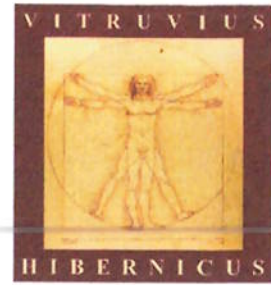


LIAM MADDEN B. ARCH. NUI, M.APPL.ENVIR. SC., CERT. ARCH. PROF., DIP. MICRO-PROC. TECH.
ENVIRONMENTAL SCIENTIST PLANNING CONSULTANT LEGAL ADVISOR S.I. 8/2017 SCH. 5
CONVENT ROAD, LONGFORD N39 EE72

EU REGISTERED ARCHITECT NETHERLANDS REG. NO. 1.180615.001
POSTBUS 41882, 1009 DB AMSTERDAM, NEDERLAND.

UK REGISTERED ARCHITECT REG. NO. 0461701
10/2 354 MEADOWSIDE QUAY WALK, GLASGOW G11 6EE



An Coimisiún Pleanála,
64 Marlborough Street,
DUBLIN 1
D01 V902

23 June 2026

ACP ref : PCX12. 324290

re: Proposed wind farm of 14 wind turbines, and associated infrastructure.
Applicant : FuturEnergy Lissinagrough DAC

Dear Sir/Madam,

I am retained by Darren Sweeney, Coolodonnell, Rossinver, Co. Leitrim F91 FYR4
who makes third party submission/observation in this SID application PXC12.324290
Attached is the third party submission/observation fee €50-00.
Set out below are my client's comments.

Yours faithfully,

Liam Madden,
Convent Road,
LONGFORD
N39 EE72

AN COIMISIÚN PLEANÁLA	
LDG-	088822-26
ACP-	
01 JUL 2026	
Fee: €	50 Type: cheque
Time: 9.15	By: reg post

(1) OVERVIEW

This application is for a 10 year permission for 14 wind turbines and associated infrastructure at Lissnagroagh and other townlands, Co. Leitrim. First and in general, my client does not take issue with the Planning Statement and the justification offered for the project.

(2) DESCRIPTION

This application relies on Flexibility of Later Detailed Design.

Therefore only the broad design parameters for the turbines are given.

- * The diameter ranges from 149m to 163m.
- * The centre pivot is between 101m and 110m.
- * The overall height is between 180m and 185m.
- * The clearance from FGL to underside of rotor blades is 22m.

Also proposed are a modified permanent access from the L6-801 and a 218 hectare biodiversity enhancement.

The general description, as detailed as it can be, is in Chapter 2 EIAR.

Page 5 : Declares no dwelling within 740m .

At 2.2.2 The delivery route is referred to and is mapped in Appendix 2-1 EIAR

Page 9 : Sound/Noise is addressed in Appendix 9-10 of the EIAR

The applicant relies on National Policies, Leitrim and Sligo County Development Plan and trans-border consultation with N.I. offices.

The applicant concedes at p. 32 that some of the proposed Turbines are located in areas not Zoned for this type of development.

I argue that ACP may not lawfully order a grant of permission for Wind Turbines on lands not zoned for this user.

(3) LACUNAE

Although well presented, the application papers have significant scientific gaps or *lacunae*.

I have been charged with finding scientific *lacunae* in the submitted studies.

The EIAR and NIS must reach the standard equivalent to a High Court Affidavit.

Typographical or directory errors aside, they must be 'bullet-proof', so to speak.

The contents must be complete, precise and definitive. There can be no scientific gaps.

(4) CJEU and High Court

The applicable standard of proofs are those decided in CJEU and HC cases :

C-258/11 para. 44

So far as concerns the assessment carried out under Article 6(3) of the Habitats Directive, it should be pointed out that it cannot have *lacunae* and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to effects of the works proposed on the protected site concerned.

C-461/17 Holohan v An Bord Pleanála.

An Appropriate Assessment must examine the implications of a proposed project, not just for the species within a European site but also the significant *ex situ* implications for the habitat types and species found beyond the defined boundaries of a European site.

C-164/17

It follows that the answer to the question referred is that Article 6 of the Habitats Directive must be interpreted as meaning that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project, the part of the site that is likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned : that fact falls to be considered, if need be, under Article 6(4) of the directive.

C-461/13

Article 4(1)(a)(i) to (iii) of Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy must be interpreted as meaning that the member States are required – unless a derogation is granted – to refuse authorisation for an individual project where it may cause a deterioration of the status of a body of surface water or where it jeopardises the attainment of good water status or of good ecological potential and good surface water chemical status laid down by the directive.

[2018] IESC 31 Connelly v An Bord Pleanála

The decision maker has a duty to both provide reasons for reaching the relevant conclusion and “to make complete, precise and specific scientific findings” which justify that conclusion.

(4) PROOFS

In civil legal cases the standard of proof is the balance of probability. In criminal cases, the standard is beyond all reasonable doubt. In EU Habitats Directive (NIS) the proof must be beyond all reasonable scientific doubt. This is the ‘Sweetman’ standard of proof : there can be no scientific *lacunae*. Moreover the proposed development must be assessed for compliance with the requirements of the Water Frameworks Directive (2006/60/EC) I argue that the applicant has provided insufficient reference to the Directive and/or compliance with its provisions.

(5) ARTICLE 6(2)

I submit that ACP must fulfil its strict obligations under Article 6(2) of the Habitats Directive :

2. Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

(6) REFUSAL

I argue that there are scientific *lacunae*.

Therefore ACP has no legal option but to refuse to grant planning permission.

LACUNA (1) (procedural)

1.1 The Planning Statement refers :

2.2.1

- (i) Permanent access to the L61801 and
- (ii) Temporary access to L6184 and L 61844 for construction purposes.

These are advertised in the Public Notices.

The Site Notice locations are shown.

The application lands are privately owned.

The written consents of the various landowners of the Application Site are included.

The written consent of the Council for works on, in or under roads in its charge is also included.

2.2.2

Refers to a Turbine Delivery Route (TDR)

The TDR is advertised in the Public Notices.

Yet this appears to be contradicted on p. 2-25 Vol II EIAR 2.5.9 where it is stated that the TDR *“accommodations do not form part of the current planning application”* and *“if planning consent is needed for the proposed temporary accommodations for turbine, a further consenting process will be used to obtain permissions for the accommodations.”*

The word ‘development’ is studiously avoided.

What happens if one of the private landowners does not consent to the trespass ?

The developer would have to find an alternative route.

Consideration of Reasonable Alternatives is mandatory. However, it is absent.

See para.1.3 below

The Applicant proposes vegetation removal for ‘oversail’ (sic) areas of third party owned lands at 57 identified ‘pinch-points’ along the delivery route.

This work requires the consent of the third party landowners

However the necessary written consents of other third parties is missing for lands on the proposed delivery route.

There are no Public Notices on the 57 ‘pinch-points’ on privately owned property.

Just as Site Notices were required at the Application Site, so too were Notices required on the private ‘pinch-points’.

Just as the written consent of the Application Site owners was required, so too were the consents of the 57 private ‘pinch-point’ landowners. The consents are absent.

This LACUNA cannot be addressed by reliance on Section 34.(13) of the Act :

“A person shall not be entitled solely by reason of a permission under this section to carry out any development.”

Most of the affected persons don’t even know about the proposal to cut down vegetation and traverse their own private land. And they haven’t been told or Notified. That’s the raison d’être of public notices.

It is noteworthy that the applicant is a private company FuturEnergy DAC and not a semi-state body. The application is incomplete and therefore technically defective.

- 1.2 There is little point in seeking Permission for a Wind Farm if the turbines can't be lawfully brought onto the site. Without access across third party land, turbines cannot be brought along the route shown in EIAR Appendix 2-1

Someone could comment – *sure couldn't you get an injunction the morning you see a caravan of lorries trespassing across your private land and cutting your hedge ?*
Afraid not. Injunctions are granted on the balance of convenience.

A €100 million development held up by the cutting of a hedge.....
There's no Injunction there – damages in lieu is the remedy a Court would apply.
No, the way to stop trespass is to prevent it before it starts.

- 1.3 Let's say one farmer on the TDR gets an injunction.
The developer must then find an alternative route.
However, no alternative route is considered in the EIAR.

Importantly EIAR Appendix 2-1 does not map alternative routes - or half-routes.
The failure to consider alternatives is a fatal *lacuna*.

- 1.4 The applicant states '*Means of delivering – legal agreement with landowners.*'
Uncertainty lies in this bland platitude.
The applicant declares that the TDR is NOT part of the application lands but yet includes in the TDR in the EIAR and NIS.
That being the case, the information must be complete, precise and definitive.

I refer to Q. 16 Foul Drainage in the completed application form and related drawings.
The applicant shows toilets in one of the proposed buildings.
The applicant proposes to store sewage in a tank and pump it away periodically.
I suggest this is unacceptable.

- 1.5 EIAR Chapter 2 Appendix 1 p. 57 refers.
The applicant addresses de-commissioning by proposing to cut up the blades and re-cycle them. This is manifestly inadequate.

The chicken-and-egg argument starts here.
The applicant relies on the Design Flexibility Option under Section 37CC of the Act postponing the Detailed Design until after Permission issues.

But if we - or the applicant – don't know what the blades are made of till they're designed AFTER permission issues, how do we know what the blades are made of ?
And if you don't know what they're made of, how can the proposed de-commissioning advance with the throwaway comment – sure we'll cut them up and recycle them.

- 1.6 The Planning Statement suggests 35 years is the optimal operational life for the proposed development and a detailed description of the proposed development is set out in the submitted EIAR. Both of these declarations cannot be true.
How can you predict the operational lifetime if you don't know definitively what the turbines are made from until the detailed design is completed ?

2.1 General comments :

Renewable energy sources, though well advanced, are still evolving.

For comparison, means of transport have evolved.

The velocipede > the penny-farthing > the horseless carriage > the Model T Ford > the KdF Peoples Car > VW Beetle > the 2CV > the modern petrol BMW-Mercedes-Porsche etc., > the PV roof-panelled lightweight car > the battery powered electric prototype > the now ubiquitous electric family car > and now even the driverless car.

2.2 Roof mounted PV Photo Voltaic panels are everywhere.

Small PV panels are on parking ticket vending machines and outdoor security cameras.

I call this energy type 'trickle-feed'.

Roughly, one gets c. 0.5 kW from a 2 sq.m. roof PV panel.

The return per sq.m. is modest.

Large arrays in open fields gobble up vast landbanks.

They can be bought off-the-shelf on Amazon. They're cheap.

They are easier to fit than a Velux Roof Window.

PV panels work : they are sustainable and they contribute to national self-sufficiency.

Ireland has an abundance of wind and is surrounded by water.

They reduce reliance of oil. All the above is positive.

However, PV panels come at a price. They gobble up vast tracts of land.

This is a balancing act. Do the positives outweigh the negatives ?

2.3 Wind Turbines work.

It is argued that Wind Turbine farms are in the national interest.

The positives are set out in the applicant's arguments.

The negatives are the arguments I advance.

This is a different sort of balancing act.

The protections afforded by the Habitats Directive are absolute.

The standard of proofs for an applicant is very high.

I quote from the CJEU and High Court rulings which speak for themselves.

This is the thorny question ACP must address.

3.1 Preliminary comment.

The applicant equates the word Sound with Noise.

The technical definition of 'noise' is simply 'unwanted sound'.

[Beethoven's 9th can an unwelcome intrusion and therefore 'noise' if it's played in a quiet library. Elsewhere, it's not 'noise'.]

3.2 Based on the predicted dB(A) the applicant concludes there will be no Potential **Human** Health Impacts. p. 2 refers to sound "... *readily detected by the human ear.*" The Noise/Sound assessment is based on various turbine Models : Vesta V162, General Electric GE-158, Nordex 163

The availing of Design Flexibility creates a vagueness which undermines the Noise-Sound Assessment and, therefore, the Conclusions arrived at.
Which turbine Model is assessed ?

At c. 1.0 m a whispered conversation measures 20 to 30 dB and a car horn 110 dB.
This is the 'amplitude' of a sound.

Sound pitch or frequency is measured in cycles per second or Hz.

The Human range is 20 Hz to 20,000 Hz.

The Bat range, depending on species, ranges from 700 Hz to 200,000 Hz.

Infrasound has been mentioned by the applicant but only in passing.

Ultrasound has not been mentioned or assessed at all.

Ultrasound Hz are above 20,000 Hz – above human detection but within bat detection range. This has not been assessed.

Therefore the effect on Bats, Protected Species is unknown.

(Sound Bats Tables attached.)

3.3 While Bats can see, they rely heavily on echolocation or sonar navigation.

Sound travels on fluctuations in air movements.

Wind turbines cause air movement or turbulence.

Many of the proposed turbines are situate right in the centre of the Bat concentrations.

This phenomenon has not been assessed and therefore any conclusions drawn are not grounded on real measureable data.

3.4 The dB levels are also contested as Bats hearing range differs from human range and the air turbulence from rotating turbine blade was not assessed.
Standardised human testing is at 10 degrees C and 70% Relative Humidity (RH).
Bat hearing range, temperature and RH were not assessed.

3.5 Blade Feathering is an ancient term from the days of Dutch windmills.

When winds increased to hurricane strength, the canvas-covered arms 'feathered' as a safety measure.

In other words the blades didn't go faster and faster till they spun off.

Instead they 'feathered' to a standstill.

Some authorities hold that Blade feathering below 2 rotations per minute

[57 km/hr. at the blade tip] can reduce Bat fatalities by up to 50%.

That's a double entendre : it confirms that there will be Bat fatalities and merely reduces the slaughter.

- 3.6 The proposed Buffer zones are a scientific nonsense made worse by the attached distortions between the *Mean (+SE) number of bat passes per hour and night* Diagram and the attached *Figure 2-4 elevation*.

There is no scientific evidence to support increased [Buffer] zone applicable formulae in Ireland or UK.

This is a scientific gap or *Lacuna*.

The studies are incomplete, imprecise and not definitive.

The absence of proofs is insufficient for a compliant Appropriate Assessment.

In the absence of complete, precise and definitive proofs, ACP must refuse permission.

In the absence of proofs it cannot be concluded that the Habitats on site will remain suitable for Bats and that no significant displacement of individuals or populations will occur..

On the contrary, there is ample evidence and proof within the applicant's own papers that Wind Turbines create a hostile and dangerous environment for the Bat Protected Species.

- 3.7 There is a scientific doubt.
In the absence of complete, precise and definitive proofs, ACP must refuse permission.

LACUNA (4)

Potential **Human** Health Impacts are discussed.

There is no Assessment on the Health Impacts on Bats ... or Birds.

AA Screening confirms Loss of Habitat, Residual Effects, In-combination/cumulative Effects.

There is a Finding of Significant Effect.

The applicant proposes Compensation and Mitigation

[cf. Sections 5.8, 5.11, 5.6.2.8.1, 5.6.8.2, 5.6.2.8.5, 5-216]

p. 218 There is a Finding of No significant effect – an apparent contradiction.

p. 219 Windfarms are listed as a threat/pressure to conservation status.

Collision Risk Assessment is studied i.e. death by guillotine.

That's not the same as Health.

Bats, a Protected Species, differ from humans in four fundamental ways.

- (i) Bats travel by sonar navigation.
Whether sonar navigation is or is not affected by air turbulence from Wind Turbines has not been assessed. This is especially important because the tips of the rotor blades travel 22m above ground level and well within the flight path corridor height of Bats. Moreover, the tips of the rotor blades at 22m above ground level have a velocity of over 500 km/hour.
- (ii) Bats have a hearing range of 700 Hz – 200,000 Hz : the human range is 20 – 20,000 Hz
The impact of Sound/Noise at these ranges has not been assessed.
The Sound/Noise assessment relates only to humans.
- (iii) Bats are a Protected Species; humans are not.
The turbine locations are largely determined by the proximity to human dwellings.
There are no human dwellings within 740m.
In contrast, many of the proposed turbines are located right in the centre of bat concentrations with a disregard for the confirmed adverse effects on Bats.
- (iv) Bat flight paths have been assessed with special reference to turbine proximity.
Flight paths of Hen Harriers, Nesting Hen Harriers, Buzzards and White Tailed Eagles are also especially vulnerable
cf. pp. 467, 468, 674, 671, 676 and 762 of EIAR Chapter 6 pp. 1278.)
cf. App. 6-14 Ornithology p. 1164 Avian Collision Risk report.
(Refer to para. 5.3 below.)

This incompleteness is particularly disturbing as Bats are projected to have the highest potential Collision-Mortality rate of all Protected Species.

- 5.1 The applicant relies on Section 37CC of the Act permitting Design Flexibility within specified broad parameters.

A cynic could comment : Final Design Details are unknown.

ACP gives permission for a bungalow but the developer can then lawfully build a two-storey house because the details can be agreed AFTER the permission to build has issued. This would be farcical.

(Of course it's not that silly but the Design Flexibility is a double-edged sword.)

If the actual details and the Turbine Model No. are not specified, the de-commissioning study cannot be complete, precise and definitive. There are scientific gaps.

How can you state that the blades will be cut up and re-cycled if you don't know precisely and definitively what they're made of ?

Or where will you put them after they're de-commissioned and cut up ?

All we know is the turbine blades will probably be made of fibreglass.

Even the delivery route is not definitive.

A further consequence of the Design Flexibility availed of is the Sound/Noise study cannot be complete, precise and definitive.

The dB levels are a mere shot in the dark.

The impact and effect of the Noise/Sound on humans has been guessed.

The impact and effect on Birds/Bats has not be assessed.

This is especially important as it affects Bats, a Protected Species.

There are scientific gaps.

- 5.2 I refer to Vol II EIAR 2.5.4.3 p.2-16

I now take the lower of each of the Design Flexibility permitted parameters.

The diameter is 149 metres.

The circumference is 2PIR or 468 metres.

The applicant confirms the number of rotations between 3 and 20 per minute.

That sounds innocent however, it minimises and thereby distorts.

At 3 rotations/minute the blade tip travels : **84.24 km/hr.**

At 20 rotations/minute the blade tip travels : **561.6 km/hr.**

Turbines T6, T7 T9 T10, T11, T12, T13 have recorded Moderate & High BAT activity.
[cf. Bat Mortality Monitoring 5.12.4.7.4]

p. 41 No. of Bat passes @ T9 550 and @ T11 c. 45 diagrams no. Soprano pipestrelle

p.78 low to medium @ T6, 7, 11, 13 high risk @ T9, 10, 12 medium risk.

The lowest level of the blades is 22m above FGL, precisely where the rotating blade tips are at their greatest velocity.

The flying height of Protected Bats well exceeds the 22m clearance above FGL

[cf. *Mean (+SE) number of bat passes per hour and night.* Attached.]

Turbulence from blade tips rotating over 500 km/hr. @ 22m above FGL has not been assessed. Turbulence interferes with Bats' navigational skills.

How can a Protected Bat survive flying blindfold in the dark through the guillotine blades of a wind turbines rotating at over 500 km/hr. in the epicentre of the acknowledged Bat Habitat ???

5.3 I refer to the applicant's diagram of the rotor blades superimposed on the flight paths of the Protected Bat Species

I also refer to the applicant's diagram of a turbine, drawn to scale.

Both are attached : but they're not the same !

cf. Appendix 6 EIAR Collision Risk Modelling

The coloured Flight Activity Route paths diagrams are quite excellent.

However, there is an embarrassing distortion between :

- (i) the Mean (=SE) number of Bat passess per hour and night
Ground Clearance 50m and 100m diameter.
(Attached)
- (ii) the Scaled Drawing in Figure 2-4 Turbine Elevation
Ground Cleanace 22m and 149m diameter.
(Attached)

When the real proposed diameter is superimposed on the Bat flight paths, the near extermination of the protected Bat species is assured.

I further attach my own drawing showing the scaled turbine on the Bat flight paths.

Anyone can see the implications unless you're as blind as a bat !

5.4 In the absense of detailed specifications, the Shadow Flicker assessment is incomplete, imprecise and not defintiive.

Thnere is a scientific gap in the studies.

The Conclusion of No Significant Effects is therefore contested.

5.5 The Shadow Flicker Assessment is therefore not complete, not precise and is not definitive.... simply because the details are not complete, not precise and not definitive.

For that reason alone, the NIS is defective.

Permission may not lawfully issue unless the NIS is complete, precise and definitive.

5.6 NIS : BIRD and BAT Collision Risk Assessment

Availing of the Design Flexibility means precise details are not available to the applicant. The lack precise details e.g. the Model No. and Type of the Turbine, militates against the mandatory obligation to compile a NIS which is complete, precise and definitive.

5.7 EIAR Vol. II refers. p.15 p.19; p.22 (5.2.1.2.2.2); p.59 (5.4.1.4);
Appendix 5-5 refers.

Bat Species : low-medium favorability for Bats is confirmed.

p.130 Bats are are recorded as High Value : an Important Ecological feature

p.14 Lesser Black-backed Gull and Herring Gull are listed SC1 species but not regularly recorded.

p.162/3 Bat Buffers are discussed.

cf. 5.6.2.8.2; 5.6.3.8.1. :

The proposed development will cause a 'Necessary loss of Habitat'.
This arises from fragmenting the Bat Habitat.

I refer to :

5.263/4 "*Impacts of Wind Energy development on Birds and Bats*" [Edkins 2014 ref.]

p. 276 Mitigation for Bats is presented.

App. 5-5 EIAR p.6 'low-to-medium' and 'High Risk' are confirmed.

AA screening report confirms significant effects.

I refer to App. 5-5 EIAR

p. 25 Buildings are confirmed as Bat roosts.

p.219 It is proposed to remove one Building.
The building proposed to be removed as not assessed as a Bat Roost.
This is a scientific gap or *lacuna*.

6.4.71 Other developments are listed in Table 6-25.

Table 6-28 Summary of likely Significant Effects and Mitigation of Residual
Effects. & proposed compensation measures

6.4.9.1 Compensation measures are proposed.

p.6 -138 The Conclusion states there is 'potential for cumulative impact'.

p.265 I suggest that 5.13 Conclusion of No Significant Effect is not reliable.

5.8 EIAR Chapter 6 Ornithology pp. 1278

p.468 Conclusion – Collision Risk is confirmed.
Habitat Loss is confirmed.
Disturbance and Displacement Impacts are confirmed especially for
Bats, Hen Harrier, Buzzard and White Tailed Eagle

I comment that the submitted Mapping of flight paths etc. is excellent.

I refer to : Flight paths p. 762,
Hen Harrier Maps p.667, 676, 674, p.1133 to 1159
Buzzard p.671, 769,
Kestrel p.767 p.963,
Hen Harrier Nesting and Foraging Habitat

p.116 I submit that the Conclusion of No significant Effect is not reliable.

LACUNA (6) Shadow Flicker

- 6.1 cf. EIAR Chapter 10 Shadow Flicker.
cf 10.2.4
Astonishingly, the applicant refers to a Wind Turbine Nordex Model N163 which has an overall height of 185m and a diameter of 163m.
These dimensions are the maximum in the Design Flexibility Parameters which contradict the dimensions on the *Mean (=SE) number of Bat passes per hour and night* (Attached).
These inconsistencies undermine this study.
- 6.2 Shadow Flicker Assessment refers only to the possible effect on humans in dwellings.
There is no assessment on humans working outdoors on their farmlands.
There is no assessment on humans while driving ... and we all know how dangerous flickering sunlight through a front and side car windscreens can be.
There is no assessment on the possible effects on Birds or Bats.
This is a scientific gap or *lacuna*.

LACUNA (7) Structure

- 7.1 Concurrent application PCX12. 324161-26 confirms a '*flow slide failure*' in 1821.
This was a 'horizontal' slide, so to speak, meaning that these lands are more or less level. The topmost tecton slid across the lower strata like a lava flow.
- 7.2 The unparalleled and notorious 2003 landslide disaster at Derrybrien Co. Galway arose, it is confirmed, because no reliable environmental impact study had been carried out or indeed sought by the planning authority.
We've had 23 years on and multi millions of Irish taxpayers' monies on, EU fines etc..
Enforcement eventually followed.
Everything was to be removed ... except the foundations.

ESB developers finally declared : "*It would not be possible to remove turbine foundations without risk to ground stability*".
So much for Galway County Council, the ESB and, importantly, decommissioning.
- 7.3 The de-commissioning proposed in this application also proposes to keep the concrete foundations after 'de-commissioning'
So it's not de-commissioning at all.
It's a permanent structure.
The permanence is not reflected in the application and/or Notices.

I refer to concurrent ACP application PCX12. 324161-26.
The corresponding Structure Assessment confirms that in 2003 there was a bog slide in the Shetlands. Page 12 @ Para. 3.(6)(c) speaks of a "*recent peat landslide*" but only in passing and was silent on the matter thereafter.
The Shetlands bog slide isn't even mentioned or considered in this PCX12. 324290.
This Structure Assessment in this application PCX12. 324290 is not a complete study.

LACUNA (8)

Zoning – In-combination – Cumulative Effects.

- 8.1 I refer to Planning Statement 3.4.2 pp. 31 and 32
and the Leitrim County Renewable Energy Strategy (RES)

The RES sets out 'available areas' for new wind farm development.
Turbine 11 and Turbine 12 are located outside of the zoned 'available areas'.
cf. 3.4.3.1 where no wind energy zoning applies.
Permission cannot lawfully issue for development not zoned for the proposed user.

The Cumulative Effects are based on incomplete, imprecise and not definitive.
information due the above mentioned Lacunae.
The 'Conclusion of no Significant Effects' is grounded on contradictory data.
The 'Conclusion of no Significant Effects' is not grounded on a full complement of
complete, precise and definitive scientific data.

This is not precise, complete, and definitive.
Instead it is imprecise, incomplete and not definitive.

My client urges An Coimisiún Pleanála to refuse to grant planning permission.

Yours,



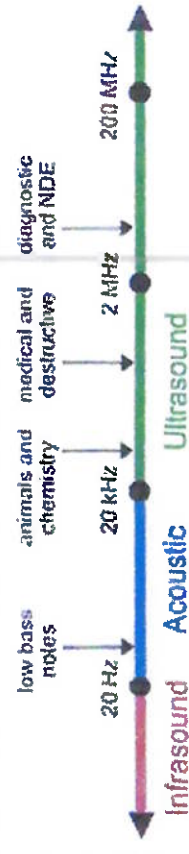
Liam Madden,
Convent Road,
LONGFORD
N39 EE72

Definition [edit]

Ultrasound is defined by the American National Standards Institute as "sound at frequencies greater than 20 kHz". In air at atmospheric pressure, ultrasonic waves have wavelengths of 1.9 cm or less.

Ultrasound can be generated at very high frequencies; ultrasound is used for sonochemistry at frequencies up to multiple hundreds of kilohertz.^{[6][7][8]} Medical imaging equipment uses frequencies in the MHz range.^[9] UHF ultrasound waves have been generated as high as the gigahertz range.^{[10][11][12][13]}

Characterizing extremely high-frequency ultrasound poses challenges, as such rapid movement causes waveforms to steepen and form shock waves.^[14]



Approximate frequency ranges corresponding to ultrasound, with rough guide of some applications

ATTACHMENT No. 1

Animals [edit]

Bats use a variety of ultrasonic ranging (echolocation) techniques to detect their prey. They can detect frequencies beyond 100 kHz, possibly up to 200 kHz.^[18]

Many insects have good ultrasonic hearing, and most of these are nocturnal insects listening for echolocating bats. These include many groups of moths, beetles, praying mantises and lacewings. Upon hearing a bat, some insects will make evasive manoeuvres to escape being caught.^[19] Ultrasonic frequencies trigger a reflex action in the noctuid moth that causes it to drop slightly in its flight to evade attack.^[20] Tiger moths also emit clicks which may disturb bats' echolocation,^{[21][22]} and in other cases may advertise the fact that they are poisonous by emitting sound.^{[23][24]}

Dogs and cats' hearing range extends into the ultrasound; the top end of a dog's hearing range is about 45 kHz, while a cat's is 64 kHz.^{[25][26]} The wild ancestors of cats and dogs evolved this higher hearing range to hear high-frequency sounds made by their preferred prey, small rodents.^[25] A dog whistle is a whistle that emits ultrasound, used for training and calling dogs. The frequency of most dog whistles is within the range of 23 to 54 kHz.^[27]

Toothed whales, including dolphins, can hear ultrasound and use such sounds in their navigational system (biosonar) to orient and to capture prey.^[28] Porpoises have the highest known upper hearing limit at around 160 kHz.^[29] Several types of fish can detect ultrasound. In the order Clupeiformes, members of the subfamily Alosinae (shad) have been shown to be able to detect sounds up to 180 kHz, while the other subfamilies (e.g. herrings) can hear only up to 4 kHz.^[30]

No bird species have been reported to be sensitive to ultrasound.^[31]



Bats use ultrasound to navigate in the darkness.



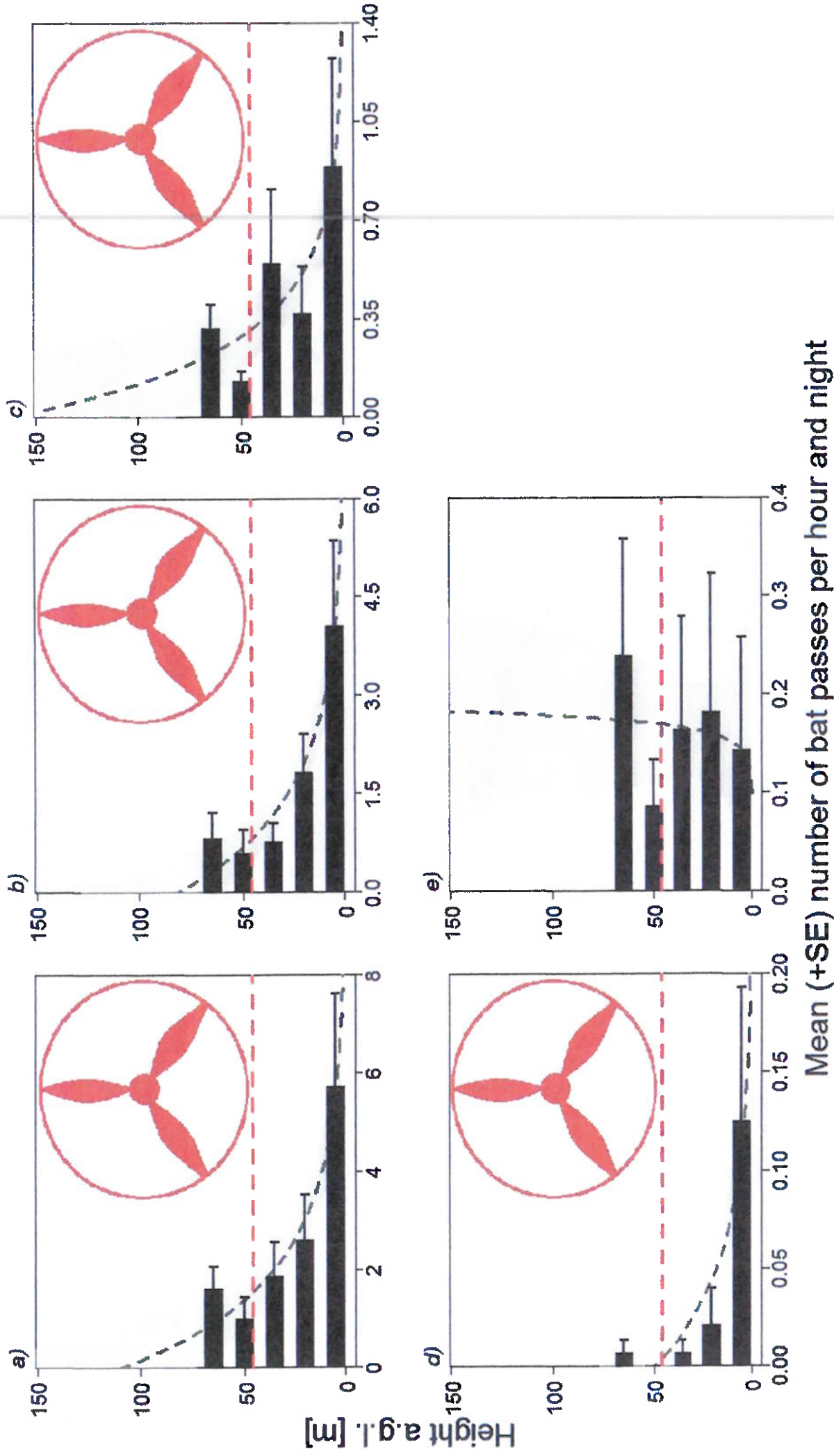
A dog whistle, which emits sound in the ultrasonic range, used to train dogs and other animals

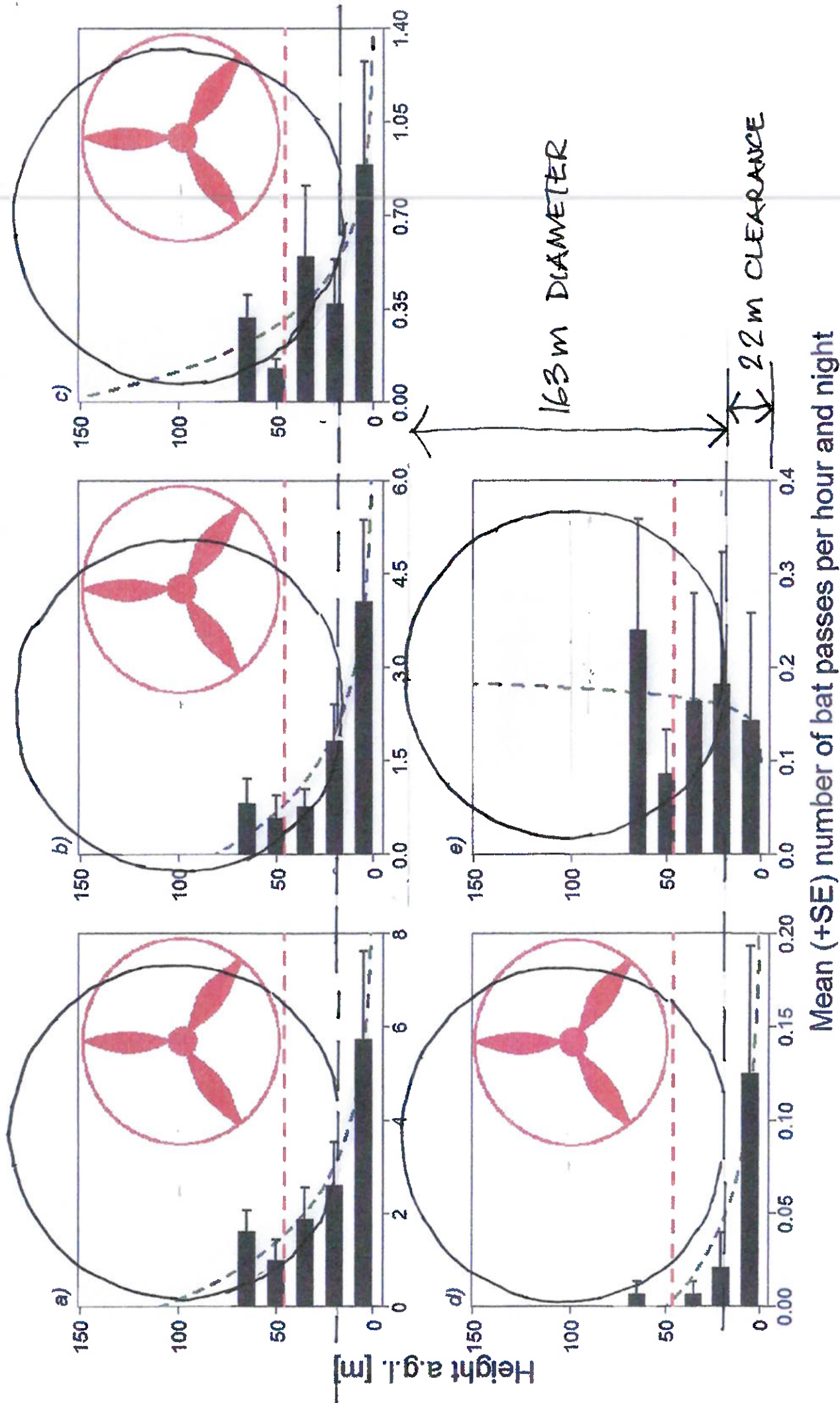
ATTACHMENT No 2

ATTACHMENT No.3



At the time of writing, the Revised Draft WEDG's (2019) remain in draft, they have not been adopted and therefore may be subject to change before they are finalised. Nonetheless, the guidelines relating to noise, shadow flicker, visual amenity setback, environmental assessment, consultation obligations, community dividend and grid connections have been considered in the design of the Proposed Project and have been complied with to the extent that they represent





ATTACHMENT NO. 5