

Lauren Murphy
An Coimisiún Pleanála
64 Marlborough Street
Dublin 1
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BY EMAIL

10 July 2026

Your Reference Number: ABP-320705-24

Re: Proposed development of 9 no. wind turbines, 110kV substation and ancillary development located in the townlands of Snatty, Hurdlestown, Oatfield, Drumsillagh, Sallybank, Gortacullin, Aharinaghbeg, Knockshanvo, Cloontra, Cloghoolia, Ballycullen and others, County Clare. And located in the townland of Court, County Limerick.

Dear Ms Murphy

We refer to your correspondence dated 22 June 2026 in respect of the above-mentioned application and An Coimisiún Pleanála's request for a submission based on the correspondence received from FuturEnergy Knockshanvo DAC (the "**Developer**").

Below is AirNav Ireland's submission addressing the substantive issues raised by MHC.

Engagement with the Developer and other stakeholders

AirNav Ireland's technical experts have a long history of engagement in respect of this proposed wind farm development and proactively engaged with the Developer, and previous proponents of the wind farm since December 2021. That engagement took place with a view to addressing the concerns raised by AirNav Ireland, but ultimately AirNav Ireland has not been satisfied that mitigation of impacts is possible.

None of the information sought by the Developer in its correspondence is capable of supporting their proposals regarding any potential mitigations against the impact on AirNav Ireland's safety critical infrastructure. AirNav Ireland's competent technical experts, who are qualified in pursuant to the regulatory requirements under Regulation (EU) 2017/373, have previously explained to the Developer that no such mitigations exist. It should also be noted that to ascertain the effectiveness or otherwise of certain proposed mitigations that such evaluations would require significant operational disruption to the service that AirNav Ireland provides including the closure / restriction on the use of airspace within the vicinity of Shannon Airport and potentially Irish controlled airspace.

Request for ARTAS Data (FOI & AIE Request)

AirNav Ireland's position in relation to the ARTAS Data (as defined in the Developer's letter of 16 June 2026) is as follows:

1. The requested ARTAS Data was the subject of a Freedom of Information Act 2014 (the "**FOI Act**") and the European Communities (Access to Information on the Environment) Regulations 2007 (the "**AIE Regulations**") request which is currently subject to an appeal to the Office of the Commissioner for Environmental Information. Therefore, to avoid interfering with this statutory appeal process, AirNav Ireland are not in a position to comment on the merits of the request outside of that process. The request will be processed strictly in accordance with the applicable legislation. In addition, AirNav Ireland maintains that the information sought is not limited to publicly observable aircraft movements and cannot be extrapolated from civilian aviation data sources or redacted.
2. Without prejudice to the above position, the Developer's assertion that no information or reasons have been provided to the Developer in respect of its request for the ARTAS Data is, respectfully, incorrect. For clarity, the reference in our earlier correspondence to the sensitive nature of the information, including national security (military) operations, was made solely to explain why the information could not be provided. A detailed explanation was subsequently provided to the Developer following the above-mentioned requests. Furthermore, we note that the following sentence in the Developer's letter that "*ARTAS Data can be provided by AirNav in a form (redacted as necessary)*" is, respectfully, incorrect. It is not practicable to isolate, filter, redact or extract sensitive information from such data. Furthermore, identifying and filtering military/Garda data embedded within that radars' data is not practicable.
3. In any event, the requested ARTAS Data is **not required** to understand or assess the impacts of wind turbine developments on surveillance systems. AirNav Ireland's significant concern, as submitted on 15 July 2025, relates to the potential effect of radar signals on high-level enroute air traffic as a result of deflections from these wind farms reducing safety margins in our ATM service. Furthermore, as the Developers' consultants do not have the expertise or tools to analyse such data.

As outlined above AirNav Ireland has a significant history of raising its concerns, as far back as 2021, in relation to the proposed wind farm development at this location. AirNav Ireland has raised several separate, but highly relevant, technical concerns in its submission to An Coimisiún Pleanála dated 15 July 2025.

Climate Action and Low Carbon Development Act 2015

AirNav Ireland is acutely aware of its obligations under the Climate Action and Low Carbon Development Act 2015 ("the **Climate Act**") However, its provisions do not amend, override, or displace the statutory frameworks governing access to information under the FOI Act or the AIE Regulations.

AirNav Ireland is committed to maintaining environmental standards that align with the objectives of the Climate Action and Low Carbon Development Act, as well as the

requirements of ICAO, EUROCONTROL, the European Union, EASA and CANSO, and further information on AirNav Ireland's sustainability objectives and initiatives is available on its website¹.

Furthermore, as recognised by the Supreme Court in *Coolglass Wind Farm Limited v An Coimisiún Pleanála* [2026] IESC 5, is qualified by the phrase "in so far as practicable" which the Court found "*necessarily contemplates that there may be circumstances in which the relevant body may not be required to perform its functions in a manner consistent with the s. 15(1) objectives where it is not practicable to do so.*" In that regard, the Supreme Court rejected the interpretation of s. 15 as put forward by Coolglass and accepted by the High Court, as it would "*result in a strong presumption favouring the grant of permission for any renewable energy project, subject only to considerations of practicability and the exclusion of any other consideration.*"

This approach could not be accepted, and the court found that "*The question of consistency of an individual planning decision with the s. 15(1) objectives, is much more complex than a traffic light system of climate friendly 'go' (unless impracticable), and climate unfriendly 'stop'.*"

Whilst we understand that there is strong policy support domestically and at EU level, as reflected in legislation, this does not override countervailing factors in the consideration of such proposed developments, including significant adverse effects on the performance of AirNav Ireland's safety-critical ATM/ANS functional system and the impact on aviation safety.

Clear Evidence of Adverse Effects

The reason aviation is one of the safest forms of transport is not because risks do not exist. It is because every potential risk is identified, assessed, validated and controlled before it is accepted into operation by trained and regulatory approved competent personnel.

AirNav Ireland's experience of assessing the potential impacts from the proposed developments of Wind Farm in the vicinity of Woodcock Hill identifies several areas of our safety-critical ATM/ANS functional system, that can be affected, listed as follows and further expanded on below:

- Instrument Flight Procedures (IFPs);
- The Shannon Airport Runway 24 Instrument Landing System;
- surveillance and radar systems; and
- overall performance of the CNS infrastructure.

AirNav Ireland's technical evidence, that is supported by the Radar manufacturer Thales, is that the proposed turbines are likely to affect radar performance through increased false returns, reduced target detection capability, shadowing and multi-reflection effects, while also raising concerns regarding impacts on Instrument Landing Systems (ILS)

¹ [AirNav - Sustainability](#)

operations and future instrument procedure design. AirNav Ireland's position is that these impacts require detailed assessment and verification through the regulatory safety assurance process prescribed under Regulation (EU) 2017/373 before it can be demonstrated that acceptable levels of aviation safety will be maintained following the installation of wind turbines in the vicinity of the Woodcock Hill radar.

The potential impact of the proposed development on AirNav Ireland's radar surveillance system is not capable of being determined by reference to generic assumptions or standardised modelling alone. According to information provided by AirNav Ireland's radar supplier, Thales, the performance effects associated with wind turbine developments are dependent upon a range of operational and environmental variables, including turbine location, turbine orientation, prevailing wind conditions, radar configuration and local operating characteristics. As a consequence, the nature and extent of any interference may vary from site to site and cannot be assessed in the abstract.

Thales has further advised that mitigation measures may, in principle, be available through the implementation of wind farm filtering techniques. However, this is cautioned against, as the suitability and effectiveness of any such mitigation cannot be presumed and must be independently demonstrated through detailed, site-specific simulation and validation studies. There are operational limitations to the extent that such studies can be taken without significant operational impact and interruption to AirNav Ireland's service. The existence of a potential mitigation solution does not, of itself, establish that the operational impact on the surveillance system has been adequately addressed to remove the risk or to reduce the risk to aviation safety to a level that is acceptable to AirNav Ireland and ultimately the regulator for aviation safety, the Irish Aviation Authority.

While recognising these technological variables and the possibility that mitigation measures may be available, Thales has identified a number of potential effects where wind turbines are situated approximately 10 kilometres from the radar installation. It should be noted that the proposed development is located within the distance thresholds identified in EUROCONTROL guidance as requiring detailed assessment of potential impacts on surveillance radar performance, such as the radar at Woodcock Hill. The effect from installation of wind turbines within such distances of radar installations is likely to include an increase in false target generation, degradation of radar detection performance in the vicinity of the turbines and shadowing within areas of radar coverage. The extent to which such effects may arise, and whether they can be effectively mitigated, remains dependent on the particular characteristics of the installation and can only be determined following the completion of detailed technical assessment and validation, which can only be done by AirNav Ireland's Regulation (EU) 2017/373 competent technical experts assisted by Thales.

From an aviation safety and regulatory perspective, the assessment of the proposed development must take account of the inherent variability of radar performance where wind turbine structures are placed within the vicinity of radars. Any proposed mitigation must be demonstrated, through technical evidence assessed by AirNav Ireland's competent technical experts, who are qualified in pursuant to the regulatory requirements under Regulation (EU) 2017/373, to maintain the required level of surveillance performance and operational safety.

Woodcock Hill Radar

A meaningful analysis of the reported deflections issue has been prepared by IAA regulator certified AirNav Ireland's radar experts, titled "AirNav Surveillance description of Woodcock Hill Radar deflections 11 July 2025 (the **"Surveillance Document"**)". For completeness, and in consideration of the similarity in geographical range between Knockshanvo and Oatfield wind farm developments, please find enclosed the Surveillance Document relating to Oatfield. In fact, the TNO report submitted by the Ballycar developer as evidence to the ACP hearing on Ballycar, is an analysis which validates the reported deflections issue, without the use of AirNav Ireland's radar data. The fact the TNO report had to rely upon the Belgian ANSP "SKYES" to complete the radar data analysis to validate the TNO model, illustrates the futility of the request of the Developer for Woodcock hill radar data, as the developers' consultants do not have the expertise or tools to analyse such data. It also illustrates that other European ANSPs perform the analysis in house and share the results rather than sharing the ASTERIX radar data which cannot be released as it contains national security (military) information.

The Proposed Development is located from 5–9km from the Woodcock hill Secondary radar and all turbines are within direct line of sight of the radar.

Each turbine in the Proposed Development is an obstacle between the Woodcock Hill radar and aircraft whose position the radar is attempting to measure. As wind turbine obstacles are not transparent to the radar beam, there are three possible impacts:

- a) **Reflections:** the radar beam can be reflected off the turbine, generating additional false aircraft tracks.
- b) **Deflections:** the radar beam bends around the obstruction causing errors in the measured position of aircraft at long range.
- c) **Shadowing:** the radar beam is blocked by the turbine obstruction causing the loss of radar detection of aircraft in the shadow volume of airspace behind the turbine.

The above impacts can potentially degrade the performance of a radar at a distance of 16km. At a distance of 5–9km in line of sight of the Woodcock hill radar, it is the qualified analysis of AirNav Ireland's competent technical experts, that these impacts will arise as a result of the Proposed Development and will degrade the performance of the Woodcock Hill radar.

The specific radar performance aspects impacted by wind turbines are coverage, availability, accuracy and probability of detection. Coverage is reduced by shadowing. Availability is reduced by having to take the radar out of operational service to make changes and validate them. Accuracy is reduced by deflections and reflections. Probability of detection is reduced by shadowing, and by reflection and deflection filtering on the radar. These likely negative impacts to the operational environment prevent AirNav Ireland from being in a position to support the wind turbine development because AirNav cannot demonstrate that changes to the aviation environment remain as safe as before any potential change to the operating environment.

Instrument Landing Systems (ILS) / Instrument Flight Procedures (IFP)

The erection of a windfarm at Knockshanvo would endanger or interfere with the safety of aircraft and the safe and efficient navigation of aircraft in the vicinity of the Shannon Airport. The proposed windfarm turbines are an obstacle in the airspace that, due to its specific location and characteristics, presents a risk in particular to low-flying aircraft and the continued safe operation and verification of Instrument Landing System (ILS) procedures at Shannon Airport. Flight inspections are conducted by Flight Calibration Services (FCSL) under procedures approved by the Irish Aviation Authority (IAA). A key requirement of these procedures is that aircraft must remain at least 1,000 feet above the highest obstacle that is within 5 NM either side of the flight track. The current proposal to erect a windfarm at this location introduces this unmanaged hazard into the flight inspection environment. For the reasons set out in more detail **in the enclosed Appendix 1**, the erection of the windfarm at this location is incompatible with the continued safe and compliant operation of the Runway 24 instrument landing system (ILS) at Shannon Airport.

Conclusion

The reason aviation is one of the safest forms of transport is not because risks do not exist. It is because every potential risk is identified, assessed, validated and controlled before it is accepted into operation by trained and regulatory approved competent personnel. The applicant's aviation impact assessments attempt to demonstrate that mitigation may be possible. AirNav Ireland does not accept this proposition. AirNav Ireland has provided clear evidence that the proposed windfarm will cause significant and adverse impact on aviation safety through the interference of its functional system, being the IFPs, the Shannon Airport Runway 24 Instrument Landing System, surveillance radar systems. This assessment is based on AirNav Ireland's technical experts, the radar manufacture and taking account of externally determined safeguarding zones.

AirNav Ireland's legal obligation, as permitted by its certificate granted by its regulator, under EU 2017/373 is not to show that mitigations might work, but to demonstrate through evidence that the aviation system will remain as safe as it was before any proposed change to the functional system. The proposed development seeks to introduce significant adverse impacts that are not capable of being mitigated against by the applicant developer.

We trust the above is of assistance and would be happy to provide any further information that may be of assistance to the Commission in determining the application.

Yours sincerely,



Ewan Murtagh
Company Secretary

APPENDIX 1

Specific risk to aviation posed by the proposed wind farm development

The erection of a windfarm at Knockshanvo would endanger or interfere with the safety of aircraft and the safe and efficient navigation of aircraft in the vicinity of the Shannon Airport. The proposed windfarm turbines are an obstacle in the airspace that, due to its specific location and characteristics, presents a risk in particular to low-flying aircraft and the continued safe operation and verification of Instrument Landing System (ILS) procedures at Shannon Airport. Flight inspections are conducted by Flight Calibration Services (FCSL) under procedures approved by the Irish Aviation Authority (IAA). A key requirement of these procedures is that aircraft must remain at least 1,000 feet above the highest obstacle that is within 5 NM either side of the flight track.

1. By way of further elaboration on the aviation safety risk posed by the **proposed wind farm development** at this specific location, the Runway 24 Instrument Landing System (ILS) at Shannon Airport provides coverage in accordance with International Civil Aviation Organization (ICAO) Annex 10 requirements. Flight inspections must be carried at least every 180 days to maintain continued compliance with ICAO standards. Local requirements of these standards are set out by the Irish Aviation Authority (IAA), through its procedures for operating in Instrument Meteorological Conditions (IMC). Where these checks are not completed, or where parameters fall outside permitted limits, the ILS must be withdrawn from active service.
2. Flight inspections are conducted by Flight Calibration Services (FCSL) under IAA-approved procedures (Flight Inspection Procedures – 23). A key requirement of these IMC procedures is that aircraft must remain at least 1,000 feet above the highest obstacle that is within 5 NM either side of the flight track.
3. FCSL complete an assessment of the impact of the Knockshanvo Windfarm development on the flight check profiles. For the slice, 6NM part orbit and left slice 8° profiles, the proposed wind farm would require that these profiles are flown at higher altitudes in IMC to provide sufficient clearance above the proposed wind turbines. The flight inspection Glide Path left slice 8° profile (level run) would have to be raised to an altitude of 2,600ft in IMC to provide the flight inspection aircraft adequate clearance over the proposed wind turbines.
4. This would represent a deviation from ICAO-recommended inspection profiles. Any such deviation would require formal regulatory approval from the IAA, including a notification of change to the ILS functional system by AirNav Ireland.
5. However, this is not simply a matter of seeking regulatory approval. The flight inspection profiles form part of the approved functional system supporting the ILS and are reflected within the AirNav Ireland Safety Case. Under EU Regulation 2017/373² Safety Case requirements, any change to the system must demonstrate that it is at least as safe as it was before.

² Commission Implementing Regulation (EU) 2017/373 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight.

6. In this instance, the requirement to deviate from ICAO-defined flight inspection profiles is not driven by operational necessity but arises solely due to the presence of a third-party structure. The introduction of such a constraint would require a departure from internationally accepted inspection standards for the pre-existing Category II ILS serving Shannon Airport, with no established precedent for maintaining equivalent levels of safety assurance.
7. FCSL have confirmed to AirNav Ireland that they have no prior experience of adjusting inspection procedures for a Category II ILS due to obstacles of this nature. The only comparable case was in Portugal which resulted in inspection activity being restricted to Visual Meteorological Conditions (VMC), which, as outlined below, is not operationally viable in the Shannon environment.
8. There is no assurance that regulatory approval for non-standard inspection profiles would be granted. Furthermore, even if approval were sought, AirNav Ireland would be required to demonstrate that the modified inspection regime provides a level of safety assurance equivalent to that achieved through standard ICAO-defined profiles. No such demonstration has been made, and it is not evident that this equivalence can be achieved.
9. In the event that mitigation measures (such as an increased glide path angle) were required in order to facilitate the windfarm, the Runway 24 ILS would lose its IAA certified operations of the ILS to the level ICAO standard CAT II. This would significantly impact Shannon Airport operations, as low visibility landings would no longer be possible. Restricting flight inspections to Visual Meteorological Conditions (VMC) would not be operationally viable, as the prevailing weather conditions at Shannon Airport (CAT II ILS RWY 24 is required for 30% of operations each calendar year) frequently require IMC procedures to be used.

Accordingly, it is the view of AirNav Ireland and FCSL that the erection of the proposed wind farm development would introduce a direct safety and regulatory compliance risk to the continued operation of the pre-existing Runway 24 ILS. It would necessitate a departure from approved ICAO-aligned inspection procedures, resulting in AirNav Ireland having no evidential basis upon which it could demonstrate that modified inspection profiles provide equivalent assurance to the ICAO-recommended profiles. This would directly undermine the basis of the existing EU Regulation 2017/373 Safety Case, and could not be demonstrated to maintain a level of safety that is "as safe as it was before."

10. On this basis, the erection of the proposed wind farm development as proposed by the Developer is incompatible with the continued safe and compliant operation of the Runway 24 Category II ILS at Shannon Airport.