concluded that the development complied with European, national, and regional renewable energy policies and was in accordance with proper planning and sustainable development, the framing places climate considerations at the opening position, suggesting they are the primary decision-making lens through which other considerations are then filtered.

This framing creates a risk that:

1. Climate targets become the primary test, with environmental, water, and biodiversity protections recalibrated as secondary considerations to be addressed through mitigation rather than as absolute protections.
2. The "in so far as practicable" qualifier in Section 151 risks being interpreted permissively, meaning that where climate targets are in tension with environmental protection, the former can proceed provided some mitigation is offered.
3. Proper Environmental Impact Assessment becomes a process of optimisation within climate constraints, rather than a full examination of whether a development should proceed at all.

For the Cooloo Wind Farm, this framing is particularly concerning because:

- The applicant has submitted an Environmental Impact Assessment that is materially deficient in failing to assess risks to the Mid Galway Regional Water Supply Scheme serving 20,000–25,000 people.
- The development would produce documented, unmitigated risks to public water supply in karst terrain, yet may be approved if the Board prioritises climate targets and interprets Section 151 permissively.
- Archaeological, biodiversity, and traffic safety concerns raised by the Planning Authority have not been fully resolved by the applicant's further information.

While climate action is vitally important, the legal hierarchy must be:

1. Statutory obligations under EU directives (Water, Habitats, Birds, EIA) are non-negotiable baseline protections
2. Climate targets are a mandatory consideration that must be pursued consistently with these baseline protections
3. Where climate targets conflict with water supply safety, public health, or proper environmental assessment, the baseline protections take precedence, not because climate is unimportant, but because the law requires it

An Bord Pleanála must ensure that its application of Section 151 does not systematically reweight environmental and public health protections downward in service of renewable energy targets.

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## 15. Grid Reliability and Renewable Energy System Risks

I object on the grounds that the proposed development contributes to a wider pattern of renewable energy policy that threatens grid stability and security of supply.

Kathryn Porter is an independent energy consultant; she holds a Master's degree in Physics and an MBA, and is an associate member of the UK's All-Party Parliamentary Group for Energy Studies executive council. Ms. Porter has openly documented critical vulnerabilities in electricity systems that become over-reliant on intermittent renewables at the expense of conventional synchronous generation. Her analysis of the catastrophic blackout in Spain and Portugal on 28 April 2025 provides a stark warning for Ireland.

The Iberian blackout, which left the entire peninsula without power for ten hours and resulted in eleven fatalities, was directly caused by renewable energy system failures. A faulty solar inverter triggered voltage oscillations. Widespread non-compliance with grid codes by both inverter-based generators (solar, wind, batteries) and conventional generators exacerbated the crisis. Solar and wind generators tripped offline at frequencies still within supposed normal operating parameters, accelerating frequency collapse. The system operator failed to schedule sufficient conventional generation to provide necessary inertia and reactive power.

Porter explains that conventional power stations with heavy spinning turbines provide essential "inertia" that resists sudden changes in grid frequency, acting as a buffer against supply-demand imbalances. Renewables, operating on direct current converted to alternating current via electronics, lack this inertia and are more sensitive to frequency changes, potentially contributing to system instability.

Significantly, France, with its nuclear-dominant generation mix providing high grid inertia, successfully isolated the fault to a small region and restored power quickly. This demonstrates the critical importance of synchronous generation for grid resilience.

Porter warns that similar risks face Britain's (and by extension Ireland's) electricity system, including inadequate demand forecasting not updated in decades, aging infrastructure from the 1970s nearing end-of-life, over-reliance on imports from European neighbours facing their own energy shortages, and system operators prioritising net zero messaging over system security.

Ireland's pursuit of 80 per cent renewable electricity by 2030 creates analogous vulnerabilities. Each additional wind farm displaces synchronous generation capacity or prevents its replacement, progressively eroding system inertia and increasing the probability of cascading blackout events. The consequences of such an event in an Irish winter, with homes dependent on electric heating and vulnerable populations relying on medical equipment, would be catastrophic.

I am not opposed to renewable energy development in principle. However, I am opposed to renewable energy policy that prioritises ideological targets over engineering realities and public safety. The Cooloo Wind Farm application should be assessed not merely on its individual merits but on its contribution to systemic risk within Ireland's electricity grid.

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## **16. Climate Impact and Land Use Emissions**

As a landowner, I am deeply concerned that the Cooloo Wind Farm will lead to further peat drainage and the felling of productive forest land. This will increase national land-use emissions and make it harder for Ireland's agriculture and forestry sectors to stay within their climate ceilings.

Under the Climate Action and Low Carbon Development Act 2021, every sector must remain within its own emission limits. Projects that raise land use, land-use change, and forestry (LULUCF) emissions add to future pressure on rural landowners, who may face restrictions such as mandatory rewetting or livestock reductions to make up the shortfall.

This proposal benefits energy targets but harms the land sector and undermines fair burden-sharing under national climate law. The removal of 0.18 hectares of Degraded Raised Bog with capacity for natural regeneration, plus associated peatland disturbance and forest felling, represents a permanent loss of carbon sink capacity and an immediate emissions pulse.

Ireland's climate obligations require a holistic approach that considers cross-sectoral impacts. Approving developments that generate land-use emissions to facilitate renewable energy generation is counterproductive and inequitable, particularly when the affected landowners and rural communities bear the cost while accruing minimal benefit.

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## **17. Conclusion**

For all of the reasons set out in this submission, it is clear that the proposed Cooloo Wind Farm would cause more harm than benefit to this area and fails to meet the statutory and legal requirements for planning consent.

The development threatens the safety and quality of water supply (both mains and private spring well) for my household and for 8,000 connected premises representing 20,000 to 25,000 people across the Mid Galway Regional Water Supply Scheme. Turbines T1 and T2 are located directly within the zone of contribution; turbines T3 and T4 are on the immediate boundary; and the BESS compound is on the boundary. The aquifer is karstified, regionally important, and capable of supporting a large public supply. Groundwater is classified as having extreme vulnerability. Multiple karst features and GSI-traced underground connections demonstrate high risk to contamination and flow modification. The applicant's environmental impact assessment is materially deficient in failing to explicitly assess risks to the public water supply serving 20,000 to 25,000 people including nursing homes, doctor's surgeries, schools, and vulnerable customers. International precedents demonstrate catastrophic water supply loss has occurred in similar circumstances.

The development directly interferes with my lawful, 25-year-old helipad and aviation operations at Moyne Park. The nearest proposed turbine, positioned at 3.7 km distance (bearing 52.95°) and 203 metres above the elevation of Moyne House, sit directly within the approach corridor for prevailing-wind helicopter operations. This interference has been flagged as material by the Irish Aviation Authority, yet the applicant has conducted no aviation impact assessment and has made no attempt to consult with me regarding mitigation. The applicant's failure to address this aviation safety concern represents a further material EIA deficiency.

The development presents unquantified and unmitigated fire, explosion, and toxic contamination risks from lithium iron phosphate (LiFePO<sub>4</sub>) battery storage, with fire-water runoff positioned on the zone of contribution boundary adjacent to extreme-vulnerability groundwater.

It relies on demonstrably flawed collision risk modelling that has already failed to protect reintroduced White-tailed Eagles in Ireland. It would destroy 30 years of my private conservation investment in corncrake habitat creation and management, contrary to explicit national and EU policy supporting such conservation efforts. It acknowledges residual adverse effects on protected habitats and Annex II species. It fails to meet current scientific standards for bat monitoring and mitigation. It ignores emerging evidence of soil ecosystem degradation from vibrational noise. It threatens the educational environment and wellbeing of neurodiverse children in local schools. It applies outdated shadow flicker standards that do not account for modern turbine scale. It would cause severe disruption during construction with inadequate traffic management. It threatens property values and marketability based on recent Irish research. It violates constitutional and Convention rights to property and peaceful enjoyment. It contributes to systemic grid stability risks documented in recent European blackout events. And it increases land-use emissions while displacing future burdens onto rural landowners.

More fundamentally, the application appears to have been assessed within a decision-making framework that positions climate targets as the primary consideration, with environmental and public health protections treated as secondary concerns to be mitigated rather than as absolute protections. While climate action is important, it cannot legally override statutory obligations to protect water supplies, public health, biodiversity, and environmental assessment requirements. The legal hierarchy requires that EU statutory protections (Water Directive, Habitats Directive, Birds Directive, EIA Directive) are baseline protections, with climate targets as a mandatory consideration pursued consistently with these baselines, not overriding them.

An Bord Pleanála must refuse this application on multiple grounds:

- Water supply risk: Unacceptable risk to public water supply serving 20,000–25,000 people, with material deficiencies in EIA assessment and mitigation
- Aviation safety: Direct interference with lawful, 25-year-established helipad operations; material aviation hazard flagged by Irish Aviation Authority; no aviation impact assessment conducted
- Biodiversity: Acknowledged residual adverse effects on protected habitats and Annex II species; inadequate assessment of bird and bat mortality; failure to assess soil ecosystem impacts
- Inadequate EIA: Material omissions in environmental impact assessment; failure to consult with known stakeholders (helipad operator, water supply operator); deficient assessment of cumulative impacts
- Procedural defects: Subordination of environmental and public health protections to climate targets; failure to apply legal hierarchy of statutory obligations
- Neurodiverse protection: Unmitigated impacts on vulnerable populations including children with autism in nearby schools
- Legal compliance: Breach of Drinking Water Directive, Water Framework Directive, Habitats Directive, Birds Directive, EIA Directive, precautionary principle, constitutional protections, and ECHR Article 1 Protocol 1

There is something profound about seeing swans and eagles displaced or killed, about watching landscapes shaped by generations transformed into industrial wastelands, about seeing conservation efforts painstakingly built over decades destroyed for ideological targets divorced from engineering reality. About losing the ability to operate a helipad I have maintained for 25 years. About watching the water supply serving 20,000 people placed at unacceptable risk. Our rural communities, our farms, our lands, and our private property rights should not be sacrificed on the altar of policy targets that can be achieved through better demand management, grid balancing, genuine technological solutions, and respect for existing lawful uses.

This community values its peace, safety, and way of life. I value my home, my family's health and water security, the corncrakes returning to call at dusk, the swans in flight, the eagles we fought to bring back, and the helipad I have invested in for a quarter-century. The proposed wind farm threatens all of these.

I am not opposed to renewable energy in principle. I am opposed to renewable energy development that is poorly sited, inadequately assessed, procedurally deficient, legally indefensible, and blind to cumulative environmental, social, technical, aviation, and agricultural impacts. The precautionary principle requires that where serious or irreversible harm is possible, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In this case, serious harm is not merely possible but highly probable. The harm to water quality, biodiversity, human health, aviation safety, neurodiverse individuals, property rights, grid stability, climate targets, and community cohesion is foreseeable, documented in peer-reviewed literature and recent case law, and inadequately mitigated by the application as submitted.

I respectfully urge An Coimisiún Pleanála to refuse permission for this development in the interest of protecting our environment, our homes, our conservation efforts, our water supply, our community, the rule of law, and proper planning and sustainable development, not to mention safe aviation operations.

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**Declaration:**

I declare that the information contained in this observation is true and accurate to the best of my knowledge and belief.

**Signature:**



**Name:** Delia M. Ganley

Moyne Park

Abbeyknockmoy

Tuam

Co. Galway

H54 Y925

**Date:** 15 November 2025