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To: [SIDS](#)
Subject: ABP-320705-24 - Knockshanvo Wind Farm - Aidan and Elaine O'Brien Submission
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Dear Sir/Madam,

Please find attached my submission in response to the Further Information submitted in respect of the proposed Knockshanvo Wind Farm, Case Reference ABP-320705-24.

I would be grateful if you could confirm receipt of this submission.

Kind regards,

Aidan O'Brien

The Secretary
An Coimisiún Pleanála
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Gortnaglough
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29th July 2026

RESPONSE TO FURTHER INFORMATION

Dear Sir/Madam,

Re: Knockshanvo Windfarm

Windfarm: ABP-320705-24

Grid Connection: ABP-320727-24

Applicant: FuturEnergy Knockshanvo Designated Activity Company

Submitted by:

Aidan & Elaine O'Brien

Gortnaglough

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1 Introduction

I am submitting this response to An Coimisiún Pleanála in relation to the Further Information submitted by FuturEnergy Knockshanvo DAC for the proposed Knockshanvo Wind Farm.

I previously made an observation on this application in October 2024. I am a resident of Gortnaglough, Broadford, Co. Clare and have lived in the area for approximately twenty years. My family has a long-standing connection with Broadford, extending back several generations. I live with my wife and three children, and our home is located approximately 1 kilometre from the nearest proposed Knockshanvo turbine and approximately 800 metres from the nearest proposed Oatfield turbine.

I also farm land locally with my brother. That experience, together with living in the area, has given me direct knowledge of the local ground conditions, springs, drainage patterns, forestry, wildlife and seasonal flooding. My concerns about the proposed development are therefore not based solely on general opposition to wind energy development. They arise from the particular location of my home and land, the environmental conditions I have observed over many years, and the potential consequences for my family if the assessments made by the Applicant prove to be incorrect.

My original observation raised a number of specific concerns, including:

- noise and the cumulative effect of Knockshanvo and other nearby wind farms;
- low-frequency noise and infrasound;
- protection of my family's private drinking-water supply;
- unmapped wells, springs and local hydrological conditions;
- flooding and runoff observed close to the proposed development;
- shadow flicker;
- impacts on bats, including two registered bat roosts at my home;
- Hen Harrier, Kestrel and other wildlife observed around my home and farm;
- cumulative environmental effects;
- residential amenity and future use of my land; and
- the adequacy of the Applicant's engagement with the local community.

I do not intend to repeat that original observation in full. This response should be read together with it.

The purpose of this submission is to consider whether the Further Information now submitted by the Applicant actually resolves the concerns I previously raised.

In doing so, I have considered both:

1. the matters which the Applicant has expressly responded to; and
2. the site-specific information contained in my original observation which, in my view, has still not been properly investigated or answered.

That distinction is important.

The Applicant has responded to many of the broad subject areas raised by observers, including noise, hydrology, ecology, shadow flicker and cumulative effects. However, my original observation did not consist only of general concerns under those headings. It contained specific evidence concerning my own property and the immediate locality.

For example, I informed the planning authority that:

- my family and my brother's family rely upon an old shallow private well serving approximately ten people;
- that well was not identified in the Applicant's original mapping;
- I supplied laboratory test results demonstrating a previous serious deterioration in the quality of that water supply;
- I identified eight springs on land I farm locally which were not shown in the Applicant's assessment;
- I provided photographs of significant local flooding and runoff;
- I identified two bat roosts at my home and garage which have been registered with Bat Conservation Ireland since 2015; and
- I provided photographic and first-hand evidence of protected bird species using the area around my home and farm.

Having reviewed the Further Information, one of my principal concerns is that much of this evidence appears to have been dealt with only through general responses to broad environmental topics.

In several important instances, I cannot identify evidence that the Applicant has subsequently investigated the particular receptor or environmental feature that I specifically brought to its attention.

For example, I cannot identify evidence that my shallow well was subsequently surveyed, sampled or incorporated into a site-specific hydrogeological assessment following my original observation. Similarly, I cannot identify a substantive response to the two registered bat roosts at my property or to the eight unmapped springs I identified on the land I farm.

This is important because a general conclusion that private wells, bats or local hydrology will not be significantly affected does not necessarily answer evidence concerning a **known and identifiable receptor which was absent from the original assessment.**

My concern is therefore not simply that I disagree with the conclusions reached by the Applicant. In a number of areas, I remain concerned that the environmental baseline itself does not adequately reflect conditions which I specifically identified during the public participation process.

I also remain particularly concerned about cumulative effects.

Knockshanvo would not operate in isolation. The proposed Oatfield Wind Farm is located immediately adjacent to the area and, if both projects proceed, there would be a total of approximately 20 large turbines within the same wider upland landscape. Other existing, permitted and proposed wind energy developments are also located throughout the surrounding East Clare area.

For my family, these developments cannot realistically be experienced as separate planning applications.

The relevant issue is the combined effect upon:

- our home;
- our drinking water;
- the acoustic environment;
- wildlife;
- landscape and visual amenity;
- shadow flicker;
- local roads and construction activity; and
- the wider character of the place in which we live.

The Further Information contains a number of cumulative assessments, and I acknowledge that the Applicant has not ignored cumulative effects entirely. However, the question remains whether those assessments adequately reflect the real combined environmental conditions which may arise around my home if multiple wind farms proceed.

I have tried in this response to distinguish between matters that have been reasonably clarified and matters which remain unresolved.

Where the Applicant relies upon general modelling, future monitoring, mitigation or assumptions that do not address the particular evidence I previously supplied, I consider it important that those matters are brought clearly to the Commission's attention.

My home is not an abstract noise-sensitive receptor or a point on an environmental model. It is where my family lives. Our drinking-water supply, the wildlife around our property, the springs and drainage systems on the land we farm and the acoustic and visual environment around our home are existing features of our daily lives.

If the assumptions contained in the environmental assessment prove incorrect after the development is constructed, the consequences will be experienced by my family and other residents rather than by the models used to predict those effects.

For the reasons set out in the sections that follow, I remain of the view that the Further Information has not adequately resolved a number of the concerns raised in my original observation and, in several important cases, has not substantively addressed the site-specific evidence I submitted.

I therefore ask An Coimisiún Pleanála to consider this response together with my original observation and the wider planning record before determining the application.

2 Executive Summary

I previously made an observation on the proposed Knockshanvo Wind Farm in October 2024. I am a resident of Gortnaglough, Broadford, Co. Clare, where I live with my wife and three children, and I also farm land locally with my brother.

My home is located approximately **1 km from the proposed Knockshanvo development and approximately 800 metres from the proposed Oatfield development**. If both developments proceed, my family would live within the same wider upland landscape as approximately **20 large wind turbines**.

I have reviewed the Further Information submitted by FuturEnergy in the context of the concerns and evidence contained in my original observation.

I acknowledge that the Further Information is extensive and that the Applicant has provided additional technical assessments, explanations and proposed mitigation. Some of the matters I previously raised have been clarified.

However, a number of important concerns remain unresolved.

A central issue in this response is the distinction between the Applicant answering a **general category of concern** and actually investigating the **specific site evidence supplied in my original observation**.

My original observation identified a number of existing environmental receptors and local conditions which appeared to be absent from the Applicant's original assessment. These included:

- an old shallow private well supplying drinking water to my family and my brother's family, approximately ten people in total;
- laboratory evidence showing that this water supply has previously experienced serious microbiological contamination;
- eight springs on approximately 18 acres of land which I farm with my brother;
- photographic evidence of significant local flooding, runoff and discoloured water;
- two bat roosts at my home and garage which have been registered with Bat Conservation Ireland since 2015;
- observations and photographs of protected birds and other wildlife using the area around my home and farm; and
- evidence concerning my attempts to obtain greater community engagement from the Applicant.

These were not simply general expressions of concern. They were specific matters capable of being checked or investigated.

Having reviewed the Further Information, I cannot identify evidence that several of them were subsequently investigated.

Private Drinking-Water Supply

My greatest concern remains the protection of my family's private drinking-water supply.

The well is an old shallow/open well rather than a modern deep borehole and supplies approximately ten people across two family homes. In my original observation I provided laboratory results demonstrating that the supply has previously experienced serious microbiological contamination.

The Applicant has provided a general hydrogeological assessment of private wells and concludes that significant effects are unlikely.

However, I cannot identify evidence that my actual well has been inspected, accurately mapped, characterised, baseline sampled or assessed to establish its source or recharge characteristics.

In my view, a general conclusion regarding private wells does not adequately resolve the position of a **known shallow drinking-water source which was specifically identified through the planning process but appears not to have been individually investigated.**

Springs, Flooding and Hydrology

I also identified eight springs on land which I farm locally. These did not appear in the Applicant's original mapping.

The Further Information contains substantial additional hydrological information, but I cannot identify evidence that these springs were subsequently surveyed or incorporated into the assessment.

This is relevant because the Applicant's own hydrogeological model recognises the importance of springs, seeps and shallow groundwater discharge within the area.

I also supplied photographs demonstrating actual flooding, runoff and visibly discoloured water during significant rainfall.

I remain concerned that these observations have not been used to test whether the Applicant's mapped hydrological baseline and proposed drainage arrangements fully represent conditions on the ground.

Two Registered Bat Roosts at My Home

My original observation identified two known bat roosts at my property which have been registered with Bat Conservation Ireland since 2015.

I regularly observe substantial numbers of bats emerging from these buildings during summer evenings.

The Applicant has undertaken extensive bat surveys and proposes mitigation including buffers, curtailment and post-construction monitoring.

However, I cannot identify evidence that my two registered roosts were subsequently verified, surveyed for species or assessed to determine whether bats from these roosts forage or commute towards or through the proposed development area.

I would have facilitated reasonable access for such an investigation. I received no request to do so.

The existence of these roosts does not establish that the development will have a significant effect upon them. However, I consider that their relevance should have been professionally investigated once they were specifically identified.

Birds and Other Wildlife

I also provided local observations and photographs concerning protected birds using the wider area, including Hen Harrier and Kestrel.

The Applicant has undertaken an extensive ornithological survey programme, which I acknowledge.

However, concerns remain regarding cumulative displacement, collision risk, limitations in vantage-point visibility and the assessment of crepuscular and nocturnal species such as Snipe and Woodcock.

These issues become particularly important when Knockshanvo is considered cumulatively with Oatfield and the potential introduction of approximately 20 turbines into the same wider upland landscape.

Noise

The Applicant predicts that Knockshanvo can comply with the relevant operational noise limits, including cumulatively with other wind farms.

I acknowledge that technical assessment.

However, my concern extends beyond predicted numerical compliance.

My family could potentially receive wind-turbine noise from both Knockshanvo and Oatfield. If unacceptable noise subsequently occurs, there is a practical question as to how the contribution from each development would be identified and how compliance could effectively be enforced.

I also remain concerned regarding the representativeness of background-noise measurements, amplitude modulation and the mechanism for investigating unusual or intrusive noise characteristics.

For a resident, the important issue is not simply **predicted compliance**, but **enforceable protection if the prediction proves incorrect**.

Shadow Flicker

The Applicant has provided additional shadow-flicker modelling and proposes SCADA-based turbine control.

I acknowledge that this provides a technically credible means of preventing shadow flicker.

My concern is therefore principally that every affected dwelling, including my own, should be correctly identified and that cumulative effects from Knockshanvo and Oatfield should be assessed.

Where turbine control can prevent shadow flicker at an existing dwelling, I consider that the appropriate operational objective should be **zero shadow flicker**, rather than requiring residents to experience the effect and complain before mitigation is implemented.

Cumulative Effects

Cumulative impact remains one of my principal concerns.

Knockshanvo would not exist in isolation.

If Knockshanvo and Oatfield both proceed, approximately 20 large turbines would occupy the same wider upland landscape close to my home.

The Applicant has undertaken cumulative assessments under individual technical headings. However, my family would experience the resulting environment as a whole.

That includes the combined effects of:

- operational noise;
- shadow flicker;
- turbine visibility;
- aviation lighting;
- forestry removal;
- construction activity;
- drainage and ground disturbance; and
- effects upon birds, bats and other wildlife.

The Commission should therefore consider not only whether individual technical thresholds are satisfied, but also the **overall long-term cumulative effect upon existing residential amenity**.

Land, Farming and Residential Amenity

I have lived in this area for approximately twenty years and farm locally.

My concerns are therefore based partly upon my direct knowledge of the land, springs, drainage, wildlife and local conditions.

I also remain concerned about the long-term effect of the proposed development upon the residential setting of my home and the potential additional constraints that large turbines, noise contours and shadow-flicker considerations may impose upon future residential use of family land.

I accept that ownership of land does not create an entitlement to future planning permission. However, this issue is different from the property-value issue addressed by the Applicant and does not appear to have been substantively answered in the Further Information.

Community Consultation

My original observation also documented an email I sent to FuturEnergy requesting that a consultation clinic be held in Bradford.

I recorded at the time that I received no response.

The Applicant now states in the Further Information that **“Every query submitted, whether by phone, text or email, was answered.”**

My documented experience appears inconsistent with that categorical statement.

I do not rely upon this as a standalone reason for refusal. However, it is relevant to the wider issue because effective engagement with local residents could have identified matters such as my private well, springs and registered bat roosts before the planning application was submitted.

Overall Position

The principal issue arising from my review can therefore be summarised simply:

The Further Information frequently answers the general environmental issue, but does not demonstrate that important site-specific evidence supplied in my original observation was subsequently investigated.

This is particularly important in relation to my private drinking-water supply, the eight unmapped springs and the two registered bat roosts at my home.

I do not suggest that my own observations should replace professional environmental assessment.

I am asking for the opposite.

Where a resident supplies credible and verifiable information identifying a potentially relevant feature that was absent from the original environmental baseline, that information should be **professionally investigated and used to test the assessment.**

That does not appear to have occurred in several important instances.

I am also concerned about the extent to which unresolved matters are effectively deferred to pre-construction surveys, post-construction monitoring, complaint procedures or adaptive mitigation.

Those measures have a legitimate role, but they should not replace investigation before consent where the information necessary to carry out that investigation is already available.

Once the turbines, roads, drainage and foundations have been constructed, nearby residents will be in a fundamentally different position if an assumption subsequently proves incorrect.

Request to An Coimisiún Pleanála

Having considered the Further Information, **I remain opposed to the proposed Knockshanvo Wind Farm and respectfully request that An Coimisiún Pleanála refuse permission.**

I do not believe sufficient certainty has been demonstrated regarding the protection of my private drinking-water supply, the completeness of the hydrological and ecological baseline, the cumulative effects of Knockshanvo and Oatfield, and the long-term protection of my family's residential amenity.

If the Commission is not minded to refuse permission on the information currently before it, I ask that the unresolved site-specific matters identified in this submission be properly investigated **before a final decision is made**, rather than being deferred to post-consent monitoring or future agreement.

The issue for the Commission is not whether wind energy is desirable in principle. I recognise the importance of renewable energy.

The issue is whether **this particular development, at this particular location and cumulatively with the other major wind-energy development proposed immediately beside it, has been demonstrated to be environmentally acceptable.**

For the reasons set out in this response and my original observation, I do not believe that it has.

3 Failure to Address Site-Specific Evidence Supplied in My Original Observation

A significant concern arising from my review of the Further Information is the manner in which the Applicant has dealt with the observations made by members of the public.

I appreciate that a large number of observations were received and that it is reasonable for the Applicant to group common issues under headings such as hydrology, noise, biodiversity and shadow flicker. I do not expect the Applicant to reproduce and answer every paragraph of every individual observation separately.

However, that approach becomes problematic where an observation contains **specific evidence identifying environmental receptors or local conditions that were absent from, or potentially inconsistent with, the Applicant's original environmental baseline.**

My October 2024 observation contained a number of such matters. These were not simply expressions of concern. I supplied specific information and, in several instances, supporting photographs, mapping and documentary evidence.

Site-specific information supplied in my observation

Among the matters I brought to the attention of the planning authority were:

- an old shallow/open private well supplying drinking water to my family and my brother's family, approximately ten people in total;
- the fact that this well did not appear to be identified in the Applicant's original well mapping;
- laboratory results from BHP Laboratories showing serious microbiological contamination of this water supply following a previous period when forestry and other activities were occurring in the locality;
- my experience of changes in the quality and condition of this shallow water supply;

- **eight springs on an approximately 18-acre holding which I farm with my brother**, which were not identified on the Applicant's mapping;
- photographs showing significant local flooding, runoff and visibly discoloured water in the Sallybank area;
- two bat roosts at my home and garage which have been registered with Bat Conservation Ireland since 2015;
- my observation of substantial numbers of bats emerging from those roosts during the summer;
- first-hand observations and photographs of protected bird species using the area around my home and farm; and
- evidence concerning my efforts to have the Applicant hold a public information clinic within the affected Broadford community.

These were matters capable of being checked or investigated.

General responses do not necessarily answer specific evidence

The Further Information now contains extensive responses under the general headings of hydrology, private wells, bats, ornithology, noise and community consultation.

I acknowledge those responses.

My concern is that in several instances the Applicant appears to have responded to the **general category of concern without addressing the particular evidence that I supplied.**

For example, the Applicant can conclude generally that private wells are protected by separation distances, drainage design and pollution-control measures. That does not necessarily answer the position of a particular shallow well which was specifically identified to the planning authority but was apparently absent from the original environmental baseline.

Similarly, a general response describing extensive bat surveys does not explain what consideration was subsequently given to **two registered bat roosts approximately 1 km from the proposed development which I specifically identified after finding that they were absent from the original assessment.**

The same issue arises with the eight unmapped springs and my photographic evidence of local runoff and flooding.

Once these matters had been specifically identified through the public participation process, I would have expected the Further Information to demonstrate either that:

1. they had been investigated and incorporated into the assessment; or
2. there was a clear technical reason why they were not relevant to the conclusions reached.

I cannot identify such an analysis for several of these matters.

My private drinking-water supply is a clear example

My private well illustrates the difficulty particularly clearly.

My original observation did not merely state that I was worried about groundwater.

I identified an actual drinking-water supply serving two family homes. I explained that it is an old and shallow supply and that, from my experience, it is sensitive to changes in the surrounding environment.

I also provided actual laboratory evidence demonstrating that this water supply had previously experienced serious microbiological contamination.

Having provided that information, I would have expected the Applicant's response to establish whether the well had subsequently been:

- identified and mapped;
- inspected;
- characterised in terms of its construction and depth;
- assessed in terms of its likely recharge area;
- considered against the proposed drainage and construction works;
- baseline sampled; and
- specifically considered in the cumulative Knockshanvo/Oatfield assessment.

I cannot identify evidence in the Further Information demonstrating that this was done.

Instead, the response concerning private wells remains principally a general technical assessment of groundwater pathways and mitigation.

That does not resolve my concern regarding **my family's actual drinking-water source**.

I deal with this issue in detail in Section 4.

Unmapped springs and observed runoff

The same concern applies to local hydrology.

I specifically informed the planning authority of eight springs on land which I farm and which did not appear on the Applicant's mapping.

I also submitted photographs showing the actual behaviour of water in the locality during wet conditions, including substantial runoff and discoloured water entering local drainage and watercourses.

This information was relevant because one of my concerns with the original assessment was whether the mapped hydrological environment fully represented the much more complex conditions that I observe on the ground.

The Further Information contains substantial hydrological analysis, but I cannot identify where the eight springs I reported were subsequently investigated or where the particular runoff evidence I supplied was examined.

I address this further in Section 5.

Registered bat roosts at my property

A similar issue arises in relation to bats.

I informed the planning authority that there are two bat roosts at my property, one associated with my house and another with my garage, which have been registered with Bat Conservation Ireland since 2015.

I also explained that during the summer I have observed substantial numbers of bats emerging from these roosts.

This was not a general statement that bats occur somewhere in the locality. It identified **specific known roosts at an identifiable property approximately 1 km from the proposed wind farm.**

The Further Information contains extensive discussion of bat surveys and mitigation. However, I cannot identify a substantive response explaining whether these particular registered roosts were subsequently investigated or incorporated into the assessment.

That is difficult to understand where the information was specifically supplied through the statutory planning process.

I address this separately in Section 8.

Public participation should improve the environmental baseline

In my view, this raises a wider issue concerning the purpose of public participation.

Local residents will sometimes possess information that is not captured during consultant surveys. That is particularly likely in a rural upland environment where residents and farmers have observed local conditions over many years.

That does not mean that every local observation must automatically be accepted as scientifically established.

It does mean, however, that **specific, verifiable information capable of affecting the environmental assessment should be investigated rather than simply absorbed into a generic response to a category of objection.**

In my case, the information included physical features such as a well and springs, registered bat roosts, laboratory water results and photographic evidence.

These are capable of objective verification.

Where such information reveals a feature missing from the original baseline, the public participation process should result in that baseline being checked and, where appropriate, corrected.

Otherwise, there is a risk that the assessment simply continues to rely upon the same baseline that gave rise to the concern in the first place.

This is not simply disagreement with the Applicant

I want to distinguish this point from ordinary disagreement between an observer and an Applicant's technical consultants.

There are many areas in which FuturEnergy and I may simply reach different conclusions from the same information. That is ultimately a matter for the Commission to determine.

The issue identified in this section is different.

Where I provided **new site-specific information that was apparently absent from the Applicant's assessment**, the question is whether that information was subsequently

investigated and incorporated into the environmental assessment before the Applicant reaffirmed its conclusions.

In several important instances, I cannot see evidence that this occurred.

Consequences for the Further Information

This matters because the reliability of an environmental assessment depends upon the reliability of its baseline.

Mitigation and modelling can only be as reliable as the understanding of the receiving environment upon which they are based.

If a private drinking-water supply, springs, bat roosts or relevant local drainage features are missing from that baseline, a general conclusion of no significant effect does not necessarily resolve the omission.

For that reason, throughout this response I ask the Commission to distinguish between:

a response to the general environmental issue

and

a response to the specific site evidence actually supplied.

In my view, the Further Information addresses many of the former but does not adequately address several important examples of the latter.

The sections that follow examine those matters individually and explain why I consider the outstanding gaps material to the Commission's assessment of the proposed development.

4 My Private Shallow Well and Drinking Water

Of all the issues raised in my original observation, the protection of my family's drinking-water supply remains one of my greatest concerns.

This is not a theoretical concern about the possibility that an unidentified well might exist somewhere near the proposed development. I identified my actual drinking-water supply, explained its unusual and vulnerable nature, identified its approximate location and provided laboratory evidence demonstrating that the quality of the supply has previously been seriously affected.

Having reviewed the Further Information, I do not consider that the Applicant has adequately addressed that site-specific evidence.

My family's water supply

My home does not have a public mains water supply. Our drinking water comes from a private shallow/open well which also supplies my brother's adjoining family home.

There are five people living in each house, meaning that approximately **ten people depend upon this one water source**.

As explained in my original observation, this is not a modern drilled borehole. It is an old open shallow well which has probably been in use for approximately **150 years or more**, having originally served the older dwelling on the property. It is located close to McCullagh's Holy Well.

The nature of the well is important.

A shallow open well can respond differently to surrounding hydrological conditions than a deep bedrock borehole. From living at this property for approximately twenty years, I know from direct experience that the condition of our water supply can change.

I identified three circumstances in particular in my original observation:

- periods of drought;

- forestry works on lands behind our home; and
- slurry spreading on surrounding agricultural lands.

I provided this information because I wanted the Applicant and the planning authority to understand that this is a **known vulnerable drinking-water receptor**, rather than simply another dwelling assumed to have no hydrological connection with the wind farm site.

The well was not identified by the Applicant

The original EIAR's assessment of groundwater resources was substantially based upon Geological Survey Ireland well data.

Chapter 9 records that the Applicant searched the GSI well database and identified certain mapped boreholes in the surrounding area. It also acknowledges that many of the wells in the surrounding lands have poor locational accuracy, in some instances of **1 km or greater**.

My well does not appear on those databases or maps.

That is not surprising. It is an old private shallow well associated with a dwelling dating from the late nineteenth century.

The absence of my well from a national database does not mean that it does not exist.

Indeed, my original observation put the Applicant expressly on notice that the well exists, supplies two homes and had not been identified in the original assessment.

This should have removed any uncertainty about its existence.

The Environmental Health Service specifically required identification of private drinking-water sources

This issue becomes more significant when considered against the advice of the Environmental Health Service.

As recorded elsewhere in the planning documentation, the Environmental Health Service stated that:

“All drinking water sources, both surface and ground water, must be identified.”

It specifically recommended a walkover survey, in addition to desktop analysis of GSI information, to identify private wells used for potable supply.

That recommendation appears particularly relevant to my circumstances.

My well is a clear example of why reliance upon database information alone cannot necessarily identify private rural drinking-water sources.

I therefore expected that, once I specifically identified the well in my observation, it would be incorporated into the Applicant's assessment.

I cannot identify evidence in the Further Information that this occurred.

My laboratory evidence was not hypothetical

My original observation also included laboratory evidence concerning the vulnerability of this water supply.

In May 2021, during a period when forestry was being felled in Knockshanvo forest and slurry had also been spread on agricultural land approximately 2.1 km from our well, the condition of our water deteriorated severely.

The smell from the water became particularly noticeable when the water was boiled.

We engaged BHP Laboratories to test the supply.

The results included:

- **Total Coliforms: >2,420 MPN/100 ml**
- **E. coli: 2,420 MPN/100 ml**
- **Enterococci: 68 MPN/100 ml**

I also supplied correspondence from BHP explaining that the “>” result meant the number of coliforms exceeded the upper level measurable by that particular test.

I am not suggesting that this historical contamination was caused by a wind farm. It plainly occurred before Knockshanvo was constructed.

Nor can I state scientifically whether the forestry operations, slurry spreading or a combination of circumstances caused that particular event.

The relevance of the incident is different.

It demonstrates from actual laboratory evidence that **our drinking-water source is capable of experiencing serious deterioration in water quality when conditions in the surrounding environment change.**

That is why I considered it important to bring the evidence to the Applicant's and the planning authority's attention.

The Further Information does not address my well specifically

The Applicant, through Hydro-Environmental Services (“HES”), has now provided a further response concerning private wells and drinking-water supplies.

I acknowledge that this response contains technical reasoning and should not be dismissed.

The Applicant relies upon a source-pathway-receptor assessment and maintains that significant effects upon private wells are unlikely because, among other matters:

- the underlying aquifer has low permeability;
- groundwater flow paths are generally short;
- groundwater tends to emerge through springs and baseflow to streams;
- dwellings and potential groundwater receptors are separated from development infrastructure; and
- construction-phase controls will prevent pollution from fuels, oils and other contaminants.

The Applicant refers to groundwater flow paths as typically being short, with approximately **300 m identified as a maximum distance** in its assessment.

I understand the reasoning being put forward.

My concern is that this remains a **general assessment of private wells rather than an assessment of the particular drinking-water supply I identified.**

I cannot identify evidence in the Further Information that, following receipt of my original observation, the Applicant:

- visited our well;
- confirmed its exact location;
- examined its construction;
- established its depth;
- established whether it is spring-fed, shallow-groundwater-fed or receives water through another pathway;

- identified its recharge area;
- sampled its existing water quality;
- assessed its seasonal yield;
- considered the historical BHP laboratory results;
- assessed its relationship with the eight springs I identified on nearby land; or
- carried out a specific source-pathway-receptor assessment between the proposed works and this particular drinking-water supply.

That is the fundamental issue which remains unresolved.

A 300 m groundwater assumption does not itself characterise my well

The Applicant places considerable weight upon its conclusion that groundwater flow paths within the low-permeability aquifer are generally short.

I am not qualified to dispute the hydrogeological properties of the underlying bedrock.

However, my concern is that my water supply has never, as far as I can determine, been established to be a conventional deep bedrock groundwater abstraction.

It is an **old shallow/open well**.

The Applicant's own assessment also recognises that groundwater within the area frequently emerges as springs and baseflow to streams.

That is relevant because I have separately identified eight springs on land I farm locally.

Before a general assumption regarding bedrock groundwater-flow distance is relied upon to exclude an effect upon my drinking-water supply, I believe the actual nature of that supply should first be established.

If the well is influenced by shallow groundwater, springs, surface/subsurface runoff or other local pathways, then its vulnerability cannot necessarily be determined solely from the regional productivity or permeability classification of the underlying aquifer.

Water quantity matters as well as contamination

My concern is also not limited to contamination.

A household water supply can be adversely affected either because its **quality deteriorates** or because its **yield is reduced**.

Construction of a wind farm of this scale involves substantial ground works, including access roads, turbine foundations, drainage, excavation, forestry operations and potentially dewatering.

Such works are specifically designed to manage and redirect water around infrastructure.

Even where sediment, fuel and other contaminants are successfully controlled, changes to shallow drainage or groundwater behaviour could potentially affect the recharge or yield of a shallow well or spring.

This is particularly relevant to me because I have already observed changes in our well during drought conditions.

The Applicant's pollution-control measures are therefore important, but they do not by themselves answer my concern about possible changes in the **quantity or movement of water** supplying our well.

Monitoring after construction is not enough without a baseline

The Applicant relies upon monitoring as part of its water-protection measures.

I support monitoring.

However, in the case of my well, meaningful monitoring requires a reliable baseline.

If water quality or yield deteriorated during construction, there would need to be objective information showing what the condition of the supply was **before construction commenced**.

That is particularly important because our well has already experienced natural and land-use-related variation.

Without proper baseline information, a future dispute could arise about whether a deterioration was caused by the development, weather, forestry, agriculture or some other factor.

This is not an acceptable position for a family dependent upon the supply for drinking water.

The well should therefore be identified and characterised **before any construction activity takes place**, rather than waiting to determine after a problem arises whether the development might have affected it.

Cumulative Knockshanvo and Oatfield effects

My concern also cannot be considered solely in relation to Knockshanvo.

My property lies in the wider Knockshanvo/Oatfield area. If both developments proceed, substantial forestry removal, access-road construction, turbine foundations, drainage works and other ground disturbance could take place within the same wider upland hydrological environment.

The Applicant maintains that cumulative hydrological effects have been assessed and that no significant cumulative effect will arise. The specialist Further Information specifically records cumulative hydrology as part of the assessment.

However, from my perspective, the starting point remains incomplete if my actual drinking-water receptor has not first been characterised.

A cumulative model cannot demonstrate the absence of an effect upon a particular water supply if the nature and hydrological relationship of that supply have not been established.

What I consider should have happened following my original observation

Once I identified this well to the planning authority, I believe the appropriate response was straightforward.

The Applicant could have contacted me and arranged to inspect it.

Its consultants could then have:

1. confirmed and mapped the well;
2. established its construction and approximate depth;
3. investigated its likely source and recharge characteristics;
4. undertaken baseline water-quality testing;
5. established baseline yield or water-level conditions where practicable;
6. assessed its relationship with the proposed Knockshanvo infrastructure and drainage;

7. considered it cumulatively with Oatfield; and
8. identified a clear protection, monitoring and remediation protocol.

I would have facilitated reasonable access for that purpose.

I cannot identify evidence that this occurred.

Instead, the Further Information maintains a general conclusion that private drinking-water supplies will not be significantly affected.

Given the information I had specifically supplied, I do not consider that sufficient.

My request to the Commission

I am not asking the Commission to assume that Knockshanvo **will** contaminate my well.

My point is that the Applicant has not demonstrated, on the basis of an investigation of my actual water supply, that it **will not adversely affect it**.

There is an important difference.

My family and my brother's family depend upon this well every day. There is no comparable consequence to the Applicant if its assumptions regarding our water supply subsequently prove incorrect.

I therefore ask the Commission to give particular weight to the fact that a **known private drinking-water source serving approximately ten people was specifically identified through the public participation process but does not appear to have been individually investigated in the Further Information**.

At a minimum, I consider that the Commission should require the exact location and hydrogeological characteristics of this supply to be established, together with an adequate pre-construction baseline for both **water quality and quantity** and clear, enforceable arrangements for investigation, alternative supply and remediation should any deterioration occur.

More fundamentally, however, I consider that this information should form part of the environmental assessment **before a decision is made**, particularly where the Applicant's conclusion of negligible risk depends upon assumptions concerning separation distance and groundwater pathways.

For those reasons, the Further Information has **not resolved the concern regarding my family's private drinking-water supply**.

5 Unmapped Springs, Local Flooding and Hydrology

My concerns regarding hydrology are closely related to the private drinking-water issues addressed in Section 4, but they extend beyond my well.

In my original observation I provided evidence based upon my direct experience of farming and living in this area. In particular, I identified **eight springs on an approximately 18-acre holding which I farm with my brother** that did not appear to be identified in the Applicant's assessment. I also provided photographs showing significant local runoff, flooding and discoloured water in the Sallybank area during wet conditions.

I provided this information because it raised a straightforward question: **does the hydrological baseline used by the Applicant fully reflect how water actually moves through this upland landscape?**

Having reviewed the Further Information, I do not consider that question has been adequately resolved.

Eight springs identified in my original observation

The land which I farm locally contains eight springs.

These are physical features which I know from working the land. They are not hypothetical groundwater pathways inferred from mapping or modelling.

Their significance is not that I claim each individual spring will necessarily be affected by the proposed wind farm. The significance is that their apparent absence from the Applicant's baseline raises a wider question about the completeness of the mapped hydrological environment.

The Applicant's assessments contain detailed information concerning mapped watercourses, groundwater bodies, aquifer characteristics, drainage, peat and surface-water catchments. I acknowledge the extent of that work.

However, an assessment can be technically detailed while still failing to identify local hydrological features.

Once I specifically identified these eight springs through the planning process, I would have expected the Further Information to demonstrate that their existence had been checked and their relevance assessed.

I cannot identify evidence that this occurred.

The springs are relevant to the Applicant's own hydrogeological model

This is particularly relevant because the Applicant's hydrogeological assessment itself recognises that groundwater flow in the area is generally shallow and that groundwater can discharge locally through **springs, seeps and baseflow to streams**.

The presence of springs is therefore not peripheral to the Applicant's understanding of the site. Springs are part of the mechanism by which groundwater moves through and emerges from this landscape.

If additional springs exist which were not identified in the baseline, the question is whether they indicate shallow groundwater pathways or local drainage relationships which have not been fully represented.

I am not suggesting that the existence of eight unmapped springs automatically invalidates the Applicant's hydrological assessment.

I am saying that once their existence was specifically brought to the Applicant's attention, **they should have been investigated before the original hydrological conclusions were simply reaffirmed**.

My concern is based on observed conditions, not modelling alone

One of the difficulties I have with the hydrological assessment is the difference between what can appear on a map and what residents and farmers observe during actual weather conditions.

Water movement in this area varies considerably depending upon rainfall and antecedent conditions.

During prolonged wet weather, water can emerge in locations which may appear relatively dry at other times. Small drains, springs and flow paths can become significant, while water can move rapidly downhill towards roads, drains and streams.

These conditions are familiar to people farming and living in the area.

This is why I included photographs with my original observation rather than simply stating that flooding occurs.

Sallybank flooding and runoff – 5 March 2024

My original observation included photographs taken in the **Sallybank area on 5 March 2024**.

The photographs showed substantial water flowing across and alongside the local road following heavy rainfall. They also showed visibly discoloured/turbid water entering local drainage and a nearby stream.

I included these photographs because they demonstrate the behaviour of water in the locality under actual wet-weather conditions.

The issue is not whether this particular flooding event was unusual or whether the proposed wind farm caused it—it plainly did not.

The relevance is that the photographs demonstrate the capacity for **substantial volumes of runoff, carrying visible sediment, to move through the local environment during periods of heavy rainfall**.

That is important when considering a development involving:

- forestry felling;
- new and upgraded access roads;
- turbine foundations;
- hardstand areas;
- peat and soil excavation;
- drainage infrastructure;
- cable trenches;
- temporary construction compounds; and
- other extensive ground disturbance.

The hydrological assessment must therefore be robust not merely under ordinary conditions but during the types of significant rainfall events that actually occur in this upland environment.

The Further Information does not appear to investigate this evidence

The Further Information contains substantial additional explanation from the Applicant's hydrology consultants.

It describes the proposed drainage system, settlement ponds, check dams, buffered outfalls, sediment controls, watercourse protection and other mitigation measures. It also maintains that the hydrological baseline and proposed mitigation are sufficient to prevent significant effects.

I acknowledge that these measures are relevant and that sediment and drainage control form an important part of modern wind-farm construction.

My concern is more fundamental.

I cannot identify where the Further Information specifically considers:

- the eight springs I identified;
- whether they were subsequently located or surveyed;
- whether they indicate previously unidentified shallow groundwater pathways;
- the particular flooding/runoff locations shown in my photographs;
- whether the flow routes shown in those photographs correspond with the drainage model used for the development; or
- whether the Applicant's proposed drainage infrastructure has been tested against the actual conditions demonstrated by that evidence.

Again, the response appears to address the **general hydrological issue** without substantively addressing the **site-specific evidence supplied by a local observer**.

Forestry is particularly relevant

Forestry is an important part of this issue.

The Knockshanvo area contains extensive commercial forestry, and development of the wind farm would involve forestry removal and associated ground works.

From my own experience, forestry operations can materially change local drainage conditions.

This is also relevant to the experience with my private well described in Section 4. I have previously observed deterioration in our water supply during a period when forestry operations were taking place in the wider area.

I am not claiming that forestry operations were scientifically established as the sole cause of that contamination event.

However, it demonstrates why I am concerned about substantial forestry removal and ground disturbance taking place within an upland hydrological environment containing shallow wells, springs and local watercourses.

The combined effects of tree removal, machinery, exposed ground, altered drainage and heavy rainfall require careful consideration.

Proposed drainage is itself an alteration to existing water movement

The Applicant relies heavily upon the proposed drainage system as mitigation.

I understand why.

However, drainage does not simply prevent an impact; it also **collects, controls, redirects and discharges water**.

The effectiveness of that system therefore depends upon an accurate understanding of:

- where water originates;
- how it moves through the site;
- the location of existing drains and watercourses;
- shallow groundwater and spring pathways;
- the volumes generated during significant rainfall; and
- where controlled discharges ultimately travel.

If important local springs or flow paths are absent from the baseline, that potentially matters to the design and assessment of the drainage system itself.

The existence of mitigation therefore does not remove the need for a complete baseline.

Extreme rainfall and the consequences of failure

I am also concerned that the assessment should not depend solely upon average conditions.

The photographs supplied with my original observation demonstrate what can happen during periods of significant rainfall.

Climate conditions are also changing, and intense rainfall events are a foreseeable part of the lifetime of a development of this nature.

The important question for residents downstream is not merely whether settlement ponds and drains operate correctly under normal circumstances. It is whether the system has sufficient capacity and resilience during the periods when runoff and sediment mobilisation are greatest.

A drainage or sediment-control measure can perform adequately for the majority of the year but still cause a serious environmental problem if it is overwhelmed during an extreme rainfall event.

For a shallow drinking-water supply such as mine, even a relatively short pollution event could be significant.

Hydrological effects extend beyond the planning boundary

Water does not recognise the boundary of the wind-farm site.

Runoff leaving a turbine area or access road enters existing drainage networks, streams and ultimately wider catchments.

Similarly, changes in shallow groundwater or spring behaviour can manifest some distance from the physical works.

That is why I believe the Commission should be cautious about relying solely upon separation distances between particular infrastructure and mapped receptors.

The relevant question is whether a **hydrological pathway** exists.

My local evidence of springs, runoff and flooding is directly relevant to that question.

Cumulative Knockshanvo and Oatfield effects

The cumulative situation is particularly important.

Knockshanvo is not the only major wind-energy development proposed within this upland area. Oatfield would introduce additional turbines, roads, drainage, forestry removal and construction activity within the same wider landscape.

If both developments proceed, the relevant question is not simply whether each individual project can control the runoff generated within its own red-line boundary.

The question is what happens to the **combined catchment** when both sets of works are undertaken.

The Applicant states that cumulative hydrological effects have been assessed and concludes that no significant cumulative effect will occur.

I acknowledge that a cumulative assessment has therefore been undertaken.

However, I remain concerned about the reliability of that conclusion where local hydrological features identified by residents do not appear to have been incorporated into the baseline.

If eight springs on one relatively small local holding are absent from the mapped assessment, it is reasonable to ask whether other unmapped springs, seeps and local drainage pathways may also exist across the wider Knockshanvo/Oatfield area.

This is particularly relevant when considering a combined landscape containing **20 proposed turbines**, extensive access infrastructure and associated drainage.

Relationship with my private well

The eight springs and local runoff evidence should not be considered separately from my drinking-water supply.

As explained in Section 3, my family relies upon an old shallow/open well.

The Applicant's own hydrogeological understanding recognises local discharge of groundwater through springs and shallow pathways.

I therefore consider that the relationship between:

upland rainfall → shallow groundwater/springs → surface drainage/watercourses → my shallow well and other local receptors

requires a more site-specific assessment than I can identify in the Further Information.

Without establishing how my well is supplied and how the local springs relate to the surrounding hydrological system, I do not believe that a general conclusion concerning short groundwater flow paths adequately resolves the issue.

Local knowledge should have been used to test the assessment

I do not suggest that my observations should replace professional hydrological assessment.

The opposite is what I am asking for.

My local evidence should have been used to **test and improve the professional assessment**.

If a farmer tells the Applicant that eight springs exist which are absent from its maps, the appropriate response is to investigate them.

If a resident provides photographs showing substantial runoff and sediment movement at a particular location, the appropriate response is to compare those observations with the predicted drainage pathways.

The outcome might confirm the Applicant's existing model.

Alternatively, it might identify a feature requiring modification of that model.

Either outcome would improve the evidence available to the Commission.

What concerns me is that I cannot identify evidence that this verification exercise occurred.

My request to the Commission

I am not asking the Commission to conclude from my photographs or observations alone that the proposed wind farm will cause flooding, contaminate watercourses or alter my drinking-water supply.

I am asking the Commission to recognise that the information I supplied identified **potential gaps in the hydrological baseline which were capable of being objectively investigated.**

In particular, I ask the Commission to consider:

- why the eight springs identified in my original observation do not appear to have been subsequently surveyed or incorporated into the assessment;
- whether those springs indicate additional shallow groundwater or drainage pathways;
- whether the actual runoff conditions shown in my March 2024 photographs are adequately represented in the Applicant's drainage and sediment-control assessment;
- whether the proposed drainage system has been demonstrated to remain effective during significant rainfall events;
- whether cumulative Knockshanvo/Oatfield ground disturbance has been adequately assessed across the wider catchment; and
- how these matters relate to the protection of my shallow private drinking-water supply.

The Applicant has provided a detailed hydrological assessment and substantial proposed mitigation. I acknowledge that.

However, **detail is not the same as completeness.**

Where site-specific information supplied through the planning process identifies physical hydrological features absent from the baseline, I consider those features should be investigated before the Commission relies upon conclusions derived from that baseline.

For that reason, the Further Information has **not resolved my concerns regarding unmapped springs, local runoff, flooding and the completeness of the hydrological assessment.**

6 Noise and Protection of My Home

Noise remains one of my principal concerns regarding the proposed Knockshanvo Wind Farm.

My concern is not simply whether the Applicant's computer modelling predicts compliance with a particular numerical noise limit. I live approximately 1 km from the proposed Knockshanvo development and approximately 800 metres from the proposed Oatfield development. If both projects proceed, my family will live within the acoustic environment created by both wind farms.

In my original observation I raised concerns regarding operational wind turbine noise, cumulative noise, low-frequency noise and infrasound, potential effects upon sleep and residential amenity, and the practical difficulty residents may face if unacceptable noise occurs after the turbines have been constructed.

The Further Information contains a substantial response from the Applicant and its acoustic consultants, AWN Consulting. I acknowledge that additional explanation and analysis has been provided.

However, having considered that response, my fundamental concern remains: **the predictions are necessarily made before the turbines exist, while the consequences if those predictions prove incorrect will be experienced at my home after the development has become operational.**

My concern is about the actual acoustic environment at my home

My home is not simply a point on a noise contour.

It is where my family lives, sleeps and spends much of our time.

The surrounding area is rural and can be extremely quiet, particularly at night. This is important because the introduction of a new continuous or recurring industrial noise

source into a quiet rural environment can represent a substantial change even where a numerical planning limit is predicted to be met.

The Applicant's own background-noise measurements demonstrate that parts of the receiving environment around Knockshanvo have very low existing background noise levels, particularly at lower wind speeds and during night-time periods.

That makes the accuracy of the background assessment, turbine predictions and cumulative modelling particularly important.

Background noise methodology

The Applicant relies upon background noise monitoring undertaken at a limited number of representative locations and applies the resulting background curves across the wider population of Noise Sensitive Locations.

I understand that it would neither be practical nor normally required to install a noise monitor at every dwelling.

My concern is therefore not simply that my home did not have its own monitor.

The issue is whether the monitoring location used to represent my home and other dwellings in this part of the study area genuinely reflects the acoustic conditions we experience.

Background noise can be influenced by:

- proximity to roads;
- local traffic;
- vegetation and wind-generated foliage noise;
- elevation and exposure;
- agricultural activity;
- nearby streams and water;
- topography; and
- other local sources.

A monitoring location affected by one or more of these sources may have a higher measured background level than a nearby dwelling in a more sheltered or quieter location.

That matters because the background level is then used in determining the applicable wind-turbine noise criterion.

I therefore ask the Commission to be satisfied that the background dataset applied to my home is actually representative of the acoustic environment at my property and has not been elevated by local noise sources that are not similarly present at my dwelling.

The Applicant predicts compliance, but prediction is not the same as experience

The Applicant's case is that operational turbine noise has been modelled using established methodology and that the proposed development can comply with the applicable noise limits.

I acknowledge that noise modelling is a necessary part of assessing a proposed wind farm and that the Applicant has used recognised acoustic methodology.

However, all such modelling necessarily depends upon assumptions.

These include assumptions concerning:

- turbine sound power;
- wind speed and direction;
- propagation;
- ground conditions;
- atmospheric conditions;
- receptor locations;
- background noise;
- turbine operating modes; and
- the contribution from other wind farms.

The fact that a model predicts compliance is therefore important evidence, but it does not mean that the real-world acoustic environment after construction will necessarily correspond precisely with that prediction.

For a resident living close to the development, the arrangements for **what happens if the prediction proves wrong** are therefore extremely important.

Cumulative noise from Knockshanvo and Oatfield

This is perhaps my greatest noise concern.

Knockshanvo cannot realistically be considered in isolation from Oatfield.

If both developments proceed, the same wider upland landscape would contain **20 turbines**, and my family would potentially receive wind-turbine noise from both developments.

The Applicant has undertaken cumulative noise modelling and I acknowledge that Oatfield has not simply been ignored.

However, predicted cumulative compliance does not remove my concern.

From inside my home, there will be no distinction between "Knockshanvo noise" and "Oatfield noise". There will simply be the total wind-turbine noise reaching the property.

The cumulative assessment therefore needs to be sufficiently conservative to ensure that the combined operational environment remains acceptable under the range of meteorological conditions that will actually occur.

This is particularly important where predicted cumulative levels approach the applicable criterion. A relatively small difference between predicted and actual turbine sound levels, propagation conditions or background noise could become material.

Compliance with a numerical limit does not describe every characteristic of turbine noise

The Applicant's assessment is principally expressed using A-weighted noise levels over specified measurement periods.

These measurements are important, but they do not necessarily describe every characteristic that determines whether a sound is noticeable or intrusive.

Wind-turbine noise can vary over time and may contain characteristics which make it more noticeable than a relatively steady sound having the same average measured level.

This is relevant to both **amplitude modulation** and low-frequency components of wind-turbine noise.

I therefore do not believe that the question for the Commission should simply be:

Is the predicted LA90 level below the applicable numerical limit?

It should also consider whether the regulatory and enforcement arrangements are capable of addressing materially intrusive characteristics should they occur in practice.

Amplitude modulation

One issue of particular concern is amplitude modulation ("AM").

AM occurs where aerodynamic turbine noise varies periodically in level, commonly described as a rhythmic "swish" or, in more pronounced cases, a "thump".

Where enhanced amplitude modulation occurs, the resulting sound may be more noticeable or intrusive than a relatively steady sound with the same overall A-weighted level.

I am not suggesting that enhanced AM will necessarily occur at my home.

Nor am I asking the Commission to assume in advance that a particular penalty must be applied to the Applicant's predicted levels.

My concern is more practical.

If materially intrusive amplitude-modulated noise does occur after the turbines become operational, there should be a clear means of:

- investigating the complaint;
- objectively determining whether AM is occurring;
- establishing which development is responsible where more than one wind farm contributes;
- determining whether the noise is unacceptable; and
- requiring effective corrective action.

Compliance with an overall numerical noise level should not mean that a materially intrusive noise characteristic cannot be investigated.

Low-frequency noise and infrasound

My original observation also raised low-frequency noise and infrasound.

The Applicant's acoustic consultants have responded to this issue in considerable detail and rely upon published scientific literature and established wind-energy noise guidance to conclude that separate limits for low-frequency noise or infrasound are not required.

I acknowledge that response.

I also recognise that there is an important distinction between **audible low-frequency noise** and **infrasound**, and that the mere presence of low-frequency acoustic energy does not establish that it will cause an adverse health effect.

My concern is therefore not that the existence of infrasound automatically makes the proposed development unacceptable.

Rather, I remain concerned about whether the regulatory framework provides an adequate mechanism to investigate a genuine complaint involving an unusual low-frequency or tonal characteristic if one arises after construction.

The Applicant's response relies substantially upon predicted compliance and the general scientific literature. That does not entirely answer the practical position of a resident experiencing a specific noise characteristic at a particular property.

HSE and public-health concerns

My original observation referred to concerns raised by the HSE in connection with other wind-energy development and to the relationship between environmental noise, sleep and health.

The Further Information now contains a specific response to HSE observations.

The Applicant maintains that its assessment has been undertaken using the appropriate Irish wind-energy noise methodology and argues that the WHO Environmental Noise Guidelines do not replace the applicable Irish planning framework.

I do not intend to reproduce the technical and policy arguments concerning WHO, ETSU and the Institute of Acoustics in this personal submission. Those matters are extensively addressed elsewhere in the planning documentation.

From my perspective as a resident, the important point is simpler.

Noise capable of disturbing sleep or the reasonable enjoyment of a home is not merely a theoretical environmental parameter. It directly affects residential amenity and potentially wellbeing.

That makes a conservative assessment and an effective enforcement system particularly important where large turbines are proposed close to existing rural homes.

The Webster case remains relevant to my concern

My original observation referred to the High Court proceedings involving wind-turbine noise at Ballyduff, Co. Wexford.

I did not refer to that case to suggest that every wind farm will cause a nuisance or that the circumstances at Knockshanvo will necessarily be identical.

Its relevance to me is that it demonstrates something important: **predicted compliance at planning stage does not remove the possibility that operational wind-turbine noise may subsequently become a serious issue for nearby residents.**

Once turbines have been constructed, the situation is very different from assessing predictions on paper.

Residents cannot move the turbines. The planning authority cannot easily reverse the physical development. Investigation and enforcement may become technically difficult and potentially prolonged.

That is why I believe the Commission should place substantial weight upon prevention and enforceability at the decision-making stage.

The practical enforcement problem

This is one of the issues which I do not consider the Further Information adequately resolves.

The cumulative noise assessment concerns the **combined noise experienced at a receptor**, whereas any planning permission for Knockshanvo would regulate the contribution from Knockshanvo.

If my family subsequently experiences unacceptable wind-turbine noise, a measurement taken at my home may record the total acoustic environment produced by both Knockshanvo and Oatfield.

That measurement will not necessarily establish how much of the noise comes from each development.

This creates a very practical problem.

The Knockshanvo operator could potentially argue that Oatfield is responsible for a significant part of the measured level, while the Oatfield operator could make the opposite argument.

The resident is then left experiencing the combined noise while responsibility for it is disputed.

This issue becomes even more difficult because wind-turbine noise varies with:

- wind speed;
- wind direction;
- turbine operating conditions;
- atmospheric stability; and
- individual turbine output.

To determine the contribution from one development may therefore require measurements or controlled shutdown testing under appropriate and comparable meteorological conditions.

The Applicant's prediction that cumulative levels will comply does not, in itself, explain how this attribution problem would be resolved if a complaint arises.

Enforcement needs to be designed before the turbines are constructed

For that reason, I consider that any noise condition would need to do considerably more than simply state a numerical limit.

There should be a clear and workable procedure covering:

- how a resident makes a complaint;
- how quickly it must be investigated;
- where and how measurements are taken;
- how amplitude modulation or other particular noise characteristics are assessed;
- how the contribution of Knockshanvo is separated from Oatfield or other wind farms;
- whether controlled turbine shutdowns can be required for investigative purposes;
- who pays for independent acoustic testing;
- what happens if an exceedance is identified; and
- what operational restrictions or curtailment can be imposed.

Without such a mechanism, a planning noise limit may appear clear on paper while proving considerably more difficult to enforce in practice.

Reliance upon future monitoring does not remove the present risk

Post-construction monitoring can be useful.

It can establish whether actual operational levels correspond with predictions and can identify unexpected effects.

However, monitoring after construction cannot undo the consequences of an inadequate pre-construction assessment.

If monitoring identifies a problem, the turbines and associated infrastructure will already have been constructed.

For nearby residents, the key issue is therefore not simply whether monitoring will occur but whether there is an **effective remedy** if the monitoring demonstrates that the prediction was wrong.

The Commission should be satisfied about that remedy before permission is granted.

My position is not that the Applicant's noise modelling should simply be disregarded

I want to be clear about the basis of my concern.

I am not qualified as an acoustician and I am not asking the Commission to disregard AWN's technical assessment simply because I disagree with the proposed development.

The Applicant has undertaken detailed noise modelling and has responded to the observations made concerning noise.

That evidence must be considered.

However, the Commission also has to consider the consequences of uncertainty.

There is an important difference between a small modelling error relating to a temporary construction activity and an error relating to the long-term operational noise environment at an existing family home.

Wind turbines may operate for decades.

That makes the margin between predicted noise and the applicable limits, the cumulative contribution from other developments and the enforceability of those limits matters of considerable importance.

My request to the Commission

I ask the Commission to consider the noise assessment from the perspective of the **actual long-term residential environment** that would be created if Knockshanvo and Oatfield both proceed.

In particular, I ask the Commission to satisfy itself that:

- the background-noise data applied to my home are genuinely representative of the existing acoustic environment at the property;
- the cumulative modelling of Knockshanvo and Oatfield is sufficiently conservative;
- adequate allowance has been made for uncertainty in predicted operational noise;
- materially intrusive amplitude modulation can be objectively investigated if it occurs;
- complaints concerning unusual low-frequency or other noise characteristics will not be dismissed solely because an overall A-weighted limit is met;
- there is a technically workable method of distinguishing the Knockshanvo contribution from Oatfield where both developments contribute to measured noise at the same dwelling; and
- clear and enforceable corrective measures are available if the actual operational noise environment differs materially from that predicted.

My concern ultimately comes down to the difference between **predicted compliance and enforceable protection**.

The Applicant predicts that the development can operate within the applicable noise limits. I acknowledge that evidence.

However, if those predictions prove incorrect, it is my family and other nearby residents who will experience the consequences.

For that reason, I do not consider that the Further Information fully resolves my concerns regarding **cumulative operational noise, particular noise characteristics and the practical enforceability of noise protection at my home**.

7 Shadow Flicker at My Dwelling

Shadow flicker was one of the specific residential amenity concerns raised in my original observation. My concern is particularly important because my family home is located close to the proposed Knockshanvo and Oatfield developments and, if both proceed, our residential environment must be considered having regard to the combined effects of both projects.

The Further Information provides a considerably more detailed response to shadow flicker and acknowledges concerns raised by observers regarding omitted receptors, cumulative effects, modelling assumptions and the proposed reliance on SCADA-based turbine control.

I acknowledge those clarifications. However, I remain concerned about whether the assessment accurately establishes the potential effect at individual homes and whether the proposed mitigation provides residents with sufficient certainty that unacceptable shadow flicker will not occur.

My original concern

In my original observation I raised concerns regarding shadow flicker at residential properties and the completeness of the Applicant's assessment.

This is not an insignificant issue for somebody living close to two proposed wind farms.

Shadow flicker is intermittent by its nature. It occurs when the position of the sun, turbine and dwelling align and rotating blades repeatedly interrupt sunlight entering a window.

The Applicant correctly explains that conventional shadow-flicker assessment is concerned principally with the effect experienced indoors through windows.

That makes the accuracy of the assessment at each individual dwelling particularly important.

The Further Information acknowledges concerns about omitted dwellings

The Applicant's Further Information expressly records that observers raised concerns that receptors had been omitted from the shadow-flicker assessment.

It specifically identifies concerns regarding **Dwellings Nos. 419, 422, 492 and 526**, which observers stated had been omitted from the cumulative assessment involving Oatfield.

The Applicant responds that all 78 residential dwellings within ten rotor diameters, assessed as 1.63 km, were included in the modelling. It states that Dwellings 419, 422 and 526 are not predicted to experience Knockshanvo shadow flicker, while Dwelling 492 is predicted to exceed the 30-minute daily threshold under maximum theoretical conditions. The Applicant further states that none of these four dwellings is predicted to experience cumulative shadow flicker.

I acknowledge that this directly responds to the particular four receptors identified in the observations.

However, it also illustrates why the underlying receptor data and cumulative modelling require careful scrutiny. The concern arose because comparisons between the Knockshanvo and Oatfield assessments appeared to produce different results for the same dwellings.

Where two proposed wind farms overlap geographically, residents should not be faced with materially different predictions depending upon which developer's assessment is being examined.

My dwelling should be positively identified in the assessment

My personal concern is straightforward.

The Commission should be able to identify **my actual dwelling** within the shadow-flicker assessment and establish clearly:

- its receptor number;
- its coordinates;
- its distance from the relevant Knockshanvo turbines;
- its distance from the relevant Oatfield turbines;
- which turbines can theoretically cast shadow at the dwelling;
- the predicted maximum daily exposure;

- the predicted annual exposure;
- the cumulative Knockshanvo/Oatfield exposure; and
- the mitigation that would apply if shadow flicker occurs.

I do not believe that a resident should have to infer from hundreds of numbered receptors whether their home has been correctly assessed.

Where I specifically raised concern about my home in my original observation, I would have expected the Further Information to allow that concern to be clearly resolved.

Cumulative shadow flicker is particularly important

The Applicant has undertaken a cumulative assessment involving Oatfield, and I acknowledge that.

The EIAR's cumulative methodology considers other wind farms where their ten-rotor-diameter shadow-flicker study areas overlap with the Knockshanvo study area.

However, from my family's perspective the relevant issue is not which development produces a particular episode of shadow flicker.

If sunlight entering a room in my home is repeatedly interrupted by turbines, the effect is experienced in that room regardless of whether the turbine responsible belongs to Knockshanvo or Oatfield.

The cumulative assessment therefore needs to establish the **total potential exposure at the dwelling**, including circumstances where different turbines from the two developments could produce shadow flicker at different times of the day or year.

This is another example of why Knockshanvo and Oatfield cannot realistically be experienced by residents as separate developments.

The Applicant's modelling contains conservative assumptions

I think it is important to acknowledge that some aspects of the Applicant's modelling are deliberately conservative.

The Applicant uses maximum theoretical modelling which assumes conditions such as sunshine whenever the geometry permits shadow flicker and does not rely upon screening from trees or other vegetation to remove the effect.

The Further Information states that, of the 78 properties modelled, **31 are predicted to exceed 30 minutes per day under maximum theoretical conditions**. When regional sunshine probability is taken into account, four properties are predicted to exceed the annual 30-hour guideline.

These maximum theoretical assumptions reduce the risk of understating exposure merely because cloudy weather or existing vegetation might prevent shadow flicker on a particular occasion.

I therefore do not suggest that every element of the modelling is designed to underestimate shadow flicker.

My concern instead relates to the **accuracy of the receptor-specific inputs, cumulative results and reliance upon mitigation where the modelling predicts an effect**.

Standardised windows versus the actual dwelling

The assessment uses standardised **1 m × 1 m notional windows** facing north, east, south and west rather than measuring every window at every individual property.

I understand the practical reason for using a standardised methodology.

However, actual houses do not necessarily have four identical 1 m × 1 m windows facing exactly in the cardinal directions.

Homes may have:

- larger windows;
- multiple windows in a room;
- patio or glazed doors;
- different orientations; and
- rooms whose actual configuration differs substantially from the notional model.

The Applicant acknowledges that actual window dimensions can affect the duration of shadow flicker and relies upon site verification and mitigation to deal with differences between predicted and actual effects.

That places additional importance upon what happens **after an effect has been identified at a particular home**.

SCADA can control shadow flicker, but that should result in zero flicker at affected homes

The Applicant proposes use of the wind farm's Supervisory Control and Data Acquisition ("SCADA") system as part of its mitigation.

I accept that modern turbine-control systems can identify periods when particular turbines are capable of producing shadow flicker at specified receptors and can shut turbines down during those periods.

That is a technically credible means of controlling the effect.

However, if the technology is capable of preventing shadow flicker at an affected dwelling, I do not understand why residents should be required to tolerate a specified amount of it before mitigation becomes necessary.

The Applicant's own assessment predicts substantial theoretical exposure at a number of properties before mitigation.

In my view, where a dwelling is identified as being capable of experiencing shadow flicker, the appropriate operational objective should be **zero shadow flicker at the dwelling**, achieved through automatic turbine control where necessary.

This is particularly appropriate because shadow flicker is a predictable astronomical phenomenon. The position of the sun, turbine and receptor can be calculated in advance.

It should therefore not be necessary for residents to repeatedly experience the effect and complain before appropriate turbine-control parameters are implemented.

Blinds and screening should not be the primary solution

The Applicant identifies a hierarchy of potential mitigation which can include measures such as blinds or screening vegetation before ultimately relying upon turbine control.

I do not consider that the protection of an existing home should depend primarily upon the resident changing how they use their property.

If a turbine creates unacceptable shadow flicker through an existing window, requiring a family to close blinds or curtains during periods of sunshine transfers the consequence of the development onto the resident.

Similarly, vegetation may not provide reliable year-round screening and can be removed, damaged or altered over the lifetime of the development.

Where turbine control can prevent the effect at source, I consider that should be the primary mitigation.

Mitigation should not depend upon complaints after operation begins

I am also concerned about a system which relies upon residents identifying and reporting shadow flicker after turbines become operational.

There should be a clear distinction between:

verification of an already established mitigation system, and

waiting for residents to experience an adverse effect before deciding what mitigation is necessary.

The first is reasonable.

The second places the burden upon residents.

Before operation begins, affected dwellings can be surveyed, actual relevant windows identified and the required turbine shutdown periods programmed into the control system.

Post-construction verification can then confirm that the system works as intended.

That would provide considerably greater certainty than relying primarily upon complaints after the event.

The cumulative mitigation system also needs to work in practice

The presence of Oatfield creates an additional practical issue.

If both developments are capable of producing shadow flicker at the same dwelling, the mitigation arrangements need to ensure that the **combined effect is controlled**.

It would be unsatisfactory if Knockshanvo's SCADA system prevented its own turbine from causing flicker at a particular time while an Oatfield turbine produced the same effect shortly before or afterwards.

From the resident's perspective, the relevant outcome is the total experience at the home.

The Commission should therefore be satisfied that the cumulative assessment identifies every relevant turbine and that operational mitigation can ensure the required residential protection across both developments.

The difference between predicted and actual effects needs to favour the resident

The Further Information relies partly upon post-construction site visits to verify modelled conditions.

I support verification.

However, where the actual window arrangement or other site conditions mean that a dwelling experiences more shadow flicker than predicted, the consequence should not be that the resident must prove that the model was wrong.

There should be a clear mechanism allowing the SCADA parameters to be immediately adjusted to the actual conditions.

The planning condition should protect the **dwelling and its occupants**, not merely require compliance with the assumptions used in the original computer model.

My request to the Commission

I ask the Commission to ensure that my dwelling is positively identified within the shadow-flicker assessment and that the predicted individual and cumulative effects at my home are clearly established before a decision is made.

More generally, I ask the Commission to satisfy itself that:

- every residential receptor potentially affected by Knockshanvo has been correctly identified;
- the cumulative assessment with Oatfield is internally consistent and reflects the total potential exposure at each dwelling;

- differences between the Knockshanvo and Oatfield modelling for common receptors have been satisfactorily resolved;
- actual window orientation and dimensions will be verified where a dwelling is potentially affected;
- turbine control, rather than requiring residents to close blinds or rely upon vegetation, will be used where necessary;
- mitigation will be programmed **before operation** rather than waiting for repeated complaints;
- the objective for existing dwellings will be **zero shadow flicker** where turbine control can achieve it; and
- any planning condition will provide a clear and enforceable mechanism for correcting effects which exceed those predicted.

The Further Information provides useful clarification and I accept that SCADA technology is capable of controlling shadow flicker.

However, that capability also means there should be no need for nearby families to accept avoidable shadow flicker within their homes.

For that reason, my concern is not simply whether the Applicant can comply with a numerical annual or daily threshold. It is whether the Commission can ensure that **my home and other existing homes are actually protected from shadow flicker in practice, including the cumulative effects of Knockshanvo and Oatfield.**

8 Two Registered Bat Roosts at My Home

Bats were another specific issue raised in my original observation. My concern is particularly direct because **there are two known bat roosts at my own property**, one associated with my house and one with my garage.

These roosts have been registered with Bat Conservation Ireland since 2015. During summer evenings I regularly observe large numbers of bats emerging from the buildings, at times in excess of 100 bats.

I specifically brought these roosts to the attention of the planning authority in my original observation because I could not identify them in the Applicant's bat assessment.

Having reviewed the Further Information and the Applicant's bat material, I remain concerned that this specific evidence has still not been substantively addressed.

My observation identified actual roosts, not potential habitat

There is an important distinction between identifying a building as having the **potential** to support bats and identifying a building where bats are actually known to roost.

In my case, I informed the planning authority that there are two existing roosts at my property and that they had been registered with Bat Conservation Ireland for approximately nine years by the time I made my original observation.

I also provided information concerning the numbers of bats I personally observe emerging during summer evenings.

This was therefore new, site-specific information capable of being checked.

Once I had supplied that information, I would have expected the Applicant to determine:

- whether the roost records were already contained within the datasets used for the EIAR;
- which species use the two roosts;
- the nature and importance of the roosts;

- the approximate number of bats using them;
- whether the bats forage or commute towards or through the Knockshanvo site;
- whether relevant commuting routes connect my property with the wider development area; and
- whether the existence of these roosts altered any part of the original bat impact assessment.

I cannot identify evidence in the Further Information demonstrating that this investigation occurred.

The Applicant's own Bat Baseline Report demonstrates the importance of known roost information

The Applicant's Bat Baseline Report does contain extensive information concerning known bat roosts in the wider area.

It records that information was sought from NPWS and that **seven Lesser Horseshoe Bat roosts, including two large summer roosts and at least one maternity roost, were recorded within 2.5 km of the proposed wind-farm site.** The report also recognises the importance of habitat within 2.5 km of known Lesser Horseshoe Bat roosts for supporting bat populations.

The report further records that the site is largely suitable for **foraging and commuting bats**, with a network of linear landscape features providing connectivity with the wider landscape.

I recognise that the ecological importance of a particular roost depends upon the species, number of bats, type of roost and its relationship with the development.

I am therefore not suggesting that the roosts at my property necessarily have the same conservation significance as a designated Lesser Horseshoe Bat roost.

My point is that **known roosts are relevant ecological information**, and two known roosts specifically identified by a resident should not remain absent from the assessment simply because they were not identified during the Applicant's original desktop study.

I cannot identify a specific response to my two roosts

The Further Information contains a dedicated response concerning bats.

The Applicant addresses matters including:

- Lesser Horseshoe Bat;
- noise and blasting;
- potential roost features;
- derogation licensing;
- collision and barotrauma;
- habitat retention;
- turbine buffers;
- blade feathering and curtailment;
- pre-construction surveys; and
- post-construction monitoring.

The Applicant maintains that its bat surveys followed recognised guidance and concludes that, with the proposed mitigation and monitoring, no significant residual effects on bats are anticipated.

I acknowledge that this is a substantive response to the **general issue of bats**.

However, I cannot identify where the Applicant addresses the **two actual registered roosts at my property which I specifically identified in my observation**.

That distinction is important.

A conclusion that the Applicant's survey programme was adequate does not explain what was done when the public participation process subsequently identified additional known roosts which apparently had not formed part of that survey baseline.

The statement that no roosts were identified within the wind-farm site does not answer my concern

The Applicant states that no roosts were identified within the Wind Farm Site and that the commercial forestry is predominantly unsuitable for roosting, although potential roost features are present and will be retained or avoided.

I do not dispute that my house and garage are outside the wind-farm site.

However, bats do not remain at their roost throughout the night.

They leave the roost to forage and commute through the surrounding landscape before returning.

The relevant ecological issue is therefore not simply:

Are there bat roosts underneath the proposed turbine foundations?

It is also:

Where do bats from known nearby roosts forage and commute, and do those movements bring them into or through the proposed development area?

That is particularly important for a wind-energy development because operational risk arises when bats are moving through the landscape rather than while they are inside the roost.

The site is acknowledged to provide foraging and commuting habitat

The Applicant's own Bat Baseline Report describes the proposed site as largely suitable for bat foraging and commuting and identifies linear features connecting it with the wider landscape.

That makes the relationship between known nearby roosts and the proposed development relevant.

If bats leaving my property use hedgerows, treelines, forestry edges, watercourses or other linear features to move towards the upland area, then the existence of the roosts may be directly relevant to the activity recorded within the development site.

Conversely, it may be that bats from my property predominantly forage in another direction and have little interaction with Knockshanvo.

I do not claim to know the answer.

That is precisely why I expected the information to be investigated once I supplied it.

Species identification is important

I can personally confirm the existence of the roosts and the substantial bat activity around my property.

I do not claim that my own observations establish the species composition of those roosts.

That would require appropriate ecological survey.

This is another reason why I believe the Applicant should have followed up the information supplied in my observation.

The significance of a roost may differ considerably depending upon whether it supports, for example, pipistrelle bats, Leisler's Bat, Brown Long-eared Bat, Lesser Horseshoe Bat or another species.

Some bat species are also considered more susceptible to turbine collision than others because of their flight behaviour.

Without establishing which species use my roosts, it is difficult to understand how the Applicant can determine whether their omission from the original baseline has any consequence for its collision-risk or habitat assessment.

Collision and barotrauma

The Further Information responds specifically to concerns regarding collision and barotrauma.

The Applicant states that the assessment followed NatureScot guidance and proposes an adaptive mitigation and monitoring plan incorporating measures including bat buffers, blade feathering, curtailment during periods of peak activity, pre-construction surveys, habitat enhancement and three years of post-construction monitoring.

I acknowledge these measures.

They are important because they demonstrate that the Applicant itself recognises that operational wind turbines can present risks to bats and that those risks require active management.

My concern is therefore not that the Applicant has ignored collision risk entirely.

It is whether the activity dataset used to assess that risk adequately represents the bats using the wider landscape, including bats associated with known roosts that were not identified in the original baseline.

Mitigation applied to an incomplete understanding of the local bat population may not provide the same degree of confidence as mitigation informed by a complete baseline.

Reliance upon adaptive mitigation does not remove the need for an adequate baseline

The Applicant proposes that operational monitoring can identify changes in bat activity and that curtailment can be adjusted where necessary.

There is value in this approach.

However, post-construction monitoring should not become a substitute for investigating known ecological information before consent.

If a resident identifies two established bat roosts before a decision has been made, the appropriate time to determine their ecological relevance is **before the turbines are constructed**, not after operational monitoring identifies an unexpected level of bat activity or mortality.

Adaptive mitigation is most useful where it responds to genuinely unpredictable changes.

It should not be relied upon to compensate for a known information gap which could reasonably have been investigated during the planning process.

Pre-construction surveys do not fully resolve this issue

The Applicant also proposes pre-construction surveys.

Again, I support appropriate pre-construction ecological surveys.

However, there is an important difference between:

identifying a potential roost that may unexpectedly be discovered during construction,
and

a resident identifying **two existing registered roosts before planning permission has been determined**.

The latter information is already available.

If those roosts are relevant to the assessment of collision risk, commuting routes or habitat connectivity, that information should inform the Commission's decision rather than being deferred until after permission has been granted.

Habitat connectivity

The Applicant's own bat assessment recognises the importance of linear landscape features for commuting and foraging bats.

This is particularly relevant in a landscape containing forestry, hedgerows, treelines, streams and agricultural land.

Construction of Knockshanvo would involve forestry removal, new and upgraded roads, turbine clearances and other changes to the landscape.

Those changes may affect how bats move through the area even where the roost itself is not physically disturbed.

The relevant question therefore extends beyond direct roost loss.

It includes whether the development could affect:

- commuting routes;
- foraging habitat;
- connectivity between roosts and feeding areas;
- exposure to turbine collision risk; and
- exposure to lighting or disturbance.

The existence and location of known roosts are relevant to understanding those pathways.

Lighting

Artificial lighting is another issue which deserves consideration.

Different bat species respond differently to lighting, and some species are particularly light-sensitive.

Construction compounds, substations, maintenance activities and aviation requirements can introduce artificial light into an otherwise predominantly dark rural landscape.

The Applicant proposes lighting controls and mitigation, and I acknowledge that.

However, if bats from my property regularly commute towards or through the development area, their established routes should be known when assessing where lighting may create disturbance or avoidance effects.

Again, the issue returns to the absence of a clear investigation of the roosts I identified.

Cumulative effects with Oatfield

My concern is also cumulative.

If Knockshanvo and Oatfield both proceed, the wider area would contain approximately **20 large wind turbines**, together with associated forestry clearance, roads, turbine clearings, substations, lighting and other infrastructure.

Bats leaving a roost do not recognise the planning boundary between one wind farm and another.

A bat using the wider landscape could encounter habitat changes and turbines associated with both developments during the same night's activity.

For that reason, the relevant question is not merely whether my two roosts are sufficiently distant from an individual Knockshanvo turbine.

It is whether bats associated with those roosts use a wider foraging and commuting landscape that would be altered by **both Knockshanvo and Oatfield**.

I do not consider that this question can be confidently answered without first establishing the species using the roosts and their relationship with the surrounding habitat.

The public participation process provided an opportunity to correct the baseline

This issue illustrates the point I made in Section 3.

The Applicant cannot reasonably be expected to know the location of every private bat roost before an application is submitted.

Private dwellings may contain roosts which do not appear in publicly available databases, and ecological consultants cannot simply enter private property without permission.

However, that explanation no longer applies once the owner of the property **specifically identifies the roost through the statutory planning process**.

I informed the planning authority of the roosts.

Their location could therefore have been verified. I could have been contacted. Appropriate survey access could have been requested.

The public consultation process had provided precisely the type of local information that was missing from the original baseline.

I find it difficult to understand why the Further Information does not demonstrate that this information was then investigated.

I would have facilitated appropriate investigation

As with my private well, I want to make clear that access was not an obstacle from my side.

Had the Applicant or its ecologists contacted me following my original observation and requested reasonable access to verify the bat roosts, establish species or investigate emergence and commuting activity, I would have facilitated an appropriate survey.

No such request was made to me.

That is significant because the Applicant cannot now say that the roosts were incapable of investigation.

The information was supplied and the property owner was available.

What I consider should have happened

Following receipt of my original observation, I consider that the Applicant should at least have:

1. verified the two registered roost records;
2. contacted me regarding access;
3. established which species use the roosts;
4. established the nature and approximate importance of each roost;
5. undertaken appropriate emergence/activity surveys if required;
6. considered likely commuting and foraging routes from the property;
7. compared those routes with the bat activity already recorded within the Knockshanvo site;
8. assessed any implications for collision risk, habitat connectivity and lighting;

9. considered cumulative effects with Oatfield; and
10. explained whether this additional information changed, or did not change, the conclusions of the EIAR and NIS.

The conclusion might ultimately have remained unchanged.

But there is an important difference between reaching that conclusion **after investigating the additional evidence** and simply relying upon the original assessment without demonstrating that the evidence was considered.

My request to the Commission

I am not asking the Commission to assume that the existence of two bat roosts at my property means that Knockshanvo will necessarily have a significant effect on bats.

I am asking the Commission to consider a much narrower evidential problem.

Two known bat roosts were specifically identified by a nearby resident after apparently being absent from the Applicant's original bat baseline, yet the Further Information does not demonstrate that those roosts were subsequently investigated or incorporated into the assessment.

That is particularly important because the Applicant's own Bat Baseline Report acknowledges that the site provides suitable foraging and commuting habitat and that linear features connect it with the wider landscape.

The Further Information also confirms that collision, barotrauma, habitat loss, roost loss and displacement/disturbance are recognised wind-farm impact pathways for bats and that operational mitigation and monitoring are required.

I therefore ask the Commission to satisfy itself, before determining the application, that:

- the two registered roosts at my property have been correctly identified;
- the species and nature of those roosts are understood;
- their relationship with the Knockshanvo foraging and commuting landscape has been assessed;
- any relevant flight routes have been considered in the collision-risk assessment;
- lighting and habitat-connectivity effects have been considered;
- the cumulative relationship with Oatfield has been adequately assessed; and
- the Applicant's conclusion of no significant residual effect remains valid when this additional site-specific evidence is taken into account.

In my view, referring generally to an extensive bat survey programme does not resolve a **specific omission identified through public participation.**

For that reason, the Further Information has **not adequately resolved the concerns I raised regarding the two registered bat roosts at my home and the use of the surrounding Knockshanvo/Oatfield landscape by bats associated with those roosts.**

9 Birds and Wildlife Observed Around My Home and Farm

Birds and other wildlife were an important part of my original observation because my concerns were based not only on published records or survey reports, but also on species that I have personally observed around my home, farm and the wider Knockshanvo area over many years.

In my original observation I provided information concerning **Hen Harrier, Kestrel, Barn Owl, Buzzard, Merlin, White-tailed Eagle and Cuckoo**, together with observations of other wildlife including Marsh Fritillary, Red Squirrel and Pine Marten. I also supplied photographs of Kestrels around my home and mapped locations where I had personally observed Hen Harrier.

I acknowledge that the Applicant has now provided substantial additional ornithological and ecological information. My concern is not that the Applicant has failed to carry out bird surveys. Rather, it is whether the survey evidence and Further Information adequately reflect the use of the wider landscape by protected birds and other wildlife, including the site-specific information supplied by residents.

My observations are local evidence

I do not present myself as an ornithologist or ecologist.

However, I have lived in this area for approximately twenty years and farm locally. This gives me an opportunity to observe wildlife throughout the year and over a much longer period than any individual ecological survey programme.

Local observations cannot replace systematic ecological surveys. Equally, systematic surveys should not automatically result in local observations being disregarded.

Where residents identify particular protected species, locations or recurring activity, that information can be used to test and supplement the professional survey baseline.

That is why I included specific observations and photographs in my original submission.

Hen Harrier

Hen Harrier was one of the species about which I was particularly concerned.

I have personally observed Hen Harrier in the area and included a map with my original observation showing locations of those observations.

The Further Information contains a substantial response concerning Hen Harrier, including survey effort, habitat use, displacement, collision risk and cumulative effects.

I acknowledge that the Applicant has therefore responded extensively to the general Hen Harrier issue.

However, Hen Harrier is a highly mobile species. The ecological question cannot be reduced to whether a bird was recorded directly at a proposed turbine location during a particular survey period.

The wider upland landscape contains forestry, open ground, bog, agricultural land and other habitats which can be used at different times for foraging, commuting and breeding.

My observations are relevant because they provide additional evidence that Hen Harrier uses the wider landscape within which Knockshanvo and Oatfield are proposed.

Displacement may extend beyond the physical turbine footprint

One of my concerns is the distinction between direct habitat loss and **effective habitat loss through displacement or avoidance**.

Nine turbine foundations occupy a relatively limited physical area.

However, a bird does not have to physically collide with a turbine for the development to affect how it uses the landscape.

If a species avoids turbines, roads, increased activity or associated infrastructure, the area of habitat functionally affected can extend considerably beyond the footprint of the concrete foundations.

This is particularly relevant when considering **nine turbines at Knockshanvo and, cumulatively with Oatfield, approximately 20 turbines within the same wider upland landscape, with turbines approaching 185 metres in overall height.**

The relevant ecological question is therefore how individual bird populations will respond to the introduction of that combined turbine landscape, rather than simply how many hectares are physically occupied by infrastructure.

Collision risk is not confined to Hen Harrier

My original observation also identified other protected birds using the area.

The Applicant's Collision Risk Assessment identifies seven Key Ornithological Receptors recorded at potential collision height:

- Hen Harrier;
- Peregrine;
- Kestrel;
- Snipe;
- Woodcock;
- Buzzard; and
- Sparrowhawk.

Collision-risk modelling was undertaken for these species.

I acknowledge that this is broader than a Hen Harrier-only assessment and that the Applicant has undertaken a significant amount of ornithological work.

However, the reliability of collision modelling ultimately depends upon the quality of the flight-activity information used in the model.

That is particularly relevant because the Applicant itself acknowledges limitations in vantage-point visibility at parts of the turbine layout.

Vantage-point visibility

The Applicant's Collision Risk Assessment acknowledges that it was difficult to obtain complete visibility of the proposed turbine layout because of the combination of topography and commercial forestry.

An additional vantage point, VP6, was subsequently introduced to improve coverage.

I acknowledge that this was a reasonable attempt to address the issue.

However, the Applicant also records that **T4 was not covered by a vantage-point survey at the lowest swept height**, while T7 had also not been covered at that height before VP6 was introduced.

The Applicant considers that the collision-risk methodology can account for viewshed gaps and argues that major differences in bird distribution are unlikely because the affected areas are predominantly commercial forestry.

I do not consider that similarity in broad habitat classification necessarily establishes similarity in bird flight activity.

Bird movement can be influenced by forestry edges, clearings, ridges, topography, feeding opportunities and routes between different habitat areas.

This is another area where observations by people living and farming around the development can usefully supplement formal survey information.

Kestrels around my home

I specifically raised Kestrel in my original observation and included photographs of Kestrels around my property.

This is a species I regularly see in the locality.

The Applicant has included Kestrel within its collision-risk modelling, and I acknowledge that.

My concern is therefore not that Kestrel has been entirely omitted from the ornithological assessment.

Rather, my observations demonstrate that the wider landscape surrounding the development is actively used by this species.

The relevant assessment therefore needs to consider the movement of birds across the wider area, particularly where Knockshanvo and Oatfield would collectively introduce a substantial number of turbines into the same landscape.

Snipe and Woodcock – an important uncertainty acknowledged by the Applicant

The assessment of Snipe is particularly relevant because the Applicant's own Collision Risk Assessment acknowledges a limitation.

Snipe activity is substantially crepuscular, whereas vantage-point surveys were predominantly undertaken during daylight.

The Applicant consequently acknowledges that the predicted number of Snipe transits, and therefore the predicted collision rate, **may be largely underestimated**.

The Applicant attempts to address this by applying an assumption concerning nocturnal activity for Snipe and Woodcock.

I acknowledge that this represents an attempt to compensate for the survey limitation.

However, where the Applicant itself recognises the possibility of a substantial underestimate in the observed flight activity, I believe the Commission should examine carefully how sensitive the collision prediction is to the assumed nocturnal activity rate.

Woodcock also has significant crepuscular and nocturnal activity.

This means that daytime observation inevitably provides a less complete picture for these species than for birds active principally during daylight.

Aviation lighting and nocturnal birds

The proposed turbines will require aviation lighting.

The Applicant's response concerning the ecological effects of this lighting is principally framed around Hen Harrier, including the fact that Hen Harrier is predominantly diurnal.

That may be relevant to Hen Harrier, but it does not necessarily resolve the issue for birds such as Snipe and Woodcock which are active during dusk and darkness.

I do not claim that aviation lighting will necessarily cause a significant effect upon these species.

I simply consider that, where nocturnal and crepuscular species are known to use the area, the potential behavioural or collision implications of aviation lighting should be assessed for those species rather than principally by reference to a diurnal species.

Cumulative effects are particularly important for mobile species

Birds do not recognise the planning boundary between Knockshanvo and Oatfield.

A Hen Harrier, Kestrel, Buzzard or other mobile species can move through both development areas during the same period of activity.

If both projects proceed, the relevant landscape would contain approximately **20 turbines**.

The cumulative assessment therefore needs to consider the combined effects of:

- collision risk;
- displacement;
- habitat loss and modification;
- forestry removal;
- new roads and increased activity;
- aviation lighting; and
- changes in the availability and connectivity of suitable habitat.

These effects should not necessarily be viewed independently.

For example, a bird displaced from one part of its existing habitat may alter its flight routes or concentrate its use of another area. Collision risk and displacement can therefore act upon the same population even though they are assessed as separate impact pathways.

From my perspective, this combined landscape-scale effect is more meaningful than considering each wind farm as an isolated development.

Other raptors and protected birds

My original observation also referred to observations of **Barn Owl, Buzzard, Merlin and White-tailed Eagle** in the wider area.

I recognise that the significance of occasional observations varies by species and that the presence of a protected bird somewhere in the wider locality does not automatically establish a significant effect from the development.

I do not make that claim.

The relevance of these observations is that they demonstrate the ecological richness and continued use of this landscape by a range of mobile bird species.

The Commission should therefore consider local records alongside the Applicant's survey results rather than treating an absence or low number of observations during formal survey periods as proof that a species does not use the wider area.

Marsh Fritillary

My original observation also identified **Marsh Fritillary** in the locality.

The Further Information addresses Marsh Fritillary more directly than some of the other site-specific information I supplied. The Applicant discusses records, suitable habitat and the measures proposed to avoid effects.

I acknowledge that response.

My concern is therefore narrower than it was when I made my original observation.

Where suitable habitat occurs, I consider that it should be identified and protected on the basis of actual field conditions, particularly where forestry clearance, roads, drainage or other works could affect wet grassland or other suitable habitat.

I do not consider it necessary to repeat the wider Marsh Fritillary arguments in this personal response where they are addressed more comprehensively elsewhere in the planning record.

Other wildlife

I also referred in my original observation to species such as **Red Squirrel and Pine Marten**, together with other wildlife regularly encountered in the locality.

Again, I do not suggest that simply observing these species establishes that the development must be refused.

My point is that this is not an empty commercial forestry landscape.

Commercial forestry itself, forestry edges, hedgerows, streams, bog, agricultural land and areas of open ground combine to provide habitat for a range of wildlife.

The ecological assessment therefore needs to consider the functioning landscape as a whole rather than assuming that commercial forestry is of little ecological significance merely because it is planted habitat.

Forestry felling will change existing habitat

The proposed development requires forestry removal.

I recognise that commercial forestry is routinely harvested and replanted and that the ecological value of different forestry stands varies.

However, forestry clearance associated with a wind farm differs from ordinary rotational forestry in one important respect: some areas are permanently converted to turbine infrastructure, roads, hardstands and maintained turbine-clearance areas.

The resulting landscape may therefore remain structurally different throughout the operational life of the wind farm.

This can affect:

- habitat availability;
- forestry-edge habitat;
- shelter;
- commuting routes;
- prey availability;
- bird flight behaviour; and
- connectivity between habitats.

Those effects need to be considered cumulatively with similar changes associated with Oatfield.

Local observations should be used to improve the ecological baseline

As with the wells, springs and bat roosts discussed earlier in this response, I believe public participation should be used as an opportunity to improve the environmental information available to the Commission.

I do not expect every wildlife sighting reported by a resident to trigger a new ecological survey.

However, where multiple residents report recurring use of an area by a protected species, or provide photographs, dates and locations, that evidence should be considered alongside the formal survey results.

The appropriate question is not whether the resident is a professional ecologist.

It is whether the information is credible, relevant and capable of improving the understanding of how wildlife uses the area.

Post-construction monitoring is not a substitute for the pre-consent assessment

The Applicant proposes post-construction monitoring for birds and bats.

I support appropriate monitoring if a development proceeds.

However, monitoring after turbines have been constructed cannot replace the need to establish likely effects before deciding whether the development should be permitted.

If post-construction monitoring subsequently identifies unexpected collision mortality or displacement, the physical development will already exist.

Monitoring should therefore verify predictions and allow mitigation to be adjusted. It should not be relied upon to determine for the first time whether the original predictions were correct.

My request to the Commission

I acknowledge that the Applicant has undertaken an extensive ornithological survey programme and has provided considerably more technical information than was available when I made my original observation.

My concern is therefore not that birds and wildlife have simply been ignored.

I ask the Commission instead to consider whether the conclusions reached are sufficiently robust when account is taken of:

- the use of the wider area by Hen Harrier observed by residents, including myself;
- the regular presence of Kestrel and other raptors around my property;
- acknowledged gaps in vantage-point visibility;

- the Applicant's own recognition that Snipe flight activity and predicted collision risk may be substantially underestimated by predominantly daytime observations;
- the presence of crepuscular and nocturnal species in considering aviation lighting;
- displacement effects extending beyond the physical turbine footprint;
- permanent changes associated with forestry removal and turbine infrastructure;
- the combined effects of approximately **20 Knockshanvo/Oatfield turbines** within the same wider upland landscape; and
- the need to consider credible local observations alongside formal ecological surveys.

I am not asking the Commission to accept every wildlife observation I have made as proof of a significant environmental effect.

I am asking that those observations be treated for what they are: **additional site-specific evidence from somebody who has lived and farmed in this landscape for many years.**

The Applicant's surveys provide a snapshot—albeit an extensive one—of wildlife activity during defined survey periods. Local residents provide a different type of evidence based upon repeated observations over much longer periods.

In my view, the two should be considered together.

For those reasons, while the Further Information provides significant additional ornithological and ecological information, I remain concerned that it does **not fully resolve the potential cumulative effects of Knockshanvo and Oatfield on birds and other wildlife using the wider landscape around my home and farm.**

10 Cumulative Impact on My Home and Locality

One of the main concerns in my original observation was that Knockshanvo cannot reasonably be assessed or understood in isolation from the other wind-energy developments proposed and permitted in the surrounding East Clare area.

This issue is particularly important to me because I live within the landscape in which these developments are proposed. My concern is not simply the cumulative number of turbines when viewed on a map. It is the **combined effect that these developments could have on my home, my family and the locality in which we live.**

The Further Information contains cumulative assessments under a number of separate environmental headings. I acknowledge that the Applicant has therefore considered cumulative effects. However, I remain concerned that assessing cumulative effects separately under noise, hydrology, ecology, landscape and other technical headings does not necessarily capture the **overall cumulative change to the residential environment** experienced by people living between or close to multiple developments.

Knockshanvo would not exist in isolation

My home at Gortnaglough is approximately 1 km from the proposed Knockshanvo development.

The proposed Oatfield Wind Farm is even closer to my home, at approximately 800 metres from the nearest proposed turbine.

If both developments proceed, there would be approximately **20 large wind turbines across the combined Knockshanvo/Oatfield upland landscape.**

These would not appear or operate as two completely separate developments from my property.

They would form part of the same altered landscape.

My original observation also identified other wind-energy developments in the wider East Clare area, including **Fahybeg, Carrownagowan, Lackareagh and Ballycar.** The

planning status of individual projects may change over time, and I accept that the Commission must assess cumulative development on the basis of the projects properly required to be included at the time of its decision.

The important point is that Knockshanvo is being proposed in an area already subject to a significant concentration of wind-energy development.

Cumulative effects are more than the number of turbines

It would be too simplistic to argue that twenty turbines necessarily create exactly twice the effect of ten turbines.

Different effects operate in different ways.

Noise depends upon turbine location, wind direction and propagation.

Visual effects depend upon topography and viewing direction.

Hydrological effects depend upon catchments and pathways.

Ecological effects depend upon habitat and species behaviour.

I therefore accept that cumulative assessment requires more than simply adding turbine numbers together.

However, the opposite is also true.

Breaking the overall development environment into separate technical assessments can make it difficult to see the combined effect on the person who actually lives there.

From my perspective, cumulative impact means potentially experiencing:

- turbines in the landscape around my home;
- operational noise from more than one wind farm;
- shadow flicker from different turbines;
- aviation lighting at night;
- forestry clearance and landscape change;
- construction traffic and activity;
- drainage and ground disturbance across the wider uplands;
- effects upon birds and bats moving across both development areas; and
- the continuing presence of this infrastructure for decades.

Each individual effect may be assessed separately in an EIAR.

My family experiences them together.

My home lies between major proposed wind-energy developments

The location of my home makes cumulative assessment particularly important.

This is not a situation where another wind farm is many kilometres away and forms only a distant background element.

Knockshanvo and Oatfield are proposed within the same immediate upland area surrounding Broadford.

My home would therefore potentially be influenced by both developments.

This has practical consequences.

For example, if I hear wind-turbine noise at night, I will not experience one part of that sound as "Knockshanvo" and another part as "Oatfield".

If turbines from both developments are visible from or around my property, I will experience the combined visual environment.

If bats or birds move across both sites, they encounter the combined development.

If both developments alter forestry, drainage and ground conditions within the same uplands, water moves according to the physical catchment rather than the planning boundary.

This is why I believe particular care is required before concluding that the cumulative effects are acceptable.

Cumulative noise

I have dealt with cumulative noise in detail in Section 7.

The issue illustrates the wider cumulative problem particularly well.

The Applicant predicts that Knockshanvo can operate within the relevant limits when cumulative contributions from other wind farms are taken into account.

I acknowledge that modelling.

However, if both Knockshanvo and Oatfield operate and a noise problem subsequently occurs at my home, identifying the contribution from each development may be technically difficult.

The cumulative assessment therefore needs to consider not merely whether a mathematical prediction complies, but whether the resulting limits can be **effectively monitored and enforced in a multi-wind-farm environment**.

For somebody living in that environment, that distinction is important.

Cumulative shadow flicker

A similar issue arises with shadow flicker.

The Applicant has undertaken cumulative shadow-flicker modelling with Oatfield.

However, from inside a dwelling, the relevant effect is the total amount of shadow flicker experienced, irrespective of which development causes a particular event.

If different turbines associated with Knockshanvo and Oatfield are capable of affecting the same property at different times, the mitigation arrangements must protect the resident from the **combined effect**.

As explained in Section 7, where modern turbine-control systems are capable of preventing shadow flicker at an existing dwelling, I consider that the appropriate objective should be zero shadow flicker rather than requiring residents to tolerate separate allowances from different developments.

Cumulative hydrology and forestry

The cumulative hydrological issue is particularly important because both Knockshanvo and Oatfield involve development within the same wider upland environment.

Construction would involve combinations of:

- forestry felling;
- excavation;
- turbine foundations;
- access roads;

- hardstands;
- drainage;
- cable trenches; and
- other ground disturbance.

Each project may have its own drainage design and environmental controls.

However, once water leaves an individual construction area, it enters the existing hydrological environment.

The relevant receiving environment is therefore not confined to either planning boundary.

This matters to me because of the shallow private well supplying my family and the eight unmapped springs I identified in my original observation.

If the baseline understanding of local shallow groundwater and springs is incomplete, I remain concerned about the certainty with which cumulative effects across both development areas can be excluded.

Cumulative effects on birds and bats

The same principle applies to wildlife.

A Hen Harrier, Kestrel or bat leaving my property does not distinguish between Knockshanvo and Oatfield.

It may forage or commute across a landscape containing both developments.

If both proceed, wildlife may experience the combined effects of approximately 20 turbines together with forestry removal, roads, turbine clearings, lighting and other infrastructure.

The relevant cumulative ecological effects can include both **collision risk and effective habitat loss through displacement**.

As explained in Sections 8 and 9, I remain particularly concerned that site-specific information I supplied regarding my two registered bat roosts and my observations of protected birds has not been fully incorporated into the assessment.

A cumulative ecological conclusion is only as reliable as the underlying information concerning the populations and habitats being assessed.

Landscape and the character of the area

The cumulative landscape effect is also significant from the perspective of somebody living in the area.

A single wind farm changes part of a landscape.

Several wind farms can change the **character of the landscape itself**, particularly where large turbines become a recurring feature across different directions and ridgelines.

The proposed turbines are very large structures, approaching 185 metres in overall height.

If Knockshanvo and Oatfield both proceed, approximately 20 such structures would occupy the same wider upland landscape close to Broadford.

Other wind-energy development exists or is proposed in the wider East Clare area.

The issue for the Commission is therefore not merely whether an additional turbine can be seen from a particular viewpoint. It is whether the cumulative scale and distribution of development would result in wind-energy infrastructure becoming a dominant characteristic of the landscape in which existing communities and homes are located.

I address residential amenity and landscape further in Section 11.

Aviation lighting will introduce a cumulative night-time effect

The scale of the proposed turbines also means aviation lighting is relevant.

This is a different type of visual effect from daytime turbine visibility.

The rural uplands around Broadford currently have a relatively dark night-time environment.

If multiple turbines across Knockshanvo and Oatfield require aviation lighting, this would introduce a new and recurring artificial element into that environment.

Even if individual lights comply with aviation requirements, the cumulative visual effect of aviation lighting across a substantial group of turbines should be considered as part of the overall change to the residential and landscape environment.

This is particularly relevant because the turbines would remain in place for decades.

Construction effects may overlap

The construction phase also requires cumulative consideration.

Construction of a large wind farm is temporary, but it can involve significant activity over an extended period.

If construction of Knockshanvo overlaps with Oatfield or other major development in the locality, residents may experience combined:

- HGV movements;
- abnormal-load deliveries;
- road works;
- construction noise;
- forestry operations;
- dust;
- drainage works; and
- general construction activity.

The fact that each project individually has a temporary construction period does not necessarily mean that the cumulative effect upon a community will be short-lived if major projects are constructed sequentially or simultaneously.

The Commission should therefore consider the realistic possibility of overlapping or consecutive construction periods.

Sequential development can also create cumulative effects

Cumulative impact should not be understood only as two projects operating simultaneously.

If one wind farm is constructed, followed shortly afterwards by another, residents may experience years of successive construction activity before entering a long-term operational environment containing both developments.

Similarly, forestry felling, road works and grid-related construction may occur at different stages.

For the community, the cumulative effect is the total period of disturbance rather than the duration attributed to each individual planning application.

The combined effect on residential amenity needs to be considered

This leads to what I consider one of the most important issues.

Environmental assessments understandably divide effects into specialist topics.

However, **residential amenity is experienced as a whole.**

A home could theoretically remain below:

- a noise limit;
- a shadow-flicker threshold;
- a particular visual-impact classification; and
- a hydrological significance threshold,

while the combined change to the living environment is nevertheless substantial.

That does not mean that individually acceptable effects should automatically be treated as unacceptable when combined.

It means that the Commission should consider whether the **overall cumulative burden upon nearby residents** remains reasonable.

In my case, the potential combination includes proximity to two large wind farms, turbine visibility, operational noise, possible shadow flicker, aviation lighting, changes to the surrounding forestry landscape and concern regarding the shallow water supply upon which my family depends.

These are not separate experiences when viewed from my home.

The duration of the effect matters

The operational effects are also long-term.

This is not development which will affect the area for several months and then disappear.

If permission is granted and the projects are constructed, the turbines will form part of the environment around existing homes for decades.

That makes uncertainty particularly important.

A relatively small assessment error can have very different consequences depending upon whether the effect lasts for several weeks or for a substantial portion of a family's lifetime in a home.

I therefore believe that where uncertainty exists concerning cumulative effects on nearby residential properties, the assessment should adopt a cautious approach.

Project boundaries should not obscure the overall development pattern

I appreciate that Knockshanvo and Oatfield are separate planning applications and must each be determined on their own merits.

However, separate applications do not make the cumulative environmental effects separate.

The Commission has the benefit of information concerning both developments and is therefore in a position to consider the overall pattern of wind-energy development proposed for this upland area.

From my perspective as a resident, that is essential.

If the final outcome is approximately 20 turbines within the same wider landscape, that is the environment which should inform the cumulative assessment, rather than an artificial picture in which each development is considered principally against the landscape that existed before the other.

My concern is not opposition to renewable energy in principle

I want to make clear that my cumulative concern is not based upon an argument that no renewable-energy development should take place.

Ireland needs renewable energy and has national climate and energy obligations.

However, the need for renewable energy does not remove the requirement to determine whether a particular concentration of development is environmentally appropriate in a particular location.

There must be a point at which the cumulative scale of development becomes relevant to decisions concerning landscape capacity, residential amenity, ecology and environmental protection.

The question for this application is whether adding Knockshanvo to the existing, permitted and proposed pattern of development crosses that point in this particular landscape.

My request to the Commission

I ask the Commission not to consider cumulative impact solely as a collection of separate technical calculations.

Those calculations are necessary, but they should be followed by consideration of the **overall effect upon the receiving environment and the people who live within it.**

In particular, I ask the Commission to consider:

- the proximity of my home to both Knockshanvo and Oatfield;
- the combined presence of approximately 20 turbines if both developments proceed;
- cumulative operational noise and whether it can practically be enforced;
- cumulative shadow flicker and the ability of mitigation to protect individual homes;
- cumulative forestry removal, drainage and ground disturbance;
- the relationship of those works with private wells, springs and local watercourses;
- cumulative collision, displacement and habitat effects upon birds and bats;
- the cumulative daytime landscape effect;
- aviation lighting and the resulting change to the night-time environment;
- the potential for overlapping or consecutive construction periods; and
- most importantly, the **combined long-term effect upon residential amenity** rather than simply whether each individual environmental parameter remains below a separate threshold.

I acknowledge that the Applicant's Further Information contains cumulative assessments and I do not suggest that cumulative effects have been ignored.

My concern is that the technical separation of those effects does not fully describe what the proposed development means for somebody living within the affected landscape.

For my family, the question is not simply whether **Knockshanvo alone** can theoretically satisfy each individual assessment criterion.

The question is what our home and locality will be like if Knockshanvo is added to Oatfield and the wider concentration of wind-energy development in East Clare.

In my view, the Further Information has **not adequately resolved that overall cumulative residential and environmental concern.**

11 Land, Farming and Residential Amenity

My concerns regarding the proposed development also arise from my direct connection with the land and from the potential long-term change to the residential environment around my family home.

I have lived in Gortnaglough for approximately twenty years and farm land locally with my brother. My knowledge of this area therefore comes from living and working within it throughout the year and in a wide range of weather and ground conditions.

In my original observation I raised concerns regarding the nature of the upland ground, drainage and springs, the effect of the proposed development on the character of the area, the proximity of large turbines to existing homes and the potential restriction of future residential use of family land.

The Further Information addresses a number of these matters under separate headings, including hydrology, peat stability, landscape and visual impact, residential amenity and property. However, I do not consider that it fully addresses the **combined effect upon existing residents and landowners who will continue to live and work within this landscape if the development proceeds.**

My experience of the land

I farm approximately 18 acres locally with my brother.

As explained earlier in this response, I know of **eight springs on this holding which were not identified in the Applicant's original mapping.**

That is relevant not only to hydrology but also to my wider concern regarding the understanding of local ground conditions.

People who farm land become familiar with where ground remains wet, where water emerges after prolonged rainfall, where machinery can travel safely, where drainage occurs and how those conditions change throughout the year.

I do not suggest that this knowledge replaces geotechnical, hydrological or ecological assessment.

However, where local observations identify conditions or physical features absent from the technical baseline, they should be used to test that assessment.

This is an upland environment with complex ground and drainage conditions

The proposed wind farm would require substantial physical works within an upland environment.

These include turbine foundations, crane hardstands, new and upgraded access roads, drainage, cable trenches, forestry felling and other excavation and construction activity.

The Applicant has undertaken peat-stability and geotechnical assessments and proposes mitigation and construction controls.

I acknowledge that work.

However, the physical scale of the proposed infrastructure should not be underestimated simply because the completed development will ultimately have a relatively limited permanent footprint when expressed as a percentage of the overall site.

Roads, foundations, drainage systems and turbine hardstands require actual intervention in the existing land.

From my experience of farming locally, water and ground conditions can vary significantly over relatively short distances. This reinforces my concern that site-specific features identified by residents should be investigated rather than relying solely upon regional or mapped characteristics.

Residential amenity is broader than compliance with individual limits

My home is an existing family home.

The assessment of residential amenity should therefore extend beyond whether any single technical threshold is exceeded.

As discussed in the preceding sections, my family could potentially experience some combination of:

- visibility of very large turbines;
- operational wind-turbine noise;
- cumulative noise from Knockshanvo and Oatfield;
- shadow flicker;
- aviation lighting;
- changes to the surrounding forestry and upland landscape;
- construction activity and traffic; and
- concern regarding the security of our private drinking-water supply.

Each of these issues can be assessed separately.

However, residential amenity is the **combined quality of the environment in which people live.**

A home does not cease to be materially affected simply because every individual environmental effect has been placed into a different chapter of an EIAR.

Proximity and turbine scale matter

The scale of the proposed turbines is particularly relevant.

These are structures approaching **185 metres in overall height.**

Structures of that scale cannot be assimilated into an upland landscape in the same manner as ordinary agricultural, forestry or residential development.

My concern is not simply that turbines will be visible.

Visibility alone does not necessarily make a development unacceptable.

The relevant questions include:

- how much of the development will be visible;
- how prominent the turbines will appear;
- how frequently they will be experienced from the home and surrounding roads and land;
- whether turbines from more than one development will be visible;
- whether turbines will occur in different directions around a dwelling; and
- whether the cumulative development changes the overall character of the residential setting.

These issues are particularly important given the proximity of both Knockshanvo and Oatfield to my home.

The landscape is also my living environment

Landscape assessment necessarily involves recognised landscape and visual methodology, viewpoints, zones of theoretical visibility and photomontages.

Those tools are useful.

However, a selected viewpoint cannot completely reproduce the experience of somebody who lives within a landscape every day.

Residents experience the landscape:

- approaching and leaving their home;
- working outdoors;
- travelling local roads;
- walking around their property;
- looking from different rooms and windows;
- during different seasons;
- during different weather conditions; and
- during both daylight and darkness.

The turbines would also be moving structures. Their blades would rotate, and aviation lighting would potentially make parts of the development perceptible at night.

For that reason, I ask the Commission to consider the landscape not simply as scenery viewed from selected assessment points, but as the **existing living environment of the community**.

Forestry does not mean that the landscape is industrial

A significant part of the Knockshanvo area consists of commercial forestry.

I am concerned that this can sometimes result in the landscape being regarded as already heavily modified and therefore more capable of absorbing large-scale infrastructure.

Commercial forestry is obviously a managed land use.

However, forestry does not make an area industrial.

Forests are harvested and replanted. They form part of the changing rural landscape and also provide habitat, screening and recreational and landscape functions.

A wind farm containing turbines approaching 185 metres in height represents a very different scale and type of intervention.

The fact that turbines are partly located within or adjacent to commercial forestry should not reduce the importance of assessing their effects upon the surrounding rural homes and landscape.

Future residential use of family land

My original observation also raised concern about the possible **sterilisation of family land for future residential use**.

This issue is distinct from property-value arguments.

My concern is not simply that a house or parcel of land might be worth less financially.

Like many rural families, land can have an important role in allowing children or other family members to remain living within their local community in the future, subject of course to planning policy and obtaining planning permission.

I fully accept that ownership of land does not create an automatic entitlement to planning permission for a dwelling.

Any future application would have to comply with the planning policies applying at that time.

However, the introduction of large wind turbines close to undeveloped family land may create an additional constraint which did not previously exist.

Future residential development could potentially be affected by matters such as:

- turbine separation distances;
- predicted noise contours;
- cumulative noise;
- shadow flicker;
- visual impact; and
- other residential-amenity considerations.

This is why I used the term "sterilisation" in my original observation.

The Further Information does not really answer this concern

The Applicant responds to observations concerning property values and argues that there is no reliable evidence demonstrating that wind farms necessarily cause material property devaluation.

That does not answer the concern I raised.

Whether an existing house decreases in market value is a different question from whether the development may **constrain the future planning potential of nearby family land**.

I cannot identify a substantive response in the Further Information to that distinction.

I am not asking the Commission to assume that planning permission would otherwise be granted for future houses on my land.

I am asking it to recognise that the development itself may introduce a new long-term constraint into the planning environment surrounding existing farms and families.

The duration of the development is important

This matters because of the proposed operational life of the development.

The effect is not temporary in the way that ordinary construction activity is temporary.

If permission is granted and the wind farm is constructed, the turbines and associated infrastructure will remain a major feature of the locality for decades.

Children currently living in the area will become adults during the operational life of the development.

Decisions made now can therefore influence the future residential and land-use environment of the community for a substantial period.

This deserves consideration as part of the overall planning balance.

Property value is not my principal argument

I raised property devaluation in my original observation, and the Applicant has responded to this issue.

Having considered the Further Information, I do not intend to place significant reliance upon predictions of property-value change in this response.

There are competing studies and significant difficulty in separating the influence of a wind farm from other factors affecting property prices.

My more important concern is **residential amenity and the ability of my family to continue enjoying and using our home and land in a reasonable manner.**

That is a planning and environmental issue irrespective of what monetary value might subsequently be placed upon the property.

Farming continues after the wind farm is built

The Applicant understandably considers the operational wind farm largely in terms of the infrastructure required to operate it.

For local farmers and residents, however, ordinary activities continue around that infrastructure.

People will continue to:

- farm land;
- move livestock;
- maintain drains and boundaries;
- use local roads;
- work outdoors;
- manage forestry;
- raise families; and
- live in nearby homes.

The relevant question is therefore whether the development can coexist with those existing uses without imposing an unreasonable burden upon them.

This is particularly relevant where residents may have to deal with issues such as noise complaints, shadow-flicker reporting or concerns regarding private water supplies during the operational life of the development.

Local roads and construction activity

The construction period would also directly affect the local environment.

A development of this scale requires substantial quantities of construction material and movement of heavy and abnormal loads.

I recognise that the Applicant has prepared traffic-management proposals and that construction effects are temporary.

However, the roads concerned are also the roads used daily by residents, farmers, school traffic and local businesses.

If Knockshanvo and other major developments are constructed within overlapping periods, the cumulative construction burden may extend significantly beyond that associated with a single project.

This should be considered as part of the impact upon the ordinary use and enjoyment of the locality.

Night-time character of the area

Residential amenity also extends into the night.

The existing area is rural and generally dark.

The proposed development would introduce aviation lighting associated with very large structures on elevated ground.

Where multiple wind farms are proposed in the same wider landscape, aviation lighting has the potential to create a cumulative night-time visual effect which is quite different from the existing environment.

This effect should not be treated solely as an aviation requirement.

Aviation safety requirements may explain **why** lighting is necessary, but they do not remove the need to assess the landscape and residential effect of introducing that lighting.

The development needs to be assessed from the perspective of existing residents

Throughout the Further Information, the Applicant relies upon technical assessments showing that particular effects are not significant or can be mitigated.

Those assessments are important.

However, planning also requires consideration of whether a development represents an appropriate relationship with existing homes and communities.

The residents are already here.

My family home, neighbouring homes, farms, roads, wells and community existed before the proposed development.

The issue is therefore not whether residents can adapt sufficiently to accommodate the wind farm.

The issue is whether the wind farm can be developed without creating an unacceptable impact upon the people already living in the area.

My request to the Commission

I ask the Commission to consider land, farming and residential amenity together rather than treating them only as separate technical matters.

In particular, I ask it to have regard to:

- my direct experience of farming land containing hydrological features which were absent from the Applicant's original baseline;
- the extent of ground disturbance associated with roads, foundations, drainage and forestry removal;
- the scale and proximity of turbines approaching 185 metres in height;
- the cumulative relationship between Knockshanvo and Oatfield;
- the overall effect of noise, shadow flicker, turbine visibility and aviation lighting upon nearby homes;
- the long-term change to the character of the rural landscape;
- the possible additional constraint imposed upon future residential use of family land;
- the effect of construction and operational activity upon the ordinary use of local roads and farmland; and

- the fact that these effects would persist for a substantial part of the lives of existing residents.

I accept that rural landscapes change and that renewable-energy infrastructure has to be accommodated somewhere if national climate and energy objectives are to be achieved.

However, those objectives do not remove the requirement to protect existing residential amenity or to determine whether the **scale and concentration of development proposed at a particular location is appropriate**.

My concern is not simply that the landscape around my home will look different.

It is that Knockshanvo, particularly when considered cumulatively with Oatfield, would introduce a major long-term industrial-scale development into the immediate living and working environment of my family and neighbouring residents.

For those reasons, I do not consider that the Further Information has fully resolved my concerns regarding **land use, farming, future residential use of family land and the overall protection of residential amenity**.

12 Community Consultation and the Applicant's Claim That Every Query Was Answered

I raised community consultation in my original observation because my own experience of the consultation process differed significantly from the description of engagement now presented by the Applicant in the Further Information.

I do not suggest that shortcomings in community consultation, by themselves, determine whether planning permission should be granted or refused. Nor do I suggest that the Applicant was required to agree with residents or accommodate every request made by the community.

My concern is more relevant to the environmental assessment itself.

As demonstrated elsewhere in this response, local residents held information concerning **private wells, springs, bat roosts, wildlife and local environmental conditions which was apparently absent from the Applicant's original baseline.** Effective local engagement could have identified some of this information before the planning application was submitted.

The Further Information now states that extensive community engagement took place and makes a specific factual claim that:

“Every query submitted, whether by phone, text or email, was answered.”

That statement does not correspond with my own documented experience.

My request for a consultation clinic in Broadford

In my original observation I explained that the Applicant held a public consultation clinic in the Castle Oaks Hotel in Castleconnell.

My concern was that Castleconnell is not the community in which Knockshanvo Wind Farm is proposed.

Broadford is.

I therefore contacted FuturEnergy directly and asked that a consultation clinic be held in Broadford so that residents of the community most directly affected by the proposed development would have a reasonable opportunity to engage with the project team.

I suggested local venues that could accommodate such a meeting.

This was not an unreasonable or obstructive request.

I was actively asking the Applicant to come into the affected community and engage with us.

My email received no response

I reproduced the relevant email in my original observation.

I stated at that time that I received:

- no return email;
- no letter; and
- no telephone call

in response to that request.

That remains my recollection and understanding.

I did not raise this retrospectively after reading the Further Information. The lack of response was specifically documented in my **October 2024 observation**, well before the Applicant made its present statement that every query was answered.

That chronology is important.

The Further Information makes a categorical statement

The Applicant now states in its Further Information that:

“Every query submitted, whether by phone, text or email, was answered.”

I can only speak to my own experience.

However, my experience appears directly inconsistent with that statement.

I sent an email concerning the project requesting that a public consultation clinic be held within the affected community. I reproduced that correspondence in my original observation and recorded at that time that I received no response.

I therefore do not understand how the Applicant can now state categorically that **every** email query was answered.

This is not a matter of interpretation concerning the adequacy or quality of a response.

My position is that **I received no response at all.**

This can be objectively checked

This issue should be capable of straightforward verification.

The Applicant should have records of incoming project correspondence and outgoing responses.

If the Applicant maintains that my email was answered, it should be possible to identify:

- the date of the response;
- the method by which it was sent; and
- the substance of the response.

If such a record exists, I would expect it to be produced.

If no such record exists, the categorical statement that every query was answered should be corrected.

I consider this a reasonable point because the Applicant itself has chosen to rely upon the claim that every query was answered as evidence of the adequacy of its community engagement.

The location of the consultation clinic matters

I also remain concerned about the decision to hold the consultation clinic at Castleconnell rather than within the community surrounding the proposed wind farm.

I accept that Castleconnell is accessible by road and that residents could travel there.

That is not the point.

For a major development proposed close to Broadford, it would have been reasonable to hold at least one public consultation event **in Broadford or the immediately affected locality**.

Doing so would have made it easier for:

- elderly residents;
- people with family commitments;
- farmers;
- residents without convenient transport; and
- people simply wishing to call in locally

to engage with the project team.

More importantly, holding consultation within the affected community may have encouraged discussion about the very local environmental conditions relevant to the assessment.

Consultation is particularly important where environmental information is incomplete

My criticism of consultation is not simply that I would have preferred another meeting venue.

There is now a practical reason why the issue matters.

As set out in earlier sections of this response, my original observation subsequently identified:

- a shallow private drinking-water supply serving approximately ten people which appeared to be absent from the Applicant's baseline;
- laboratory evidence concerning the vulnerability of that water supply;
- eight unmapped springs on land I farm;
- local flooding and runoff conditions;
- two registered bat roosts at my property; and
- observations of protected birds and other wildlife.

These are precisely the kinds of matters that meaningful engagement with local residents can identify.

I do not suggest that every one of these matters would necessarily have changed the Applicant's environmental conclusions.

However, they were information about the receiving environment which the Applicant did not appear to have when its original assessments were prepared.

My registered bat roosts illustrate the point

The two registered bat roosts at my home are a particularly clear example.

They have been registered with Bat Conservation Ireland since 2015 and I regularly observe substantial bat activity at the property.

Yet I could not identify these roosts in the Applicant's original assessment.

Had effective engagement occurred with residents close to the development, information such as this could potentially have been identified and investigated before the application was submitted.

Even after I specifically identified the roosts in my statutory observation, I was not contacted by the Applicant or its ecological consultants to verify them or request survey access.

That makes it difficult for me to accept the suggestion that the consultation process was as comprehensive as the Further Information implies.

My private well provides another example

The same applies to my private drinking-water supply.

The Environmental Health Service emphasised the importance of identifying private drinking-water sources, including through walkover survey rather than reliance solely upon database information.

My old shallow well does not appear on the national well database relied upon in the assessment.

Again, direct local engagement could have identified it.

Once I identified it through my observation, the Applicant could have contacted me and investigated it.

As explained in Section 4, I would have facilitated reasonable access.

I received no such request.

Local residents are a source of environmental information

Environmental consultants understandably work within defined survey programmes.

A local resident or farmer has a different form of knowledge.

Residents may know:

- where springs emerge after prolonged rainfall;
- where roads regularly flood;
- where water flows during storms;
- where wildlife is repeatedly observed;
- where bats emerge from buildings;
- where old private wells are located; and
- how local conditions change seasonally.

This information is not automatically scientifically conclusive.

But it can identify matters requiring professional investigation.

That is one of the practical benefits of meaningful community consultation.

Consultation should involve listening as well as providing information

The Applicant's Further Information describes newsletters, information events, project communications and other engagement activities.

Those are all forms of consultation and I acknowledge that they occurred.

However, effective consultation should not simply involve the Applicant providing information about its proposed project.

It should also involve obtaining information from the people who live in the receiving environment.

In my view, that distinction is important in this case because the subsequent statutory observations appear to have identified information which was not captured in the original assessment.

I do not ask the Commission to determine the application on consultation alone

I want to be clear about the significance I attach to this issue.

I do not ask the Commission to refuse planning permission simply because I sent an email and did not receive a response.

The planning application has subsequently gone through a statutory public-participation process, and I have had the opportunity to make both my original observation and this response.

My concern about consultation is therefore **supporting evidence**, rather than a standalone reason for refusal.

It is relevant because it helps explain how some of the site-specific environmental information discussed elsewhere in this response may have been absent from the Applicant's original baseline.

The statement in the Further Information should nevertheless be treated carefully

Although I do not rely upon consultation as a standalone ground for refusal, I consider the statement that every query was answered should be addressed.

It is an absolute statement.

My contemporaneous evidence indicates otherwise.

I therefore ask the Commission not to rely upon that statement as evidence that all concerns raised directly with the Applicant were responded to unless the Applicant can substantiate it.

I have no difficulty with the Applicant stating that it undertook extensive engagement or responded to a large number of queries if that is supported by its records.

My concern is specifically with the categorical word “**every**”.

My request to the Commission

I ask the Commission to consider my documented experience of community engagement when assessing the Applicant's description of its consultation process.

In particular:

- I requested that a consultation clinic be held in Broadford, the community directly affected by the proposed development;
- I received no response to that request;
- I recorded that fact in my October 2024 observation;
- the Applicant now states that **every query submitted by phone, text or email was answered**;
- those positions appear inconsistent;
- my original observation subsequently identified important site-specific information that had apparently not been captured by the Applicant's environmental baseline; and
- even after that information was supplied through the statutory planning process, I was not contacted regarding matters such as my private well or registered bat roosts.

I consider that this experience reinforces a broader point running throughout this response.

The people who live and farm around Knockshanvo possess relevant information about the receiving environment. Consultation provides an opportunity for that information to improve the environmental assessment.

In my case, I attempted to engage directly with the Applicant before making my statutory observation. I then provided detailed site-specific evidence through the planning process.

The important question now is not whether the Applicant can demonstrate that consultation events and communications occurred.

It is whether the **information generated through public participation has actually been considered and, where appropriate, incorporated into the assessment.**

For the reasons set out above, I do not consider that the Further Information fully resolves that concern.

13 Summary of Original Matters Still Unanswered

Having reviewed the Applicant's Further Information against the matters raised in my original observation, I acknowledge that FuturEnergy has provided a substantial amount of additional material.

Some matters have been clarified. Others have been addressed through further technical explanation, modelling or proposed mitigation.

However, the central issue for me is not simply whether the Applicant has produced a response under the same general headings as my observation. It is whether the **specific evidence and concerns I raised have actually been investigated and resolved**.

In a number of important areas, I do not consider that they have.

My private shallow well

I specifically identified the private shallow/open well supplying my home and my brother's home.

Approximately ten people depend upon this supply.

I also provided laboratory evidence demonstrating that the well has previously experienced serious microbiological contamination.

The Further Information contains a general assessment of private wells and groundwater pathways, but I cannot identify evidence that my actual well has been:

- inspected or surveyed;
- accurately mapped;
- characterised in terms of depth and construction;
- assessed to establish its source or recharge area;
- baseline sampled;
- assessed for water quantity or seasonal variation; or
- specifically considered against the combined Knockshanvo and Oatfield developments.

The Applicant therefore reaches a general conclusion concerning private water supplies without demonstrating that it understands the particular water supply about which I raised concern.

In my view, this remains a significant unresolved issue.

Eight unmapped springs

I informed the planning authority that there are **eight springs on approximately 18 acres of land which I farm with my brother.**

These springs did not appear to be identified in the Applicant's original assessment.

The Further Information provides substantial additional hydrological explanation, but I cannot identify evidence that these springs were subsequently located, surveyed or incorporated into the Applicant's hydrological model.

This is particularly relevant because the Applicant's own hydrogeological assessment recognises that groundwater in the area can discharge through springs, seeps and baseflow.

The existence of these springs therefore raises a legitimate question about the completeness of the local hydrological baseline.

That question remains unresolved.

Local flooding and runoff evidence

My original observation included photographs showing substantial flooding, runoff and visibly discoloured water in the Sallybank area on 5 March 2024.

The Applicant has explained its proposed drainage and sediment-control measures.

However, I cannot identify where the actual conditions demonstrated in my photographs were specifically examined against the Applicant's drainage model.

The issue is not whether the proposed development caused the flooding shown in those photographs—it plainly did not.

The photographs demonstrate how water actually behaves in the locality during significant rainfall.

I remain concerned that this site-specific evidence has not been used to test the assumptions underlying the proposed drainage system.

Two registered bat roosts at my home

I specifically identified **two bat roosts at my property which have been registered with Bat Conservation Ireland since 2015.**

I also explained that substantial numbers of bats emerge from these roosts during summer evenings.

The Applicant has undertaken extensive bat surveys and has provided additional information concerning collision risk, barotrauma, habitat, buffers, curtailment and monitoring.

However, I cannot identify evidence that my two actual roosts were subsequently:

- verified;
- surveyed;
- assessed for species;
- assessed for roost type or importance;
- considered in relation to commuting and foraging routes; or
- incorporated into the cumulative Knockshanvo/Oatfield assessment.

No ecologist contacted me to request access, which I would have facilitated.

The general conclusion that bat impacts can be mitigated therefore does not, in my view, resolve the specific omission I identified.

Birds observed around my home and farm

I provided first-hand observations and, in some instances, photographs concerning protected birds using the wider area, including Hen Harrier and Kestrel.

The Applicant has undertaken an extensive ornithological survey programme, and I acknowledge that the Further Information addresses many of the general bird-related concerns.

However, uncertainties remain concerning:

- displacement beyond the physical development footprint;

- cumulative displacement associated with Knockshanvo and Oatfield;
- acknowledged limitations in vantage-point visibility;
- collision-risk modelling;
- Snipe and Woodcock activity outside daylight survey periods;
- nocturnal and crepuscular species in the context of aviation lighting; and
- how credible long-term local observations have been incorporated into the ecological baseline.

I therefore consider that the cumulative implications for birds using the wider landscape remain a matter requiring careful consideration by the Commission.

Noise at my home

The Applicant predicts that Knockshanvo can operate within the relevant noise limits, including cumulatively with other wind farms.

I acknowledge the technical modelling.

However, my original concerns are not completely resolved because important practical questions remain regarding:

- whether the background noise data used are genuinely representative of the acoustic environment at my home;
- the combined operational noise from Knockshanvo and Oatfield;
- amplitude modulation and other potentially intrusive noise characteristics;
- low-frequency noise complaints;
- the margin between predicted levels and applicable limits; and
- most importantly, how responsibility would be established and enforcement undertaken where measured noise at my home contains contributions from more than one wind farm.

The Applicant's prediction of compliance does not itself resolve this practical enforcement problem.

Shadow flicker

The Applicant has provided additional information concerning shadow-flicker modelling and proposes SCADA-based turbine control.

I acknowledge that this technology should be capable of preventing shadow flicker at affected dwellings.

My remaining concern is therefore primarily about implementation.

The Commission should be satisfied that my dwelling and every potentially affected dwelling have been correctly identified, that cumulative exposure from Knockshanvo and Oatfield has been accurately assessed, and that mitigation will be programmed before operation rather than relying upon residents repeatedly experiencing the effect and making complaints.

Where turbine control can prevent the effect, I consider that the objective for existing homes should be **zero shadow flicker**.

Cumulative effects

The Applicant has undertaken cumulative assessments under a number of environmental headings.

However, I remain concerned that these separate assessments do not fully capture the **combined long-term effect upon my home and locality**.

If Knockshanvo and Oatfield both proceed, approximately 20 large turbines would occupy the same wider upland landscape.

My family could potentially experience the combined effects of:

- operational noise;
- shadow flicker;
- turbine visibility;
- aviation lighting;
- forestry clearance;
- ground disturbance and drainage;
- construction activity;
- ecological change; and
- continuing concern regarding our private drinking-water supply.

The fact that each effect can be placed in a separate technical chapter does not mean that residents experience them separately.

Land and future residential use

My original observation raised concern regarding the potential effect of the development upon family land and its future residential use.

The Applicant has responded to property-value concerns, but that is not the same issue.

I fully accept that ownership of land does not create an entitlement to planning permission for a future dwelling.

Nevertheless, the introduction of large turbines, associated noise contours, shadow-flicker considerations and other amenity constraints may create an additional long-term planning restriction affecting family land.

I cannot identify where this distinction has been substantively addressed in the Further Information.

Community consultation

My original observation recorded that I contacted FuturEnergy requesting a public consultation clinic in Broadford and received no response.

The Applicant now states that:

“Every query submitted, whether by phone, text or email, was answered.”

My contemporaneous account appears inconsistent with that categorical statement.

This issue should be capable of objective verification from the Applicant's correspondence records.

Although I do not rely upon consultation shortcomings as a standalone reason for refusal, the issue is relevant because more effective local engagement could have identified matters such as my well, springs and registered bat roosts at an earlier stage.

The common issue running through these matters

There is a recurring pattern across several of the concerns I raised.

The Applicant has frequently responded to the **general subject matter**, but I cannot identify an equivalent response to the **specific receptor or evidence I supplied**.

For example:

Evidence supplied in my original observation	Further Information position	Remaining issue
Private shallow well serving approximately 10 people	General private-well/hydrogeological assessment	My actual well does not appear to have been investigated or baseline assessed
Eight springs on land I farm	General hydrological assessment	Springs do not appear to have been surveyed or incorporated
Photographic evidence of local flooding/runoff	Drainage and sediment-control measures described	Actual observed flow conditions do not appear to have been tested against the assessment
Two registered bat roosts at my property	Extensive general bat assessment and mitigation	Roosts do not appear to have been verified, surveyed or assessed
Local observations of protected birds	Extensive ornithological assessment	Questions remain concerning local evidence, survey limitations and cumulative effects
Concern regarding noise at my home	Predicted compliance with noise limits	Cumulative attribution and practical enforcement remain unresolved
Shadow flicker at homes	Modelling and SCADA mitigation	Need for receptor-specific verification and effective zero-flicker control
Future use of family land	Response concerning property values	Future residential planning constraint is a different issue and remains unanswered
Unanswered request for local consultation	Claim that every query was answered	Apparent factual inconsistency remains unresolved

This distinction is central to my response.

Further Information should resolve identified gaps, not simply restate conclusions

The purpose of Further Information should be to provide the decision-maker with the information necessary to determine the application.

Where observations identify a potential omission from the environmental baseline, I consider that the appropriate response is to investigate that omission.

The investigation may ultimately demonstrate that it makes no material difference.

For example, investigation might establish that my well has no plausible hydrological connection with the proposed works, or that bats from my property do not commute towards the development.

If properly demonstrated, such findings would directly address my concerns.

What I find difficult to accept is reaching those conclusions **without first investigating the receptor that gave rise to the concern.**

The burden should not be transferred to residents after permission is granted

A number of the Applicant's responses ultimately rely upon:

- construction-phase monitoring;
- pre-construction surveys;
- operational monitoring;
- complaint procedures;
- adaptive mitigation; or
- corrective action if an effect subsequently occurs.

All of these measures can have an appropriate role.

However, they should not be used to defer matters that can reasonably be investigated **before the Commission makes its decision.**

Once turbines, roads and foundations are constructed, the position changes fundamentally.

If an unforeseen effect then occurs, the resident must establish the problem and seek a remedy against an existing operational development.

Where information is already available that allows a potential issue to be investigated before consent, I consider that investigation should occur now.

My overall position following the Further Information

I have tried throughout this response to acknowledge where the Applicant has provided useful clarification.

I do not maintain every concern simply because I raised it in my original observation.

The Further Information is extensive and addresses many of the issues raised by observers.

However, after reviewing it, I remain concerned that several of the matters most directly relevant to **my own home, drinking water, land and local environment have not been individually investigated.**

These are not minor or abstract matters.

They concern:

**the water my family drinks;
the springs and drainage on land I farm;
known bat roosts at my home;
protected wildlife I observe locally; and
the long-term acoustic, visual and residential environment in which my family will live.**

I therefore ask the Commission to distinguish carefully between an issue having been **mentioned in the Further Information** and that issue having been **resolved by evidence.**

In my view, several of the most important site-specific matters raised in my original observation remain unresolved.

They should be considered together with the more detailed arguments set out in Sections 3 to 12 when the Commission determines whether it has sufficient information to conclude that the proposed development, individually and cumulatively, will not result in unacceptable effects upon my home, family, land and the surrounding environment.

14 Conclusion and Request to An Coimisiún Pleanála

I made my original observation because I was concerned about what the proposed Knockshanvo Wind Farm could mean for my home, my family, the land I farm and the wider area in which we live.

I have now considered the Applicant's Further Information in light of those concerns.

I acknowledge that FuturEnergy has submitted a substantial volume of additional material and has responded to many of the issues raised by observers and prescribed bodies. I also acknowledge throughout this response where additional information or mitigation has clarified aspects of the original application.

However, having reviewed the Further Information, I do not consider that it adequately resolves a number of the concerns I raised.

My principal concern following the Further Information

The most significant issue for me is the difference between responding to a **general category of concern** and investigating the **specific evidence supplied by a resident**.

My original observation identified matters which were capable of being checked.

These included:

- my family's old shallow private well, supplying approximately ten people;
- laboratory evidence showing that this water supply has previously experienced serious microbiological contamination;
- eight springs on approximately 18 acres of land which I farm with my brother;
- photographs demonstrating local flooding, runoff and sediment movement;
- two bat roosts at my property which have been registered with Bat Conservation Ireland since 2015;
- observations and photographs of protected birds using the area around my home and farm; and
- correspondence concerning my unsuccessful attempt to have a public consultation clinic held in Broadford.

The Further Information contains extensive responses concerning private wells, hydrology, bats, ornithology and community consultation.

However, in several instances I cannot identify evidence that the **particular receptor or evidence I identified was subsequently investigated**.

That remains my central concern.

My drinking-water supply should not remain an assumption

The clearest example is my family's drinking-water supply.

Approximately ten people depend upon this one shallow well.

The Applicant's hydrological consultants conclude generally that private wells will not be significantly affected, relying upon the nature of the aquifer, separation distances, groundwater pathways and mitigation.

However, as far as I can establish, nobody acting for the Applicant has inspected my well, established its construction or depth, investigated its source or recharge area, sampled it or established a baseline for its quality and quantity.

I do not consider that a general hydrogeological conclusion provides the same level of protection as an assessment of the **actual drinking-water source which I specifically identified**.

The consequences of an incorrect assumption in this regard would be borne by my family and my brother's family.

The hydrological baseline remains a concern

The eight springs I identified raise a related concern.

I know these springs because I farm the land.

If eight springs on one relatively small holding were absent from the Applicant's baseline, I believe it is reasonable for the Commission to ask whether the local shallow hydrological environment has been fully characterised.

The photographs I supplied of actual runoff and flooding reinforce that concern.

The Applicant has designed an extensive drainage and sediment-control system, but the effectiveness of such mitigation depends upon an accurate understanding of the receiving environment.

The two registered bat roosts should have been investigated

The same principle applies to bats.

I informed the planning authority that there are two registered bat roosts at my property.

I would have facilitated reasonable access if the Applicant's ecologists wished to verify those roosts, establish the species involved or investigate commuting and foraging behaviour.

Nobody contacted me.

I therefore find it difficult to accept that a general conclusion based upon the Applicant's original bat survey programme fully resolves the additional evidence I supplied.

The existence of the roosts does not prove that Knockshanvo will have a significant effect upon those bats.

But that question should have been investigated rather than assumed.

I remain concerned about the cumulative residential environment

My concerns also extend beyond individual environmental receptors.

My home is located approximately 1 km from the proposed Knockshanvo development and approximately 800 metres from the proposed Oatfield development.

If both proceed, approximately **20 large turbines** would occupy the same wider upland landscape.

For my family, these developments cannot realistically be experienced as separate planning applications.

We would experience the combined environment created by them.

That potentially includes:

- operational turbine noise;
- shadow flicker;
- turbine visibility;
- aviation lighting;
- forestry removal;
- altered landscape character;
- construction activity;
- drainage and ground disturbance; and
- effects upon wildlife moving through the wider area.

The Applicant has undertaken cumulative assessments under individual technical headings.

However, I ask the Commission also to consider the **overall long-term effect upon the residential environment**, rather than simply whether each individual effect remains below a separate technical threshold.

Prediction must be accompanied by effective protection

A recurring feature of the Further Information is reliance upon modelling, mitigation and future monitoring.

These are necessary components of environmental assessment.

However, they also highlight an important issue for residents.

If the predictions prove incorrect, the development will already have been constructed.

This is particularly relevant to noise.

If Knockshanvo and Oatfield both operate and unacceptable wind-turbine noise is subsequently experienced at my home, identifying how much is attributable to each development may be technically difficult.

A planning condition is only meaningful if it can be effectively monitored and enforced.

Similarly, if shadow flicker occurs, if a private water supply deteriorates or if unexpected ecological effects arise, residents need more than a requirement that the matter be monitored.

There must be an effective means of preventing and remedying the effect.

Where an issue can reasonably be investigated before consent, I believe that should occur before permission is granted rather than being deferred to post-consent monitoring.

I have tried to distinguish genuine outstanding issues from matters that have been clarified

I want to emphasise that this response is not intended simply to repeat my original observation.

I have considered the Further Information and have acknowledged where the Applicant has provided additional explanation or mitigation.

For example, I recognise that:

- substantial additional technical information has been provided;
- cumulative assessments have been undertaken;
- the Applicant proposes SCADA control for shadow flicker;
- detailed noise modelling has been undertaken;
- extensive bird and bat survey programmes have been completed;
- drainage and pollution-control measures are proposed; and
- post-construction monitoring and adaptive mitigation are proposed in a number of areas.

My continued concerns therefore arise not because the Applicant has provided no response.

They arise because I do not consider that the additional information resolves the particular uncertainties relevant to my home and locality.

Public participation should have resulted in the baseline being checked

One of the reasons the planning process allows observations from the public is that people living in an area may possess information not captured by an Applicant's consultants.

That occurred in my case.

I identified a well, springs, registered bat roosts and local environmental conditions.

I do not suggest that information supplied by a resident should automatically override professional technical evidence.

It should, however, be investigated where it is relevant and capable of verification.

The result might confirm the Applicant's conclusions.

If so, that would strengthen the assessment.

What concerns me is that several of these matters appear not to have been investigated at all.

The Commission should be satisfied that it has sufficient information before making its decision

I therefore ask the Commission to consider whether it has sufficient information to reach the conclusions required before granting permission.

In particular, I ask it to consider whether it can be satisfied regarding:

- the protection of my family's shallow private drinking-water supply;
- the completeness of the local hydrological baseline;
- the significance of the eight unmapped springs I identified;
- the implications of the two registered bat roosts at my property;
- the cumulative effects upon protected birds and bats using the wider landscape;
- cumulative operational noise at my home;
- the practical enforceability of noise limits where more than one wind farm contributes;
- effective prevention of shadow flicker at existing dwellings;
- the cumulative landscape and night-time effects of Knockshanvo and Oatfield;
- the overall protection of residential amenity; and
- whether the site-specific evidence supplied through public participation has been adequately incorporated into the environmental assessment.

These matters concern existing receptors and existing environmental conditions. They are not hypothetical future features of the area.

My request to An Coimisiún Pleanála

Having considered the Further Information, **I remain opposed to the proposed Knockshanvo Wind Farm and I respectfully request that An Coimisiún Pleanála refuse permission.**

I make that request having regard to the matters set out in my original observation and the unresolved issues identified in this response.

In particular, I do not believe the Further Information provides sufficient certainty regarding the protection of my private drinking-water supply, the completeness of the hydrological and ecological baseline, the cumulative effects of Knockshanvo and Oatfield, and the long-term protection of my family's residential amenity.

If the Commission does not agree that these matters warrant refusal, I ask that it should **not simply defer the unresolved issues to post-consent monitoring or future agreement with the Applicant.**

At a minimum, the site-specific matters I have identified should be properly investigated before a final decision is made.

That should include, in particular:

1. identification, inspection and hydrogeological assessment of my private shallow well, including an appropriate baseline for water quality and quantity;
2. investigation and mapping of the eight springs identified on the land I farm;
3. consideration of the local runoff and flooding evidence supplied in my original observation;
4. verification and appropriate ecological assessment of the two registered bat roosts at my property;
5. confirmation that the cumulative Knockshanvo/Oatfield assessments adequately reflect those additional receptors;
6. clear and enforceable arrangements for cumulative operational noise, including attribution where more than one wind farm contributes to measured noise at a dwelling; and
7. effective turbine-control arrangements preventing shadow flicker at affected existing homes.

These are matters which can be investigated now.

In my view, it would be preferable to resolve them **before permission is granted** rather than leaving residents to establish after construction that an assumption in the assessment was incorrect.

Final position

I have lived in this area for approximately twenty years. My family lives here, I farm here and I expect to continue living here.

I recognise the national importance of renewable energy and the need to respond to climate change. My objection is not to renewable energy in principle.

However, national renewable-energy objectives do not remove the requirement to ensure that an individual development is appropriate for its particular location and that existing residents and the environment are adequately protected.

The question before the Commission is therefore not whether wind energy is desirable in general.

It is whether **this particular development, at this particular location and in combination with the other major wind-energy development proposed immediately beside it, has been demonstrated to be environmentally acceptable.**

Having reviewed the Further Information, I do not believe that demonstration has been made with sufficient certainty.

Several of the matters closest to my own home and family remain unresolved despite having been specifically identified in my original observation.

For those reasons, and for the reasons set out in my original observation and throughout this response, **I respectfully request that An Coimisiún Pleanála refuse permission for the proposed Knockshanvo Wind Farm.**

15 Overall Conclusion

Having considered the Further Information submitted by FuturEnergy against the concerns and evidence contained in my original observation, I remain of the view that the proposed Knockshanvo Wind Farm should not be granted permission.

The Applicant has provided additional technical assessments, explanations and mitigation measures. My concern is not that the Applicant has failed to respond to the broad topics raised by observers.

My concern is that **some of the matters most directly relevant to my home, my family and the land I farm remain unresolved.**

In particular, I remain concerned that specific information I supplied through the planning process does not appear to have resulted in corresponding site-specific investigation. This includes my family's shallow private drinking-water supply, the eight springs on land I farm, the two registered bat roosts at my property and evidence of local hydrological and wildlife conditions.

These are existing and identifiable receptors. They are not theoretical concerns.

My private well supplies approximately ten people. The two bat roosts at my property have been registered with Bat Conservation Ireland since 2015. The springs physically exist on land I farm. The flooding, runoff and wildlife observations described in my original submission are based upon conditions I have personally observed while living and farming in this area.

I do not suggest that my observations should replace professional environmental assessment. My concern is precisely the opposite: **the information I supplied should have been professionally investigated and used to test the Applicant's assessment.**

In several instances, I cannot see that this happened.

Instead, the Further Information frequently provides a detailed response to the general subject — private wells, hydrology, bats, birds or noise — without demonstrating that the particular receptor I identified has been examined.

That distinction is important.

A general conclusion that private wells will not be significantly affected does not fully answer my concern where the nature and recharge characteristics of my particular shallow well have not been established.

An extensive bat survey programme does not fully answer the discovery of two known registered roosts which were apparently absent from the original baseline.

A detailed hydrological model does not remove the relevance of springs and actual flow conditions identified by somebody farming the land.

The cumulative situation remains particularly concerning

I am also concerned about the way in which the overall effect of development in this area is assessed.

My family would not experience Knockshanvo in isolation.

My home is approximately 1 km from the proposed Knockshanvo development and approximately 800 metres from the proposed Oatfield development. If both projects proceed, approximately **20 large turbines** would occupy the same wider upland landscape close to my home.

From the perspective of somebody living here, the planning boundaries between the two developments have little practical meaning.

We would experience the resulting environment as a whole.

That includes the potential combined effects of turbine noise, shadow flicker, turbine visibility, aviation lighting, forestry removal, construction activity, drainage and ground disturbance and effects upon wildlife.

I acknowledge that the Applicant has undertaken cumulative assessments under individual technical headings. However, I remain concerned that those separate calculations do not fully capture the **overall long-term change to the residential environment**.

The turbines, if constructed, would remain part of that environment for decades.

Prediction and monitoring do not provide the same protection as prevention

A further concern running through the Further Information is the degree of reliance placed upon modelling, future monitoring and adaptive mitigation.

Modelling is clearly necessary before a development exists, and monitoring and adaptive mitigation can provide important safeguards.

However, they should not be used to postpone investigation of matters which can reasonably be established before permission is granted.

If an unidentified problem emerges after construction, the circumstances are fundamentally different. The turbines, roads and foundations will already exist and nearby residents will then carry the burden of demonstrating the problem and seeking corrective action.

This is particularly concerning in relation to my drinking-water supply.

If there is uncertainty regarding the source, recharge or vulnerability of a shallow well supplying approximately ten people, I believe that uncertainty should be resolved **before substantial construction and drainage works take place**, rather than establishing a baseline after permission has been granted.

The same principle applies to the registered bat roosts I identified.

My position following the Further Information

I have tried in this response to be fair to the additional material submitted by FuturEnergy.

Where the Further Information provides useful clarification, I have acknowledged it. I have not attempted simply to reproduce my original observation or maintain every argument regardless of the Applicant's response.

However, after reviewing the material, I remain concerned about:

- the protection of my family's private shallow drinking-water supply;
- the completeness of the hydrological baseline and the eight unmapped springs;
- local flooding and runoff conditions;
- the two registered bat roosts at my home;
- protected birds and wildlife using the wider landscape;

- cumulative operational noise and its practical enforcement;
- shadow flicker and the need for effective prevention at existing homes;
- the cumulative effect of Knockshanvo and Oatfield;
- the long-term effect upon my home, land and residential amenity; and
- the extent to which site-specific evidence supplied through public participation has actually been incorporated into the assessment.

These concerns are interconnected.

They relate ultimately to whether the Commission can be satisfied that the Applicant has sufficiently understood the receiving environment and demonstrated that the development will not cause unacceptable effects.

My request to the Commission

On the information presently before the Commission, **I do not believe that sufficient certainty has been demonstrated.**

I therefore respectfully request that An Coimisiún Pleanála **refuse permission for the proposed Knockshanvo Wind Farm.**

If the Commission is not minded to refuse permission on the information currently before it, I consider that the unresolved site-specific matters identified in this submission should at least be investigated **before any final decision is made**, rather than being deferred to post-consent surveys, monitoring or future agreement.

I recognise the importance of renewable energy and Ireland's need to reduce carbon emissions. However, supporting renewable energy does not require every proposed wind farm to be considered acceptable irrespective of its particular location or cumulative effects.

The planning process must determine whether **this development, in this location, alongside the other development proposed around it, can be accommodated without unacceptable consequences for the environment and the people who already live there.**

For my family, these are not abstract planning issues.

This is our home. It is the water we drink, the land we farm and the environment in which our children are growing up.

Having considered the Applicant's Further Information, **I remain of the view that the outstanding uncertainties are too significant to justify granting permission for the proposed development.**

In conclusion, I hope that you consider the information that I have provided in making your decision.

Kind regards.

Yours sincerely,

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