TECHNICAL REVIEW OF THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PROPOSED LEMANAGHAN WIND FARM DEVELOPMENT

COUNTY OFFALY

Planning Submission to

An Coimisiún Pleanála

An Coimisiún Pleanála - Case reference: PAX19.324161

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Contents

Executive Summary

This submission presents a structured technical review of selected aspects of the EIAR prepared for the proposed Lemanaghan Wind Farm development, with particular focus on:

1. Human health and environmental exposure,
2. Telecommunications and emergency-service communications resilience,
3. Aviation interaction,
4. Cultural heritage and landscape impact,
5. Mitigation and monitoring governance.

The review has been undertaken from an engineering systems-governance and environmental risk-management perspective. The principal concern is not opposition to renewable energy development in principle, but whether the EIAR demonstrates sufficiently robust, transparent and independently verifiable assessment methodologies to adequately address residual uncertainty associated with a development of the proposed scale.

While the EIAR contains substantial technical documentation, several areas do not presently appear to be fully quantified or operationally verified under worst-case conditions, particularly in relation to:

1. Low-frequency noise and infrasound,
2. E-service communications resilience,
3. Cumulative cultural landscape effects,
4. Long-term mitigation assurance.

Particular concern arises where conclusions appear reliant upon:

1. Future-stage mitigation,
2. Contractor-led controls,
3. Operational monitoring,
4. Post-consent agreement,

without equivalent clarity regarding:

1. Measurable trigger thresholds,
2. Independent compliance verification,

3. Corrective-action procedures,
4. Enforceable remediation mechanisms.

The review also identifies residual uncertainty regarding:

1. Telecommunications and microwave path interference,
2. Emergency-service interoperability,
3. Aviation interaction,
4. Wider archaeological and heritage landscape associated with Clonmacnoise.

Accordingly, this submission respectfully contends that further clarification, quantified assessment and independently verifiable mitigation detail may be required before the Board can be satisfied that the proposed development has been comprehensively assessed in accordance with the evidential and precautionary standards underpinning Irish and European environmental assessment and planning law.

1. Scope and Methodology of Review

This review has been undertaken following a structured assessment of the EIAR documentation and supporting appendices associated with the proposed Lemanaghan Wind Farm development. The review focuses on:

i. Evidential sufficiency,

ii. Operational and environmental risk,

iii. Cumulative effects,

iv. Infrastructure resilience,

v. Mitigation enforceability,

vi. Residual uncertainty,

having regard to relevant Irish and European environmental assessment guidance, planning policy and judicial precedent.

Particular attention has been given to:

i. Telecommunications and emergency-service communications resilience;

ii. Aviation and electromagnetic interaction;

iii. Low-frequency noise and infrasound assessment;

iv. Cultural heritage and wider landscape-setting effects;

v. Extent to which mitigation measures rely upon future-stage controls, operational monitoring or post-consent agreement rather than demonstrably quantified and independently verifiable mitigation.

The review has been prepared from an engineering systems-governance and environmental risk-management perspective.

2. Key Strategic Concerns Summary

Table 2.1 below summarises the principal strategic and operational governance concerns identified during the review process, with particular regard to residual uncertainty, infrastructure resilience, mitigation enforceability and long-term operational assurance.

Table 2.1: Summary of the principal strategic and operational governance concerns identified

Strategic Risk Area	Principal Concern	Operational / Governance Gap	Potential Consequence	Recommended Governance Response
Telecommunications Resilience	Residual uncertainty regarding telecommunications and communications-system resilience	Operational modelling and resilience verification not fully demonstrated	Potential degradation of communications reliability	Independent telecommunications resilience assessment
Emergency-Service Communications	Potential interference with emergency-service and operational communications infrastructure	Limited evidence of worst-case operational testing and inter-operability validation	Reduced emergency communications reliability during operational incidents	Independent assessment of emergency-service communications systems
Low-Frequency Noise & Infrasound	Limited quantified assessment of low-frequency acoustic effects and infrasound	Narrow-band analysis, atmospheric stability modelling and indoor assessment not fully demonstrated	Residual uncertainty regarding perceptibility and operational nuisance effects	Detailed low-frequency and infrasound assessment framework
Deferred Mitigation Dependency	Reliance on future-stage mitigation, contractor-led controls and post-consent operational management	Final mitigation effectiveness dependent on future operational implementation	Reduced certainty regarding mitigation delivery and enforceability	Demonstrate mitigation effectiveness prior to consent
Monitoring & Corrective Action	Incomplete definition of monitoring thresholds and escalation procedures	Trigger thresholds, exceedance criteria and corrective-action protocols not consistently defined	Monitoring may not result in effective operational intervention	Define measurable thresholds and enforceable response procedures

Strategic Risk Area	Principal Concern	Operational / Governance Gap	Potential Consequence	Recommended Governance Response
Cultural Landscape & Heritage Setting	Potential underassessment of cumulative cultural landscape and heritage-setting effects	Wider heritage landscape interaction not fully quantified	Long-term alteration of landscape character and heritage setting	Integrated cultural landscape and cumulative visibility assessment
Mitigation Assurance	Lack of independently verifiable mitigation assurance and compliance auditing	Compliance verification and accountability structures unclear	Residual uncertainty regarding operational compliance	Independent compliance auditing framework
Aviation & Radar Interaction	Residual uncertainty regarding aviation interaction, radar clutter and rotating-blade effects	Operational aviation interaction modelling not fully substantiated	Potential aviation safeguarding and radar interaction concerns	Independent aviation and radar interaction assessment
Electromagnetic Interaction	Limited operational verification of telecommunications, microwave path and electromagnetic interaction modelling	Real-world operational validation and post-construction testing not clearly defined	Residual operational interference uncertainty	Post-commissioning validation and monitoring regime
Environmental Governance	Cumulative operational effects and governance arrangements not fully consolidated into an integrated assurance framework	Fragmented monitoring and governance responsibilities	Reduced long-term oversight and operational accountability	Integrated environmental governance and assurance framework

3. Main Technical Sections and Further Information Requested

3.1 Population and Human Health

3.1.1 Human Health, Infrasound and Electromagnetic Exposure

From an engineering risk-governance perspective, the principal concerns outlined in **Table 3.1** are not the assertion of proven harm, but whether the EIAR demonstrates sufficiently robust characterisation, monitoring, verification and corrective-action procedures to manage residual uncertainty associated with low-frequency acoustic and electromagnetic exposure.

Table 3.1: Human Health, Infrasound and Electromagnetic Exposure Review

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Human Health Assessment	EIAR references compliance with standard operational noise criteria	Compliance with overall dB(A) limits may not fully assess low-frequency acoustic characteristics	Low-frequency and infrasound effects may not be fully characterised under worst-case conditions	Clarify assessment methodology for low-frequency and infrasound effects	Chapter 05; Chapter 12; WHO Environmental Noise Guidelines; EPA EIAR Guidelines 2022
Turbine Scale	Proposed turbines significantly exceed dimensions associated with earlier Irish wind guidance assessments	Historic guidance may not fully reflect current turbine scale and rotor characteristics	Applicability of older acoustic assumptions to modern turbine dimensions remains unclear	Demonstrate applicability of assessment methodology to current turbine scale	Wind Energy Development Guidelines 2006; Chapter 12
Low-Frequency Noise	Standard operational noise modelling referenced	Low-frequency frequency bands may not have been independently analysed	Potential night-time perceptibility and propagation uncertainty	Provide narrow-band frequency analysis and spectral assessment	WHO Environmental Noise Guidelines; ISO 7196; Chapter 12
Infrasound	No clear evidence of dedicated infrasound assessment methodology identified	Infrasound and periodic acoustic characteristics may not have been separately quantified	Scientific uncertainty remains regarding perceptibility and annoyance thresholds	Provide detailed infrasound assessment methodology and assumptions	ISO 7196; WHO Night Noise Guidelines; EPA EIAR Guidelines 2022
Indoor Assessment	External compliance assessment appears prioritised	Internal low-frequency exposure assessment not clearly identified	Indoor resonance/perceptibility effects may not have been assessed	Confirm whether indoor low-frequency measurements or modelling were undertaken	WHO Night Noise Guidelines; ISO 7196
Cumulative Exposure	General cumulative assessment referenced	Combined acoustic exposure from multiple operational sources may not be fully quantified	Long-term cumulative annoyance and perceptibility uncertainty	Provide cumulative low-frequency and modulation assessment	EPA EIAR Guidelines 2022; WHO Environmental Noise Guidelines

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Complaint Management	Draft complaint protocol proposed	Final complaint investigation methodology appears deferred	Enforcement and independent verification mechanisms unclear	Provide final enforceable complaint investigation and verification protocol	Chapter 18; EPA EIAR Guidelines 2022
Monitoring	Operational monitoring proposed	Trigger thresholds and corrective actions not clearly defined	Monitoring without intervention thresholds may not provide effective mitigation assurance	Define monitoring triggers, escalation procedures and corrective actions	EPA EIAR Guidelines 2022; Chapter 18
Precautionary Principle	No clear precautionary framework identified	Scientific uncertainty acknowledged internationally regarding low-frequency impacts	Residual uncertainty may remain unresolved post-consent	Demonstrate precautionary assessment approach and adaptive operational controls	People Over Wind & Sweetman v Coillte Teoranta; EPA EIAR Guidelines 2022
Electromagnetic Exposure	220 kV infrastructure proposed	EMF assessment methodology not clearly summarised	Residential exposure assumptions and monitoring obligations unclear	Provide EMF modelling, separation distances and ICNIRP compliance confirmation	ICNIRP Guidelines 2020; WHO EMF Guidance; Chapter 05
Sensitive Receptors	Residential receptors acknowledged	Sensitivity analysis for vulnerable receptors not clearly detailed	Potential variability in perceptibility and annoyance response	Clarify methodology for identifying and assessing sensitive receptors	EPA EIAR Guidelines 2022; WHO Environmental Noise Guidelines

3.1.2 Telecommunications, Aviation and Electromagnetic Interference

From an engineering systems-governance perspective, the principal concern is not solely whether individual telecommunications impacts have been identified, but whether the EIAR demonstrates sufficiently robust operational modelling, infrastructure resilience assessment, independent verification and enforceable mitigation assurance to manage residual uncertainty associated with telecommunications, aviation and electromagnetic interference.

Table 3.2 presents a structured technical review of the telecommunications, aviation and operational communications aspects of the EIAR documentation, with particular regard to infrastructure resilience, emergency-service dependency, operational uncertainty and mitigation assurance.

The review has been undertaken from an engineering systems-governance and risk-management perspective, focusing not solely on whether telecommunications infrastructure has been identified, but whether the EIAR demonstrates sufficiently robust assessment, operational modelling, independent verification and enforceable mitigation to adequately manage residual uncertainty associated with:

a) Radio and microwave communications,
b) Emergency-service interoperability,
c) Aviation safeguarding,
d) Rotating-blade interference,
e) Electromagnetic interaction,
f) and cumulative operational effects.

Particular attention has been given to:

a) the increasing dependency of emergency and critical infrastructure systems on uninterrupted wireless communications;
b) the scale and operational characteristics of the proposed turbines;
c) the reliance on future-stage mitigation and monitoring;
d) and the extent to which the EIAR demonstrates complete, precise and operationally verifiable findings consistent with Irish and European environmental assessment principles.

The table below identifies key areas where further clarification, technical substantiation or independently verifiable assessment may be required before residual operational uncertainty can be considered adequately addressed

Table 3.2: Telecommunications, Aviation and Communications Resilience Review

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Emergency Services Communications	Potential impacts acknowledged generally	Emergency communications dependency on uninterrupted wireless systems increasing	Operational consequences of interference not fully quantified	Independent assessment of Garda, Fire, Ambulance and Civil Defence communications systems	ComReg; ITU-R; Wind Energy Development Guidelines 2006
Airwave / TETRA Systems	General consultation may have occurred	No clear evidence of full operational modelling under all scenarios	Interference sensitivity under emergency operational conditions uncertain	Provide dedicated TETRA/Airwave operational interference assessment	ITU-R; ComReg Spectrum Licensing Guidance
Civil Defence communications	Line-of-sight degradation or signal interference	Operational resilience not fully demonstrated	The EIAR does not appear to demonstrate whether emergency service radio reliability, coverage continuity and inter-operability communications resilience have been assessed under worst-case operational and meteorological conditions, including potential rotating-blade interference effects	Independent resilience assessment	ComReg; ITU-R; Wind Energy Development Guidelines 2006; EUROCONTROL Guidance
Telecommunications Assessment	Telecommunications Impact Assessment and Irish Rail Telecommunications Assessment included within EIAR documentation	Existing assessments identify affected communication paths but may not fully eliminate operational uncertainty	Residual uncertainty remains regarding operational interference and resilience	Provide consolidated telecommunications risk and mitigation matrix	Appendix 15-6; Appendix 15-7; EPA EIAR Guidelines 2022
Radio Path Identification	Appendix 15-6 identifies 12 radio paths crossing or traversing the development area	Identification of paths alone does not demonstrate absence of operational interference	Impact significance and sensitivity under operational conditions unclear	Provide detailed path-by-path operational interference assessment	Appendix 15-6; ITU-R Guidance; ComReg Fixed Link Guidance

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Consultee Responses	Some consultees reportedly did not respond or did not provide definitive confirmation	Absence of objection is not equivalent to confirmation of no impact	Potential unresolved operational concerns remain outstanding	Provide final written responses from all consultees including non-responders	EPA EIAR Guidelines 2022; Wind Energy Development Guidelines 2006
Communications Resilience	General telecommunications mitigation referenced	Resilience of critical infrastructure communications systems not fully demonstrated	Potential operational vulnerability during adverse conditions	Provide communications resilience assessment for critical infrastructure systems	ITU-R; ComReg; EPA EIAR Guidelines
Irish Rail Telecommunications	Irish Rail telecommunications appendix included	Railway communications resilience and operational safeguards not fully summarised	Operational and safety implications require greater clarity	Provide confirmation from Irish Rail regarding operational acceptability	Appendix 15-7; ITU-R Guidance
Aviation Systems	Aviation consultation referenced generally	Radar, navigation and aviation-lighting interaction not fully quantified	Cumulative aviation impacts may remain uncertain	Provide confirmation from Irish Aviation Authority and aviation safeguarding consultees	Irish Aviation Authority Safeguarding Guidance; EUROCONTROL Guidance
Fresnel Zone Assessment	Microwave path assessment referenced	Fresnel zone intrusion analysis not fully presented	Potential partial obstruction or signal degradation uncertainty	Provide full Fresnel zone intrusion modelling	ITU-R Guidance; ComReg Fixed Links Guidance
Line-of-Sight Obstruction	General path modelling referenced	Terrain, turbine movement and atmospheric variability	Dynamic operational interference may not be fully characterised	Provide line-of-sight obstruction modelling under worst-case operational scenarios	ITU-R Guidance; EUROCONTROL Guidance

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
		may affect line-of-sight reliability			
Radar Clutter	Aviation/radar considerations acknowledged generally	Rotating blade interference and clutter effects may not be comprehensively quantified	Radar sensitivity and clutter uncertainty remains	Provide radar clutter and moving-blade interference assessment	EUROCONTROL Guidance; Irish Aviation Authority Guidance
Cumulative Interference	General cumulative effects considered	Combined effects from multiple turbines and regional infrastructure may not be fully quantified	Long-term cumulative operational uncertainty remains	Provide cumulative electromagnetic interference assessment	EPA EIAR Guidelines 2022; ITU-R Guidance
Turbine Scale	Proposed turbine dimensions significantly exceed historic turbine scales	Existing guidance may not fully reflect current rotor diameter and blade movement characteristics	Applicability of historic modelling assumptions unclear	Demonstrate assessment suitability for current turbine scale	Wind Energy Development Guidelines 2006; EUROCONTROL Guidance
Operational Monitoring	Monitoring and complaint procedures referenced generally	Post-construction validation procedures not fully defined	Monitoring without trigger thresholds may limit enforceability	Provide post-commissioning verification testing and monitoring framework	EPA EIAR Guidelines 2022; Appendix 15-6
Infrastructure Dependency	Increasing reliance on wireless infrastructure acknowledged implicitly	Potential cascading effects on broadband, telemetry and communications systems insufficiently assessed	Infrastructure resilience implications may be understated	Provide integrated infrastructure dependency assessment	ITU-R Guidance; ComReg

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Precautionary Principle	No explicit precautionary framework identified	Technical uncertainty remains regarding operational interaction effects	Residual uncertainty may remain post-consent	Clarify precautionary methodology and adaptive mitigation framework	People Over Wind & Sweetman v Coillte Teoranta (CJEU Case C-323/17); EPA EIAR Guidelines 2022

3.3. Cultural Heritage, Archaeological Landscape and Wider Heritage Setting

The following table presents a structured technical review of the cultural heritage, archaeological landscape and wider heritage-setting aspects of the EIAR documentation, with particular regard to the sensitivity of the Lemanaghan bogland landscape and its relationship with the wider ecclesiastical and cultural landscape associated with Clonmacnoise.

The review has been undertaken from an engineering risk-governance, environmental assessment and heritage-impact perspective, focusing not solely on direct physical disturbance to recorded monuments, but also on the extent to which the EIAR demonstrates robust and evidence-based assessment of:

a) indirect cultural landscape impacts,

b) visual dominance,

c) cumulative landscape change,

d) preservation in situ,

e) and long-term operational effects on the wider bogland and monastic heritage context.

Particular attention has been given to:

a) the exceptional vertical scale of the proposed turbines within a historically low-lying landscape;

b) the adequacy of cumulative visual assessment methodologies;

c) and the extent to which mitigation measures rely upon post-consent monitoring, exclusion zones or procedural controls rather than demonstrable impact avoidance.

While the EIAR contains substantial heritage and archaeological material, it is not presently clear that the documentation fully demonstrates that indirect impacts on the wider cultural landscape, archaeological setting and heritage character of the region have been comprehensively quantified under worst-case operational conditions.

The table below identifies key areas where residual uncertainty, methodological limitations or reliance on deferred mitigation may warrant further clarification, technical substantiation or independently verifiable assessment prior to determination.

Table 3.3: Cultural Heritage and Archaeological Landscape Review

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Archaeological & Cultural Landscape	Lemanaghan identified as archaeologically and culturally sensitive bog landscape	Wider cultural landscape impacts may not be comprehensively quantified	Indirect effects on archaeological setting and landscape character remain uncertain	Provide integrated archaeological and cultural landscape assessment	Chapter 13; Appendix 13-5; Appendix 13-7; Heritage Council Guidance
Monastic Heritage Context	EIAR includes assessment of Lemanaghan Monastic Complex	Assessment may focus primarily on designated sites rather than wider ecclesiastical landscape	Broader monastic landscape context may not be fully assessed	Provide wider ecclesiastical landscape-context analysis	Appendix 13-5; UNESCO Heritage Impact Guidance
Archaeological Setting	Archaeological assessments included within EIAR	Potential impacts on archaeological context beyond isolated monuments	Cumulative landscape and setting effects insufficiently quantified	Wider landscape-context assessment including Lemanaghan and Clonmacnoise	Chapter 13; Heritage Council Guidance
Landscape Character	General landscape and visual assessment undertaken	Potential alteration of historic bogland character	Long-term landscape transformation may not be fully characterised	Detailed assessment of historic bogland landscape character transition	Chapter 14; Appendix 14-5
Peat Desiccation	Peatland environment acknowledged	Potential desiccation effects on preserved archaeological material insufficiently detailed	Long-term preservation conditions uncertain	Demonstrate preservation feasibility under altered hydrological conditions	Appendix 13-7; Heritage Council Guidance
Turbine Scale	Turbines proposed up to approx. 220 m tip height	Exceptional turbine scale within low-lying heritage landscape	Existing visual methodologies may not fully capture perceived dominance	Demonstrate suitability of visual assessment methodology for turbine scale	Chapter 14; Appendix 14-5

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Visual Dominance	Photomontages and Landscape and Visual Impact Assessment (LVIA) included	Potential skyline intrusion and visual dominance concerns	Wider cultural setting impacts may remain understated	Additional photomontages from sensitive heritage receptors	Chapter 14; Landscape Institute Guidance
Clonmacnoise Heritage Landscape	Clonmacnoise not directly within development footprint	Wider Shannon monastic corridor and heritage landscape may be indirectly affected	Long-distance visibility and cumulative heritage interaction uncertain	Assessment of wider Clonmacnoise cultural landscape impacts	UNESCO Tentative List; Heritage Council Guidance
Long-Distance Views	General visibility analysis undertaken	Visibility from culturally significant heritage locations may not be fully quantified	Impact on important views and historic landscape appreciation uncertain	Provide verified photomontages from Clonmacnoise and surrounding heritage areas	Appendix 14-5; LVIA Guidance
Seasonal Visibility Assumptions	Visualisations included within EIAR	Seasonal vegetation screening assumptions may influence visibility conclusions	Winter visibility effects may not be fully assessed	Provide winter and worst-case visibility photomontages	Appendix 14-5
Cumulative Visual Effects	General cumulative assessment undertaken	Combined visual effects with existing or permitted infrastructure may be understated	Cumulative industrialisation of wider heritage landscape uncertain	Combined heritage and cumulative visibility assessment	Chapter 14; EPA EIAR Guidelines 2022
Aviation Lighting	Aviation lighting requirements acknowledged generally	Night-time lighting effects on heritage landscape not fully assessed	Visual impact during darkness and low-light conditions uncertain	Assessment of aviation lighting visibility within heritage landscape	Irish Aviation Authority Guidance; EUROCONTROL Guidance

Assessment Area	EIAR Position / Apparent Assessment	Identified Concern	Residual Uncertainty / Technical Gap	Further Information Requested	Reference / Guidance
Moving Blade Visibility	Operational turbine effects acknowledged generally	Dynamic blade movement may alter perception of heritage setting	Intermittent movement and visual distraction effects uncertain	Assess moving-blade visibility from heritage receptors	Chapter 14; LVIA Guidance
Preservation in Situ	Monitoring and mitigation proposed	Preservation in situ may not remain achievable under altered drainage conditions	Long-term preservation certainty unclear	Demonstrate preservation feasibility under operational conditions	Appendix 13-7; National Monuments Service Guidance
Archaeological Monitoring	Archaeological monitoring proposed during construction	Monitoring may not prevent irreversible disturbance	Discovery during construction may occur after damage already initiated	Detailed archaeological contingency and preservation strategy	Chapter 18; Heritage Council Guidance
Exclusion Zones	Exclusion areas referenced generally	Exclusion zones alone may not prevent indirect hydrological or vibration effects	Secondary effects beyond exclusion areas unclear	Clarify effectiveness and monitoring of exclusion zones	Chapter 13; EPA EIAR Guidelines 2022
Mitigation Strategy	Mitigation measures referenced	Mitigation may rely heavily on post-consent monitoring and procedural controls	Enforceability and effectiveness of mitigation uncertain	Provide measurable mitigation triggers and corrective-action procedures	Chapter 18; EPA EIAR Guidelines 2022
Precautionary Principle	No explicit precautionary framework identified	Cultural landscape impacts may remain subject to uncertainty	Residual uncertainty may persist post-consent	Clarify precautionary methodology adopted for heritage assessment	People Over Wind & Sweetman v Coillte Teoranta; EPA EIAR Guidelines 2022
Planning & Judicial Precedent	Heritage impacts acknowledged generally	Heritage and landscape impacts may constitute valid planning concerns	Extent of evidential robustness required remains significant	Provide evidence-based and independently verifiable heritage assessment	North Meath Wind Farm Ltd v ABP; Maighne Wind Farm Refusal; Heritage Council Guidance

4. Conclusion

This submission has identified a number of areas in which the EIAR documentation does not presently appear to fully demonstrate that potential environmental, operational and infrastructure-related effects associated with the proposed development have been comprehensively quantified, independently verified or operationally assured under worst-case conditions.

The principal concerns identified relate to:

1. Telecommunications and emergency-service communications resilience;
2. Aviation interaction and electromagnetic interference;
3. Low-frequency noise and infrasound assessment;
4. Cumulative cultural landscape and heritage-setting effects;
5. And the extent to which mitigation effectiveness is dependent upon future-stage controls, operational monitoring or post-consent management arrangements.

While the EIAR contains substantial technical material and mitigation commitments, several conclusions appear reliant upon:

1. Conditional mitigation wording;
2. Future operational procedures;
3. Contractor-led controls;
4. Monitoring frameworks lacking clearly defined trigger thresholds, escalation procedures and independently verifiable corrective-action mechanisms.

From an engineering systems-governance and environmental risk-management perspective, the principal issue is not whether mitigation measures are proposed in principle, but whether the documentation demonstrates with sufficient certainty that such measures are:

1. Specific;
2. Measurable;
3. Enforceable;
4. Independently auditable;

5. Capable of reliably managing residual risk throughout the operational lifecycle of the development.

Particular regard should also be had to the sensitivity of the receiving environment, including:

1. Critical communications infrastructure;
2. Emergency-service interoperability;
3. The wider archaeological and ecclesiastical landscape associated with Clonmacnoise;
4. Cumulative operational effects associated with turbine infrastructure of the proposed scale.

Accordingly, this submission respectfully contends that further clarification, quantified assessment and independently verifiable mitigation detail may be required before the Board can be satisfied that the proposed development has been comprehensively assessed in accordance with the evidential and precautionary standards underpinning Irish and European environmental assessment and planning law.

5. References

Primary EIAR Documentation

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UNESCO (2026) *Clonmacnoise and its Cultural Landscape – Tentative List*. Available at: UNESCO Clonmacnoise Tentative List.

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