

File With _____

SECTION 131 FORM

Appeal NO: ACP APP-322154-25Defer Re O/H ☐Having considered the contents of the submission dated/ received 19/12/25

from

FBT Responsible
Energy I recommend that section 131 of the Planning and Development Act, 2000
be/not be invoked at this stage for the following reason(s): No new planning issues

E.O.: James O'ConnorDate: 21/12/25

For further consideration by SEO/SAO

Section 131 not to be invoked at this stage. ☐Section 131 to be invoked – allow 2/4 weeks for reply. ☐

S.E.O.: _____

Date: _____

S.A.O.: _____

Date: _____

M _____

Please prepare BP _____ - Section 131 notice enclosing a copy of the attached submission

to: _____ Task No: _____

Allow 2/3/4weeks – BP _____

EO: _____

Date: _____

AA: _____

Date: _____

File With _____

CORRESPONDENCE FORMAppeal No: ACP ACP - 322154 - 25

M _____

Please treat correspondence received on 19/12/25 as follows:

1. Update database with new agent for Applicant/Appellant _____

2. Acknowledge with BP233. Keep copy of Commission's Letter ☐

1. RETURN TO SENDER with BP _____

2. Keep Envelope: ☐3. Keep Copy of Commission's letter ☐Amendments/Comments KBT Responsible Energy's response to S131 notice**4. Attach to file**(a) R/S ☐(d) Screening ☐(b) GIS Processing ☐(e) Inspectorate ☐(c) Processing ☐RETURN TO EO ☐Re-submit

	Plans Date Stamped ☐
	Date Stamped Filled in ☐
EO: <u>Daniel O'Connor</u>	AA: <u>Shuley Connolly</u>
Date: <u>21/12/25</u>	Date: <u>08/01/26</u>

Dáire Littleton Caden

From: Brendan Buck | BPS Planning <brendan@bpsplanning.ie>
Sent: Dé hAoine 19 Nollaig 2025 09:09
To: Appeals2
Subject: Third Party response lodged to the Commission in respect of Case reference: PL10.322154 - for Kilmanagh Ballycallan Tullaroan (KBT) Responsible Energy
Attachments: BPS Third Party Response in Respect of Appeal Ref. PL10.322154 - for KBT Responsible Energy - 19.12.2025 (1).pdf; Letter from the Commission - Issued deadline of 22.12.2025.pdf

Caution: This is an **External Email** and may have malicious content. Please take care when clicking links or opening attachments. When in doubt, contact the ICT Helpdesk.

Dear Sir/Madam,

RE: An Coimisiún Pleanála - Case reference: PL10.322154. Planning Authority Case Reference: 2560003. Third Party response to letter received from An Coimisiún Pleanála in respect of a First Party appeal lodged in respect of the decision of Kilkenny County Council to refuse planning permission, under planning application Reg. Ref. 2560003 for ten year planning permission at a site situated in the townlands of Acragar, Ballyconra, Ballycuddihy, Ballyroe, Ballyroe (Grace), Ballyroe (Maher), Baunaniska, Boherkyle, Briskalagh, Brittas, Clone, Coolnapisha, Curraghduff, Freshford, Freshford Lots, Graigueswood, Grange, Huntstown, Kilmanagh, Knockeenglass, Knockown, Moatpark, Monabrika, Monavadaroe, Moneenaun, Oldtown, Oldtownhill, Parksgrove, Picketstown, Rathealy, Sart, Sweethill, Tobernapeastia, Tullaroan, Upperwood Demesne, Co. Kilkenny. The development will consist of the provision of the following: i. 7 no. wind turbines with an overall turbine tip height of 185 metres; a rotor blade diameter of 163 metres; and hub height of 103.5 metres, and associated foundations and hard standing areas; ii. A permanent 38kV substation compound (control building with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, storage containers, wastewater holding tank, site drainage and all ancillary works); iii. Permanent underground electrical (38kV) and communications cabling to the existing Ballyragget 110kV substation in the townland of Moatpark (including joint bays, communication and earth sheath link chambers and all ancillary works along the route). This cabling route is primarily located within the public road corridor which includes a Protected Structure (Kilkenny RPS Ref. C886); iv. Underground electrical (33kV) and communications cabling connecting the wind turbines and meteorological mast to the on-site substation; v. 3 no. temporary construction compounds (including site offices and welfare facilities); A meteorological mast with a height of 30 metres, security fencing and associated foundation and hard standing area; vii. A new temporary site entrance on the L1009; viii. A new gated site entrance on the L5024; ix. Upgrade of existing site tracks/ roads and provision of new site access roads, junctions and hardstand areas; x. A borrow pit; xi. Spoil Management; xii. Tree felling and hedgerow removal; xiii. Biodiversity Management and Enhancement Plan measures (including establishment of a riparian buffer and hedgerow enhancement); xiv. Site Drainage; xv. Operational Stage site signage; and xvi. All ancillary works and apparatus. A thirty five-year operational life from the date of full commissioning of the wind turbines and subsequent decommissioning of the wind turbines is being sought. An Environmental Impact Assessment Report and Natura Impact Statement has been prepared in respect of the proposed development and accompany this application.

BPS Planning & Development Consultants LTD, a firm of Irish Planning Institute accredited town planning consultants, have been retained by Kilmanagh Ballycallan Tullaroan (KBT) Responsible Energy, c/o Shane Lynch, Banse, Kilmanagh, Co Kilkenny, R95R207 to respond to your attached letter of 2nd of December 2025 in which you offered the group the opportunity to respond to a submission lodged by the appellant to the Commission on the 28th of November 2025. Your letter states that this response must be submitted on or before the 22nd of December 2025. The attached submission, which represents our client's full response in respect of this matter, is made on or before this date. The submission is made only by email.

I would appreciate it if you could confirm receipt of this emailed submission by return.

I confirm that we represent our client in this matter all future correspondence should be directed to BPS at the address below.

I trust this is in order.

Best wishes, Brendan



**Planning & Development
Consultants**

Brendan Buck MIPI

Managing Director at BPS Planning
Consultants

Phone 01 5394960 **Mobile** 087 2615871

Web www.bpsplanning.ie

Email info@bpsplanning.ie

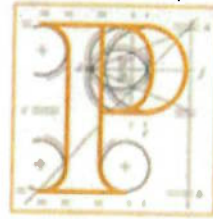
Postal address: PO BOX 13658, Dublin
14

Member of the Irish Planning Institute

Our Case Number: ABP-322154-25

Planning Authority Reference Number: 2560003

Your Reference: KBT Responsible Energy c/o Shar



An
Coimisiún
Pleanála

BPS Planning and Development Consultants
PO Box 13658
Dublin 14

Date: 02 December 2025

Re: For a period of 10 years for a development at the site. The development will consist of the provision of 7 no. wind turbines, and all ancillary works and apparatus. An Environmental Impact Assessment Report and Natura Impact Statement has been prepared in respect of the proposed development and accompany this application.

Townlands of Acragar, Ballyconra, Ballycuddihy, Ballyroe, Ballyroe (Grace), Ballyroe (Maher), Baunaniska, Boherkyle, Briskalagh, Brittas, Clone, Coolnapisha, Curraghduff,, Freshford, Freshford Lots, Graigueswood, Grange, Huntstown, Kilmanagh, Knockeenglass, Knockown, Moatpark, Monabrika, Monavadaroe, Moneenaun, Oldtown,, Oldtownhill, Parksgrove, Pi

Dear Sir / Madam,

I have been asked by An Coimisiún Pleanála to refer to the above mentioned appeal.

The Commission is of the opinion that, in the particular circumstances of this appeal, it is appropriate in the interests of justice to request you to make submissions or observations in relation to the enclosed submission dated 28 November 2025 received from MKO on behalf of Briskalagh Limited.

In accordance with section 131 of the Planning and Development Act, 2000, (as amended), you are requested to make any submissions or observations that you may have in relation to this enclosure **on or before 22 December 2025**. The Commission cannot consider comments that are outside the scope of the matter in question. Your submission in response to this notice must be received by the Commission **on or before the date specified above**.

If no submission or observation is received before the end of the specified period, the Commission will proceed to determine the appeal without further notice to you, in accordance with section 133 of the 2000 Act.

Please quote the above appeal reference number in any further correspondence.

Teil
Glao Áitiúil
Facs
Láithreán Gréasáin
Ríomhphost

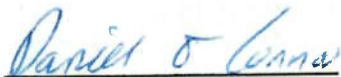
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64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

If you have any queries in the meantime, please contact the undersigned officer of the Commission at appeals@pleanala.ie.

Yours faithfully,



Daniel O'Connor
Executive Officer
Direct Line: 01-8737170

BP70 Registered Post

Tell
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PO Box 13658
Dublin 14

Letter submitted by email to appeals@pleanala.ie

The Secretary,
Planning Appeals Section,
An Coimisiún Pleanála,
64 Marlborough Street,
Dublin 1.

19 December 2025

Dear Sir/Madam,

RE: An Coimisiún Pleanála - Case reference: PL10.322154. Planning Authority Case Reference: 2560003. Third Party response to letter received from An Coimisiún Pleanála in respect of a First Party appeal lodged in respect of the decision of Kilkenny County Council to refuse planning permission, under planning application Reg. Ref. 2560003 for ten year planning permission at a site situated in the townlands of Acragar, Ballyconra, Ballycuddihy, Ballyroe, Ballyroe (Grace), Ballyroe (Maher), Baunaniska, Boherkyle, Briskalagh, Brittas, Clone, Coolnapisha, Curraghduff, Freshford, Freshford Lots, Graigueswood, Grange, Huntstown, Kilmanagh, Knockeenglass, Knockown, Moatpark, Monabrika, Monavadaroe, Moneenaun, Oldtown, Oldtownhill, Parksgrove, Picketstown, Rathealy, Sart, Sweethill, Tobernapeastia, Tullaroan, Upperwood Demesne, Co. Kilkenny. The development will consist of the provision of the following: i. 7 no. wind turbines with an overall turbine tip height of 185 metres; a rotor blade diameter of 163 metres; and hub height of 103.5 metres, and associated foundations and hard-standing areas; ii. A permanent 38kV substation compound (control building with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, storage containers, wastewater holding tank, site drainage and all ancillary works); iii. Permanent underground electrical (38kV) and communications cabling to the existing Ballyragget 110kV substation in the townland of Moatpark (including joint bays, communication and earth sheath link chambers and all ancillary works along the route). This cabling route is primarily located within the public road corridor which includes a Protected Structure (Kilkenny RPS Ref. C886); iv. Underground electrical (33kV) and communications cabling connecting the wind turbines and meteorological mast to the on-site substation; v. 3 no. temporary construction compounds (including site offices and welfare facilities); A meteorological mast with a height of 30 metres, security fencing and associated foundation and hard standing area; vii. A new temporary site entrance on the L1009; viii. A new gated site entrance on the L5024; ix. Upgrade of existing site tracks/ roads and provision of new site access roads, junctions and hardstand areas; x. A borrow pit; xi. Spoil Management; xii. Tree felling and hedgerow removal; xiii. Biodiversity Management and Enhancement Plan measures (including establishment of a riparian buffer and hedgerow enhancement); xiv. Site Drainage; xv. Operational Stage site signage; and xvi. All ancillary works and apparatus. A thirty five-year operational life from the date of full commissioning of the wind turbines and subsequent decommissioning of the wind turbines is being sought. An Environmental Impact Assessment Report and Natura Impact Statement has been prepared in respect of the proposed development and accompany this application.

BPS Planning & Development Consultants LTD, a firm of Irish Planning Institute¹ accredited town planning consultants, have been retained by Kilmanagh Ballycallan Tullaroan (KBT) Responsible Energy, c/o Shane Lynch, Banse, Kilmanagh, Co Kilkenny, R95R207 (hereafter "client") to respond to your letter of 2nd of December 2025 in which you offer our client the opportunity to respond to a submission lodged by the appellant to the Commission on the 28th of November 2025.

Your letter states that this response must be submitted on or before the **22nd of December 2025**. This submission is made on or before this date.

¹ <https://ipi.ie/>

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1.0 Content of this submission made to the Commission

This submission lodged with the Commission comprises advice received from and a number of submissions attached from the following experts:

- This letter from BPS which responds to the appellant submission in a structured manner (see Section 4.0 of this letter).
- Dr Pamela Bartley B.Eng., M.Sc., Ph.D of Hydro-G, 50 Henry Street, Galway, H91 FA 4X. Dr Bartley is a water professional with hydrogeological investigation expertise.
- Dr Patrick Moran, PhD [etc.] – Dr Moran is an expert ecologist (please view his competency statement).
- Mr Les Huson of Huson & Associates and Mr Melvin Grosvenor of Grosvenor Consultancy - Acoustic Consultants.
- Con Sheehan, Consulting Surveyor.
- Mr Roger Goodwillie - Ecologist & BSBI County Recorder for Kilkenny.

The additional expert submissions include:

- Dr Bartley's 'Independent Expert Review for KBT Responsible Energy in respect to the 'Hydrology and Hydrogeology' Response to Further Information as requested by An Coimisiún Pleanála – Case Briskalagh Ltd ABP-322154-25 (Kilkenny County Council refusal 2560003)'.
- Dr Moran's 'PEER REVIEW OF APPROPRIATE ASSESSMENT SCREENING AND NATURA IMPACT ASSESSMENT WITH REGARD TO APPLICATION FOR PLANNING PERMISSION BY BRISKALAGH LTD FOR 'BRISKALAGH WINDFARM' (PL10.322154) DECEMBER 2025'.
- Grosvenor Consultancy Planning & Noise Consultancy Services' 'Review of Proposed Briskalagh Wind Farm Planning Application – RFI submission to An Coimisiún Pleanála 10th December 2025'.
- Con Sheehan, Consulting Surveyor's Further Information Stage Review.
- Huson & Associates' 'Review of Proposed Briskalagh Wind Farm Planning Application – RFI submission to An Coimisiún Pleanála'.

BPS would like to thank each member of the team for advising on the content of this covering submission.

Finally, we note how our client retains F P Logue Solicitors. No further legal submission arises at this time.

2.0 Background

The Commission issued a request for further information to the appellant on the 15th of July 2025, and a further request issued on the 6th of October 2025. The appellant's most recent response of the 28th of November, the subject of your letter issued to our client extends to over 550 pages. It includes significant details and drawings which amend the original scheme and the drawings, reports, and other details originally assessed and refused by Kilkenny County Council. The submitted details include, *inter alia*, new survey results and an amended Natura Impact Statement.

The Commission has invited our client to respond (see the attached letter) and has also required the appellant to re-advertise.

This response adheres to the deadline set out in your letter and not to that issued in the new public notices. We trust this is in order.

3.0 Further Information request issued by the Commission

The Commission's letter issued to the appellant requested the following significant Further Information:

Biodiversity

1. You are required to submit an updated AA Screening Report and NIS which has regard to the changes to the SSCO for the River Barrow and River Nore SAC, as published on 6th June 2025.
2. It is noted that Otter is a QI species of European sites within the Zone of Influence (ZoI) of the proposed development (i.e. River Barrow and River Nore SAC [002162]). All aspects of the proposed development which could result in significant effects on Otter must be considered and assessed within the NIS. Mitigation measures designed to avoid any adverse effects on site integrity must be included and assessed for effectiveness within the NIS. In this regard, the Applicant is requested to submit a revised NIS which includes this information, including details of all Otter activity within all aspects of the proposed development (wind farm site, grid

connection etc). Furthermore, the Applicant shall outline in detail their survey methodology for this QI species both within the proposed wind farm site and along the proposed grid connection route to determine its adequacy.

3. The proposed grid connection route includes underground cabling works which will cross beneath the River Nore SPA [004233] which is designated for Kingfisher. It is noted that no information on the baseline noise conditions at this location and predicted noise/vibration levels associated with the HDD are included in the NIS such that potential significant disturbance effects on kingfisher can be determined. In this regard, the Applicant is requested to submit a revised NIS which responds to this issue which includes the provision of baseline noise conditions, noise/vibration levels associated with HDD, timing and duration of works etc. The Applicant shall also clearly outline the survey methodology adopted for Kingfisher along this section of the River Nore to determine its adequacy.

4. You are requested to submit a detailed site layout plan for the crossing of the River Nore where HDD is proposed. The submitted plan shall clearly identify the locations of the launch and reception pits on either side of the river along with details of all the proposed mitigation measures. A similarly detailed layout plan shall also be provided for all other locations where HDD is proposed along the grid connection route.

5. You are requested to submit an indicative landscape plan and section diagram for the proposed riparian buffer along the Tullaroan Stream (known locally as the Kilmanagh/Tullaroan River). This plan shall provide details of the proposed planting and protective fencing (if required).

6. You are requested to submit a site-specific plan and section diagram of the bridge crossing over the Tullaroan Stream between T6 and T7. The plan and section diagram shall include spot levels for the riverbed and banks and shall clearly illustrate the relationship between the proposed clear span bridge and the new access roads on either side of the watercourse. The plan shall also include details of the relevant mitigation measures required for the protection of water quality.

7. Noting the width of the existing access road leading from the site entrance on the L1009 (Kilmanagh Village) to T7 and the dimensions provided for the proposed and upgraded access roads (including its associated drainage), concerns are raised that the proposal will result in the loss of additional hedgerows and tree lines along this route. This includes a grouping of mature trees at the location where the new access road is proposed. In addition, it is noted that there are tree lines and dense hedgerows that entirely enclose a small field located directly to the north-east of T5, adjacent to the proposed spoil management area. The extent of hedgerow and tree loss would appear to be underreported given the extent of new access tracks proposed at this location. The Applicant is therefore requested to respond to this issue. Should further hedgerow removal/tree loss be required, this shall be clearly identified, and the extent of habitat loss should be updated within EIAR accordingly. It is also noted that the Applicant's Bat Survey Report (Appendix 6-2) should be updated to have regard to the additional hedgerow removal/tree loss on site, if required.

8. You are advised that updated guidance has recently been published from DHLGH on Regulation 54 derogation process for protected species listed on Annex IV (Applications for Regulation 54 Derogations for Annex IV species, Guidance for Applicants, Version 1.0, 1 July 2025). In summary, this guidance requires any derogation to be granted before the approval of the consent to the proposed activity. Noting the number of mature trees on site that have been identified as presenting potential roosting features and which require removal, the Applicant shall satisfy themselves that they can comply with the updated guidance. This may necessitate further surveys of the trees in question to determine whether a derogation may be required.

9. It is noted that there are potential roosting features present within a number of the bridges along the proposed grid connection route (as per Appendix 6-2 of the EIAR). A combination of flatbed formation and horizontal directional drilling are proposed at these bridges. Notwithstanding the Applicant's response in their grounds of appeal, the level of noise and vibration associated with the proposed works is unclear. Uncertainty therefore remains regarding the potential impact of the works on roosting bats and whether a derogation may be required. In this regard, the Applicant is requested to respond to this matter.

10. You are requested to provide a rationale for the exclusion of amphibians or reptiles as KERs given that suitable habitat exists within site and the absence of dedicated surveys for these species. Should amphibians or reptiles be included as KERs, the EIAR should be updated to include suitable mitigation measures. 11. You are required to submit a restoration plan (plan and section diagrams) for the proposed borrow pit.

Noise

1. In terms of cumulative noise impacts associated with the construction phase, it is noted that no detailed analysis of other projects has been provided which would assist in establishing their potential to contribute to cumulative effects in combination with the subject proposal. An example of which includes the multiple grid connection routes connecting wind farms in the area to Ballyragget 110kV Substation. The Applicant is therefore requested to respond to this issue.

2. You are required to submit omni-directional noise predictions for each NSL in tabular format for the proposed development only.

3. You are required to submit the predicted cumulative omni-directional turbine noise levels for each NSL in tabular format, which illustrates both the day and night criterion and identifies any relevant excess.

4. It is acknowledged that you have submitted a map of the study area which shows the predicted cumulative noise level contours at 9m/s wind speed (i.e. Appendix A of Appendix 3 of the First Party Appeal prepared by AWN Consulting) and all NSLs included within Appendix 12-7 (Predicted Cumulative Noise Levels) appear to have now been identified. From a review of the study area map,

it is noted that NSL 270 & 275 are located within the 40dB(A) contour associated with the Foyle Wind Farm. However, a predicted noise level of 35.9dB(A) and 35.3dB(A) has been indicated at these NSLs respectively at 9m/s within Appendix 12-7 of the EIAR. You are therefore requested to clarify these apparent discrepancies.

Hydrology and Hydrogeology

1. You shall provide a robust rationale for the adequacy of the trial pits provided across the site, noting their depth relative to the depth of the foundations for the proposed turbine bases.
2. Concerns are raised regarding the extent of site investigations undertaken for the proposed borrow pit given its proximity to the aquifer and nearby watercourse on site. Noting its location relative to this regionally important gravel aquifer, you are required to establish the impacts of such an excavation on the potential to impact surface water and groundwater flows in the area. Further detailed site investigations shall be provided to fully establish a conceptual site model for flow regimes in this area of the site.
3. Concerns are raised regarding the complete absence of site investigations at the location of T7. Notwithstanding the rationale provided by the Applicant within the Chapter 9 of the EIAR, the absence of data prohibits an adequate assessment of the potential impacts of the development on both groundwater quality and flow dynamics and surface water flows and quality at this location. Therefore you are required to undertake further site investigations proximate to the location of T7 to address this issue.
4. You are required to provide an assessment pertaining to all potential impacts on surface waters flows and/or groundwater flows as a result of dewatering associated within the excavations for the turbine foundations.
5. It is noted that the crossing of the Tullaroan Stream and some access roads are proposed to be located within a flood zone (National Indicative Fluvial Mapping). In addition, there is a history of flood events immediately downstream of the site within the village of Kilmanagh. In this regard, you are required to submit an updated Flood Risk Assessment (FRA) which includes detailed site-specific hydraulic modelling of the Tullaroan Stream which should examine the potential impact on the existing floodplain or on flood risk elsewhere downstream. The updated FRA shall also have regard to the alterations that have been undertaken to the Tullaroan Stream within the boundaries of the site.

Roads and Traffic

1. With the exception of the concrete deliveries for the turbine foundations (7 no. days) and the delivery of the abnormally sized loads (19 no. nights), all other vehicles are proposed to access the wind farm site via the new junction proposed from the L5024 to the north. As per Figure 15-1a of the EIAR, deliveries and construction traffic will access the site from direction of Kilkenny City via the L1007. Vehicles will pass through the village of Tullaroan and then continue south along the L5023, before entering the site via the L5024. To minimise the impact on the local road network, it has been proposed that all vehicles leaving the site will turn right when exiting the site and continue along the L5024 until it meets the L1010. Traffic will then continue south until it meets the R695 and from there, travel east in the direction of Kilkenny City. It is noted that the link flow assessment has been prepared for the section of the turbine delivery route only (i.e. 7 no. days and 19 no. nights as per above). It would therefore appear that the additional volumes of traffic through the settlement of Kilmanagh would be significantly less than what has been depicted within the link flow assessment. However, given the volume of traffic that will utilise the 'Alternative Route' as per Table 15-15 of the EIAR (i.e. General construction + grid connection construction (222 days), and Turbine delivery (standard HGVs) + grid connection construction (7 days), you are required demonstrate that the surrounding local road network can adequately cater for the additional traffic generated during the construction phase of the proposed development.
2. Full road closures and diversions are proposed for Section Nos. 5 & 6 (Table 15-29 of the EIAR) of the proposed grid connection route. This comprises a c. 8.1km stretch of the R694 between Freshford Village and the N77 and it is confirmed that this portion of the route will be subject to road closures for c. 81 days. Noting that the R694 is a key route linking Freshford to Ballyragget and the uncertainty regarding the adequacy of the diversion routes to cater to significant increases in commercial traffic (notably the L1810 and L1811 for Section 5 and the L1811 for Section 6), you are required to consider whether full road closures along this route can be avoided or significantly minimised given that work zones works will typically vary from 100m to 200m in length. Where diversions cannot be avoided, you shall demonstrate that the indicative diversion routes can adequately cater for two-way traffic.
3. During the proposed road closures and diversions within Section Nos. 1 and 2 (Table 15-29) of the proposed grid connection route, you shall clarify how construction access to the site via the L5024 is to be maintained and demonstrate that the indicative diversion routes can adequately cater to the volumes of construction traffic during this period (i.e. 58 no. days).
4. As per Table 15-9 (Trip generation - Stage 1 - Site preparation and groundworks - total movements and volumes per delivery day - Proposed Wind Farm) of the EIAR, it is estimated that a total of 2,400-truck loads of stone will be required for the construction of the proposed wind farm. This constitutes the majority of 2-way PCUs/day (51.59 out of a total of 70.51) during this phase of the construction works. You are therefore requested to clarify whether this is in addition to the site-won material (c. 70,000m³) from the proposed borrow pit, noting the estimated volume (c. 70,000m³) that is to be extracted.
5. You are required to submit a proposed boundary treatment plan/elevation for the northern site access off the L5024. Cultural

Heritage

1. Section 14.3.4.8 of the EIAR notes that there are a 6 no. bridges (CH3-8) of local cultural heritage merit located on the proposed grid connection route and it is proposed to utilise directional drilling at all bridge crossings. Therefore, it is contended that direct effects to the structures are not anticipated. However, it is stated elsewhere in the Chapter and the accompanying drawings that Horizontal Directional Drilling (HDD) is only proposed where the grid connection will cross the River Nore and at Grange Bridge (NIAH Reg. 12400902) (WC2). The underground cables are proposed to be laid in a flatbed formation for all other watercourse crossings. Furthermore, it is noted on Table 4-5 of Appendix 6-2 (Bat Survey Report) of the EIAR that HDD is proposed at WC2, WC10 and WC13. You are therefore requested to clarify these apparent discrepancies and clarify the method proposed for each river crossing.

2. Concerns have been raised by the Planning Authority's Conservation Officer regarding the potential impact of the works on the various historic bridges along the proposed grid connection route i.e. structural damage, insufficient road depth to accommodate the new cables and the potential requirement for heightened parapets due to road build up. You are required to respond to this issue and put forward proposals for HDD at bridges both included on the Record of Protected Structures (RPS Ref. C886) (WC6) and the National Inventory of Architectural Heritage (NIAH Ref. Reg. 12305031 (C886) and 12305012 (New Bridge) (WC5)) located within the urban centre of Freshford.

Landscape and Visual Assessment

1. As per Section 13.2.1 (Scope and Definition of the Landscape and Visual Impact Assessment (LVIA) Study Area) of the EIAR (Chapter 13), a study area of 15km, referred to as the 'LCA Study Area', was deemed appropriate for effects on landscape character. Notwithstanding this, a 20km study area has been provided on all mapping within the Chapter. Please clarify whether a 20km study area has been adopted for the purposes of the LVIA.

General 1.

1. In terms of the consideration of alternatives (Chapter 3 - Consideration of Reasonable Alternatives of the EIAR), a total of four no. 110kV substations have been identified by you within 25km of the development site. It is stated that initial grid studies identified Ballyragget 110kV substation as the suitable option and a grid connection route to this substation was considered and assessed to determine its viability. You are required to provide a rationale for the identification of Ballyragget 110kV substation as the optimum connection node for the proposed development

2. Noting the concerns raised by both the Planning Authority and TII regarding the absence of a plan led approach to private grid connections and its associated impacts, you shall also outline why 'Proposed Grid Connection Underground Cabling Route Option No. 1' was discounted despite this route being adopted for the permitted Farranrory grid connection route (Kilkenny CC Pl. Ref. 21/627) and the absence of an acknowledgement of same within the consideration of alternatives (i.e. Chapter 2 of the EIAR). You are also required to consider further the cumulative impact of the proposed grid connection route from a traffic and transportation perspective given a number of the indicative diversion routes (Section Nos. 5 & 6 (Table 15-29 of the EIAR)) for the proposed grid connection overlap with the permitted grid connection route (Kilkenny CC Pl. Ref. 21/627) serving the Farranrory Wind Farm (Tipperary CC Pl. Ref. 20/972).

3. Having regard to this further information request, you are required to provide a summary of all amendments to the EIAR, NIS and other supporting information. All changes are to be clearly identified. You are also invited to submit any errata/corrections to the EIAR, NIS and any other supporting information with its response to this further information request. As above, all changes are to be clearly identified.

4. You are required to provide a response to any issues raised in the third party observations to the appeal, all of which are enclosed with this letter. If the document/particulars/other information required is/are not received before the end of the specified period, the Commission will dismiss or otherwise determine the appeal without further notice to you in accordance with section 133 of the 2000 Act, (as amended). Your submission in response to this notice must be received by the Commission not later than 5.30 p.m. on the date specified above.

4.0 Objections to the appellant's Further Information submission

The primary purpose of our client's submission is made to confirm their support of the decision made by Kilkenny County Council to refuse planning permission. They are steadfastly opposed to this project and for the reasons set out in the objections and observations they have consistently lodged since this planning application was lodged up to the present stage of this planning appeal. Our client has, with respect, earned their standing within the ongoing planning process.

The request for Further Information issued by the Commission is extremely detailed and has generated an extremely detailed response from the appellant. It is the opinion of our client's group and their experts that the very fact that the Commission has felt it necessary to ask for such a volume of additional detail confirms the original planning application was poorly considered and improperly justified by the details and documents submitted by the appellant.

The Commission has been forced to, in effect, guide the appellant toward a great many areas where the planning application, now appeal, remains deficient. The appellant argues in their exhaustive submission that this guidance has been productive and that, once again, they have addressed all planning issues arising. Our client does not agree with this.

Our client responds as follows to the appellant's submission and on an item by item basis.

4.1 **Item 1: Biodiversity**

In preparing this submission, our client has been advised by Dr Moran who is an expert ecologist. Dr Moran has provided the accompanying document titled, 'Peer Review of Appropriate Assessment Screening and Natura Impact Assessment with Regard to Application for Planning Permission by Briskalagh Ltd for "Briskalagh Windfarm" (PL10.322154) December 2025'.

Dr Moran has reviewed the appellant's appeal stage FI submission and he remains concerned over, *inter alia*:

- Inadequate methodology with regard to establishing vantage points, undertaking viewsheds, collision risk modelling and establishing zone of influence ("Critical to assessing any adverse impacts on the integrity of proximate SPAs is the accuracy and scientific robustness of the Collision Risk Modelling. The appellant has presented Collision Risk Modelling based on inaccurate and subjective viewshed analysis, on which vantage point surveys (using only a single vantage point) were based on subjective information, and cannot be considered to be scientifically robust. The findings of the Collision Risk Modelling as informing the zone of influence and AA screening/NIS must be considered to be fatally flawed and not fit-for-purpose").
- Inadequate assessment of impacts on diurnally active species ("Neither the AA screening, nor the NIS contain any consideration of ex-situ impacts on birds commuting/foraging within the flight activity survey area at night. No survey effort of any sort was undertaken to establish if Golden Plover or Lapwing, utilise the development site or environs post-sunset for commuting/foraging purposes. Day-time distribution of this species cannot be used to predict post-sunset use of habitats¹⁴. The failure to thoroughly assess exsitu impacts and consider indirect impacts on SPAs outside the identified zone of influence must be considered a fatal flaw in the AA process as relates to the proposed development").
- Inadequate assessment of impacts of proposed development on the Conservation Objectives of White-clawed Crayfish ("With regard to QIs of potentially impacted Natura 2000 sites, all mobile QIs must be considered potential ecological receptors. Despite the recorded presence of White-clawed Crayfish remains within Otter spraint surveyed on site and the detected presence of crayfish plague, the appellant has deemed that there is no risk of the spread of crayfish plague owing to a lack of instream works. No cognisance has been given to the potential impact of flooding of the watercourse or morphological changes to watercourses associated with works for grid connections with regard to the spread of crayfish plague").
- Inadequate consultation of relevant Natura 2000 data forms ("According to EU Guidelines one of the primary steps in the AA screening process is consultation of Natura 2000 data forms for relevant sites. The lack of evidence for significant consultation of the standard Natura 2000 data form for relevant sites must be seen as a fatal flaw in the AA process").
- Inadequate assessment of risk for bat species as a species integral to the ecological functioning of European sites ("The appellant has prepared a document relating to impact on bat species based on UK guidelines, without taking into account differences in bat distribution and abundance between the UK and Ireland").

While the Commission has challenged the appellant on aspects of Dr Moran's concerns, the appeal stage FI request is incomplete and the appellant's response to this also so. Dr Moran is left with no choice – at this late stage in the planning process – but to conclude:

Despite the nature of the proposed development, it is the opinion of the author of this peer-review report, that the conclusions of the NIS prepared with regard the planning permission application for the Briskalagh Windfarm are fundamentally and critically flawed. The documents as provided cannot sufficiently inform an Appropriate Assessment of the proposed development by the Competent Authority, owing to a combination of factors, including the lack of adequate information to assess the potential impact of the proposed project, alone or in combination with other plans/projects on the environment and/or Natura 2000 network. It is respectfully requested that An Coimisiún Pleanála recognise that there are significant omissions, gaps and lacunae occurring within the information as submitted. It is deemed by the author of this review that the NIS prepared on behalf of Briskalagh Ltd is noncompliant with the Habitats Directive.

Our client and their advisors offer the following individual responses to the appellant's submission on biodiversity grounds.

4.1.1 **Response to Point 1, Item 1**

As Kilkenny County Council's [hereafter "KCC"] response to the Commission notes:

Item number 1 of the further information request relates to an undated screening report required due to changes to the SSCO for the River Barrow and river Nore SAC on the 6th of June 2025. It should be noted that Kilkenny County Council made its decision to refuse the application on the 27/02 /2025 for three reasons. An Coimisiún Pleanála needs to satisfy itself that the AA screening and NIS (revised) are fit for purpose in arriving at its decision. This will ensure that any decision is robust and can withstand any potential challenge under the judicial review process.

Our client, which retains FP Logue Solicitors, does not consider that the updated AA Screening Report and NIS to be fit for purpose. It does not have adequate regard to the changes to the SSCO for the River Barrow and River Nore SAC, as published on 6th June 2025.

Please refer to the attachments prepared by Dr Pamela Bartley and Dr Patrick Moran.

4.1.2 Response to Point 1, Item 2

In relation to the Otter species the Commission has correctly identified that the Otter is a protected species. As in point 1 above the commission needs to satisfy itself as to the adequacy of the information provided for its assessment and ensure that sufficient protection is provided for the Otter as a QI species.

It is our client's opinion that insufficient information is provided.

The original Otter (*Lutra lutra*) surveys were carried out at the end / outside of the optimal period for surveying activity, particularly regarding sett and holt activity, and general signs. Potential Otter holts were identified during surveys, that are within the zone of influence of the proposed development, with limited activity, due to the timing of the surveys. This potential bias in survey timing was not discussed in the assessment and should be referred to and surveys supplemented in order to support a comprehensive report.

The appellant's Revised Natura Impact Statement refers again to all previous surveys and has now provided one updated survey for Otter. The RNIS states:

An additional survey of previously identified potential otter holts within approximately 150m upstream and downstream of any proposed infrastructure, and the proposed HDD location under the River Nore, was carried out on 3rd September 2025. The purpose of this survey was to assess whether any changes to these previously identified potential holts had occurred during the interim period and determine what level of otter activity, if any, these areas are subject to **emphasis added**.

The difficulty is that this survey has been carried out outside of the best month for such surveying which is May. The overall window for surveying is April to September. September is late for surveying, and the month was quite wet. Concerns that September of 2025 was less than perfect for surveying is clearly discernible from the revised NIS which states: "surveyors did note that the area provides suitable otter habitat and the river here is fast flowing". It was fast flowing due to heavy rainfall in September.

Further, our client is concerned over the lack of assessment methodology applied by the appellant in the September survey. This methodology reads much like a walk through. There is reference to more detailed surveys in previous years. Why was the September survey not more detailed? The answer is that the appellant did not have time to undertake adequate surveys. The appellant has left it to very late in the assessment process to try to address flaws in the NIS.

There are multiple instances in the updated NIS where the appellant attempts to link the September survey to previous more detailed surveys in an attempt to make the September survey read as more credible. Rather than the September survey being a major new survey to address the Commission's concerns, the appellant's approach is more to refer to the new survey as validating previous surveys (which were carried out at better times and in a more detailed manner). For example, the updated NIS states: **"This was confirmed** in the updated survey carried out on 3rd September 2025 which did not detect signs of otter activity or identify any indication of otter breeding or resting at this location" **emphasis added**. Of genuine concern, is that this one additional survey clearly focused on previously identified otter holts:

In addition to the above, one additional survey of previously identified potential otter holts within approximately 150m upstream and downstream of any proposed infrastructure, and the proposed HDD location under the River Nore, was carried out on 3rd September 2025 (see Section 3.3.1.2) **emphasis added**.

The approach is clearly set out on Page 3 which states: "Updated site surveys, to ground truth the results of previous surveys undertaken and record any changes that may have occurred in the interim, were carried out in targeted locations by Caroline Kelly and David Mesarcik (BSc) on the 3rd September 2025". In this way, the Commission is not provided with a new definitive survey but with a project team's arguments to support its position that: "The potential for direct habitat loss has been discounted, given the results of surveys undertaken ..."

Our client submits that Otter is a QI species of European sites within the Zone of Influence (ZoI) of the proposed development (i.e. River Barrow and River Nore SAC [002162]). The appellant has failed to fully consider and assess all aspects of the proposed development which could result in significant effects on Otter.

The mitigation measures included by the appellant are based on insufficient surveys. Concerns arise that the revised NIS fails to confirm beyond all scientific doubt that there will not be any adverse effects on site integrity and on otter activity arising from all aspects of the proposed development.

The appellant asks the Commission to address this matter by way of condition. This is not accepted as all possible adverse impacts must be assessed 'before' any decision is made. The appellant states:

*In recognition of the fact that otter is a **mobile species** which could **potentially migrate** within the site, and that there is suitable habitat for otter in the vicinity of the Proposed Project (i.e. watercourses and associated riparian vegetation), mitigation includes a **precommencement otter survey** which will be undertaken in accordance with best practice guidance prior to the commencement of site works. Mitigation measures to reduce the effects of construction-related disturbance to local otters are also provided [emphasis added].*

The appellant asks the Commission to join them in hoping the otters will be somewhere else at construction stage. They are, after all, "mobile", they could "potentially migrate". The proposal for a pre-commencement survey is not accepted. This matter is either addressed or not. Likely significant impacts ignored at this stage.

4.1.3 Response to Point 1, Item 3

Our client agrees with KCC's submission to the Commission which states: "the Commission needs to satisfy itself that the proposed development will not impact on the Kingfisher which is the designated species for the SPA. This includes not only any mitigation proposed but that the survey work is sufficient and robust for its purpose".

Noise and vibration concerns

The group has repeatedly noted how the proposed grid connection route includes underground cabling works which will cross beneath the River Nore SPA [004233]. This crossing raises a range of concerns. The Commission has noted that there may be significant noise impacts on Kingfisher such that the NIS needed to be updated to reflect this.

Our client's group retains Mr Les Huson of Huson & Associates and Mr Melvin Grosvenor of Grosvenor Consultancy - Acoustic Consultants and Mr Roger Goodwillie - Ecologist & BSBI County Recorder for Kilkenny. These experts in noise and in how noise can impact ecology share the Commission's concerns.

The original NIS was deficient as regards baseline noise conditions at this location and a lack of predicted noise/vibration levels associated with the HDD. The appellant has submitted a revised NIS which includes the provision of baseline noise conditions, noise/vibration levels associated with HDD, timing and duration of works, etc. stating: "On the 2nd of September 2025, baseline noise and vibration surveys were undertaken by AWN at the Grid Connection Horizontal Directional Drilling (HDD) crossing point of the River Nore SPA". Our client has reviewed Appendix 5 of the RFI.

The appellant notes how the construction noise proposed at the riverbank include "drilling noise levels at the HDD crossing point of the River Nore are predicted to be 62-71 dB at the riverbank" and "At the higher end of the predicted vibration range, i.e. at 5mm/s there is the potential for disturbance. Disturbance (visual and noise) has been observed in this species within 50-100m (Goodship & Furness, 2022). There is, therefore, a noise/vibration stimulus within this potential zone of disturbance, i.e. within 50-100m". Our client's group is concerned at how the appellant NIS attempts to play down these concerns referring to how the noise could be worse.

The group agrees with the appellant that: "it cannot be ruled out that kingfisher forage within the zone of potential disturbance (i.e. within 50-100m of the HDD location)". They do not however give the proposal the benefit of the doubt in the manner the appellant does. The appellant's position is that they believe they will be lucky and the subject area of the River Nore will turn out to be one where the species is not present at the time ("The rationale for this is that there is an uneven distribution of the species in the River Nore").

The updated NIS accepts that it must follow "the precautionary principle" and so "foraging cannot be ruled out locally".

Our client's noise experts do not agree with the updated NIS assessor that the predicted noise levels associated with the HDD, will be "**similar to ambient noise levels**" [emphasis added]. Where along the River Nore's banks does 62-71 dB presently arise in ambient conditions? Walking along the river one does not regularly come across construction project drilling taking place.

In any case, the updated NIS, the MKO covering submission, and the submitted noise survey results do not match. The covering submission contradicts

*In relation to noise levels associated with HDD, **levels vary with, among other things, the site conditions**, but are predicted to be similar to existing ambient noise levels, i.e. approx. 62 dB at the riverbank, which is 30m distant from the proposed HDD drilling pit. Please refer to drawing 230502- 76FI, included in Appendix 2 of this RFI, for layout and section details of the HDD crossing. **The noise levels associated with construction machinery are predicted to be similar but slightly above ambient noise levels at 30m, i.e. the cumulative construction noise level is predicted to be 71 dB** [emphasis added].*

ACP is asked to review the appellant's own background ambient noise results. These show background noise levels of below those stated in the NIS and the appellant's covering submission.

Table 2-3. N1 Noise Monitoring Results

Date	Location	Start Time	Measured Noise Levels (dB re.2x10-5Pa)	
			LAeq	LA90
02 September 2025	N1	10:40	57	41
		11:55	59	41
		13:07	60	42

Fig. 1: Appellant's Table 2-3. N1 Noise Monitoring Results

Table 2-4. N2 Noise Monitoring Results

Date	Location	Start Time	Measured Noise Levels (dB re.2x10-5Pa)	
			LAeq	LA90
02 September 2025	N2	11:00	67	48
		12:16	69	51
		13:31	68	51

Fig. 2: Appellant's Table 2-4. N2 Noise Monitoring Results

Table 2-5. N3 Noise Monitoring Results

Date	Location	Start Time	Measured Noise Levels (dB re.2x10-5Pa)	
			LAeq	LA90
02 September 2025	N3	11:30	61	37
		12:42	59	37
		13:59	60	38

Fig. 3: Appellant's Table 2-5. N3 Noise Monitoring Results

The devil is in the detail. The ambient noise levels are not 62-71 dB. These are not credible figures and the appellant's own background ambient noise survey results contradict these claims. The project claims noise levels during construction will be a minimum of 71dB. This is below what one might expect from a large drilling operation with machinery at ground level alongside a river in a very quiet environment. This noise can reach 84dB. However, the appellant argues the noise the drilling rig will cause will be 77dB. This seems low. Other machinery such as an excavator and a dumper truck will have noise levels of 78-83dB. How is this similar to ambient noise levels?

Please refer to the attached submissions which address the issue of noise.

Table 1: Predicted Cumulative Noise Levels at River Nore HDD Crossing

Item (BS 5228 Ref.)	Plant Noise level at 10m Distance (dB LAeq,T)	Predicted Noise Level (dB LAeq,T) at distance (m)
Distance (m)		30 m
Mini Tracked Excavator with Rock Breaker (C5.2)	83	67
Dumper Truck (C.4.2)	78	62
Wheeled Loader Lorry (C.2.28)	76	60
Asphalt Spreader (C5.30)	75	59
Vibratory Rollers (C.5.30)	75	59
Microtunnelling (Generator) (based on C2.44)	77	61
HGV Movement (C.2.30)	79	63
Cumulative Predicted Construction Noise Level		71

Fig. 4: Appellant's predicted noise at the River Nore crossing

The appellant covering submission tries to downplay this noise concern stating:

*It is noted that **once the site of the HDD is prepared** there is unlikely to be much machinery noise other than the drill and generator, this should lead to reduced noise levels during these periods. Using the sound power levels for the Vermeer D8x12 and the Vermeer D40x55, the predicted noise level at the rivers edge (30m from the drill pit) is 62 dB LAeq assuming on-time of 100%, i.e. running continuously [emphasis added].*

Concerns arise that the updated NIS fails to provide the Commission with the confidence to determine that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of the European (Natura 2000) site.

Critically, the updated NIS assessor accepts how: "... there is a possibility of disturbance from vibration at the high end of the predicted range (5mm/s). Without intervention, following the precautionary principle, likely significant effects cannot therefore be ruled out for the foraging kingfisher of the SPA at the HDD crossing point".

The measures then proposed to address this are ones which have already been submitted in the original planning application. These were refused by KCC and formed the reason why the Commission has sought Further Information.

The updated NIS again states:

To avoid potential adverse effects with regard to potential disturbance effects on this SCI species, the following mitigation measure is prescribed:

- The HDD works proposed beneath the River Nore will be undertaken outside the bird nesting season (i.e. outside March and July inclusive). This measure will effectively eliminate any possibility of an adverse effect for kingfisher during the breeding season. Notwithstanding the above, the following additional mitigation measure is prescribed:
- A pre-commencement kingfisher survey will be undertaken prior to any HDD works to confirm the absence of kingfisher nest sites within 100m (i.e. the upper end of the predicted zone of influence for noise and vibration effects) of the proposed crossing point. If breeding sites are identified and occupancy confirmed, all construction works within 100m will be suspended until the nest is no longer occupied.

With all due respect, had KCC and the Commission considered that these concerns could be addressed merely by requiring the construction phase to take place outside of given months, this would have been conditioned. This is not accepted.

The proposal to carry out more surveys asks the Commission to ignore the precautionary principle and the risk and to allow the entire project to progress knowing that kingfishers may be an issue. The proposals literally offer to halt the entire project if a breeding site is identified within 100m of the works. That this is even a possibility highlights the unsuitability of the proposed works and the lack of robustness in the appellant's proposals and the NIS assessment.

The potential for impacts on this SPA are identified in Section 4.1 of the updated NIS. The identified pathways for effect include: "Disturbance effects on populations of commuting and foraging kingfisher, associated with the SPA, in the vicinity of the Proposed Grid Connection underground cabling works beneath the River Nore". These concerns remain.

Fig 2-2. Measured Vibration Levels at N1

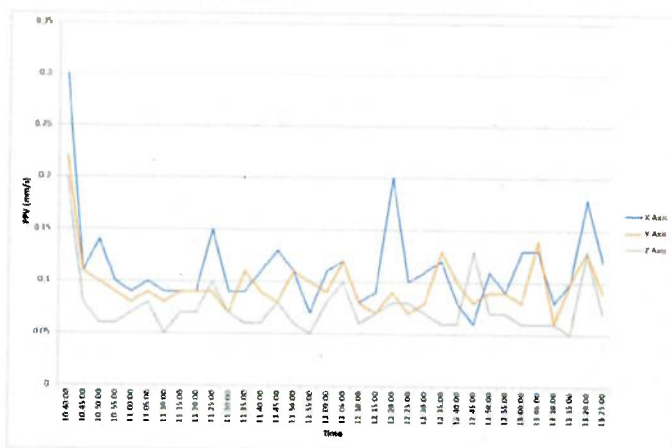


Fig. 5: Appellant's Fig. 2-2. Measured Vibration Levels at N1

Survey concerns

The Commission stated: "The Applicant shall also set out a survey methodology adopted for Kingfisher along this section of the River Nore". Several concerns arise as regards the submitted response.

Kingfisher is a Schedule 1 species (Wildlife Act) and Annex I (Birds Directive). EIAR/NIS screening generally requires at least two breeding-season visits (April–June) if suitable habitat (slow-moving or still freshwater with steep earth banks) is present within 250 m. The best single month to survey is May. The best overall window is April – June inclusive. Latest acceptable for breeding survey is end of July. From August onwards, surveys should not arise. The appellant's updated survey took place in September (and a wet September at that). It is the position of our client's group that an adequate Kingfisher breeding survey would have to wait until April 2026 at the earliest. The appellant's new details are inadequate.

Given how the updated survey took place outside of the acceptable months for such surveys to take place, it is hardly surprising that (... no evidence of kingfisher was recorded during surveys of the banks of the River Nore approximately 150m upstream and downstream of the proposed HDD crossing location on the 3rd September 2025).

The appellant's updated NIS accepts the suitability for the watercourse for Kingfisher stating: "However, the watercourse was deemed to offer suitable commuting and foraging habitat for kingfisher owing to the presence of occasional overhanging branches which could be used for perching".

The Commission is also reminded that the original appellant NIS noted "... given the number of observations of kingfisher along the Tullaroan Stream, and the presence of suitable nesting banks and following a precautionary approach, it is considered that a possible breeding territory was present along this watercourse within the Proposed Wind Farm site in 2021 and 2022".

The appellant's September surveys are treated, as per those for the Otter, as claimed validation of previous surveys. This is due to September being an unsuitable month for surveying. Concerns arise that these results do not validate the appellant's earlier surveys.

The appellant also fails to properly and fully assess cumulative impacts. The updated September surveys are treated as a catch-all way to validate the entire updated NIS. These surveys which comprise, it appears, one site visit, are inadequate and took place at a less than optimum time. This impacts the Otter and the Kingfisher.

4.1.4 Response to Point 1, Item 4

Our client agrees with KCC's submission to the Commission which states:

Items 4- 7 of further information request are noted and that the Commission is seeking details on the River Nore crossing a landscape plan and section diagram for the riparian buffer along the Tullaroan stream. It should be noted by the Commission that in assessing the application before it, Kilkenny County Council considers notwithstanding the further information request from An Coimisiún Pleanála that the proposed development has significant potential for adverse impacts due to cumulative impacts. The applicant's presentation of the assessment of cumulative effects generally fails to identify if there is real potential for cumulative effects to occur as a result of any specific other plans, projects or activities in the area; or the environmental factors under which such effects may arise. The response to item 7 by the applicant demonstrates clearly the inaccuracies of the information supplied to the Council as Planning Authority. An additional 120m of hedgerow loss has been identified with a total loss proposed of 1,508 m. Overall the Planning Authority considers this as a significant loss of hedgerow.

The appellant has submitted what could be best described as context free illustrations for the crossing of the River Nore where HDD is proposed. These lack the significant detail one would expect from a detailed site layout plan.

To fully understand what is proposed, it would be necessary for the appellant to submit a much more detailed site layout plan accompanied by a tree survey, Arborist's Report, site photographs, cross sections, and likely aerial/drone footage.

Being basic illustrations devoid of context, the appellant's drawings – these are essentially construction stage detailing type drawings – it is possible to understand what is proposed. However, the locations of the launch and reception pits on either side of the river are only shown insofar as the appellant wishes to use these illustrations. There is insufficient detail on which to base the Commission's assessment.

As the appellant offers such little detail, it is difficult to follow what is proposed by way of mitigation. It is certainly much as assessed by KCC.

Our client has read the appellant's covering submission and reviewed these drawings; they submit that the KCC decision should stand. The proposals would adversely impact the existing landscape, the river, the environment, and biodiversity at this location. The proposal has cumulative impacts not fully addressed by the appellant.

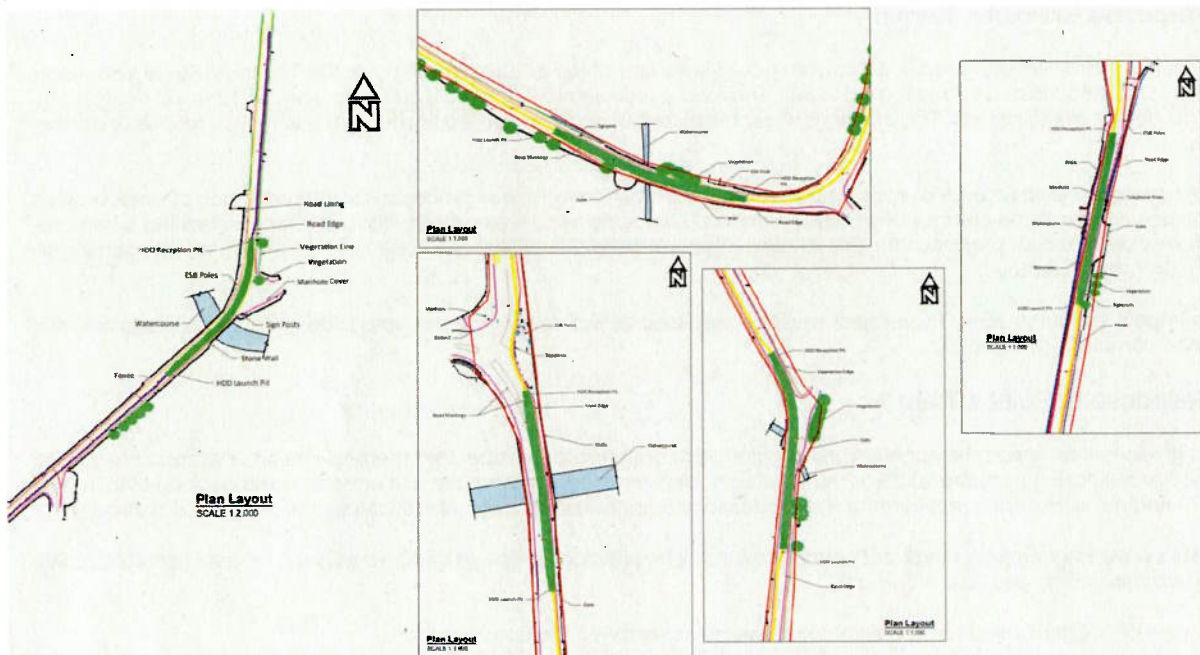


Fig. 6: Context stripped layout plan illustrations provided with the Further Information submission

4.1.5 Response to Point 1, Item 5

Our client has reviewed the submitted drawings and, again, considers that the landscape plan and section diagram details submitted are inadequate to fully illustrate and assess the likely impact of the proposed riparian buffer along the Tullaroan Stream (known locally as the Kilmanagh/Tullaroan River). They are concerned, as KCC has also expressed, with these proposals to interfere with the riparian environment at Kilmanagh/Tullaroan River.

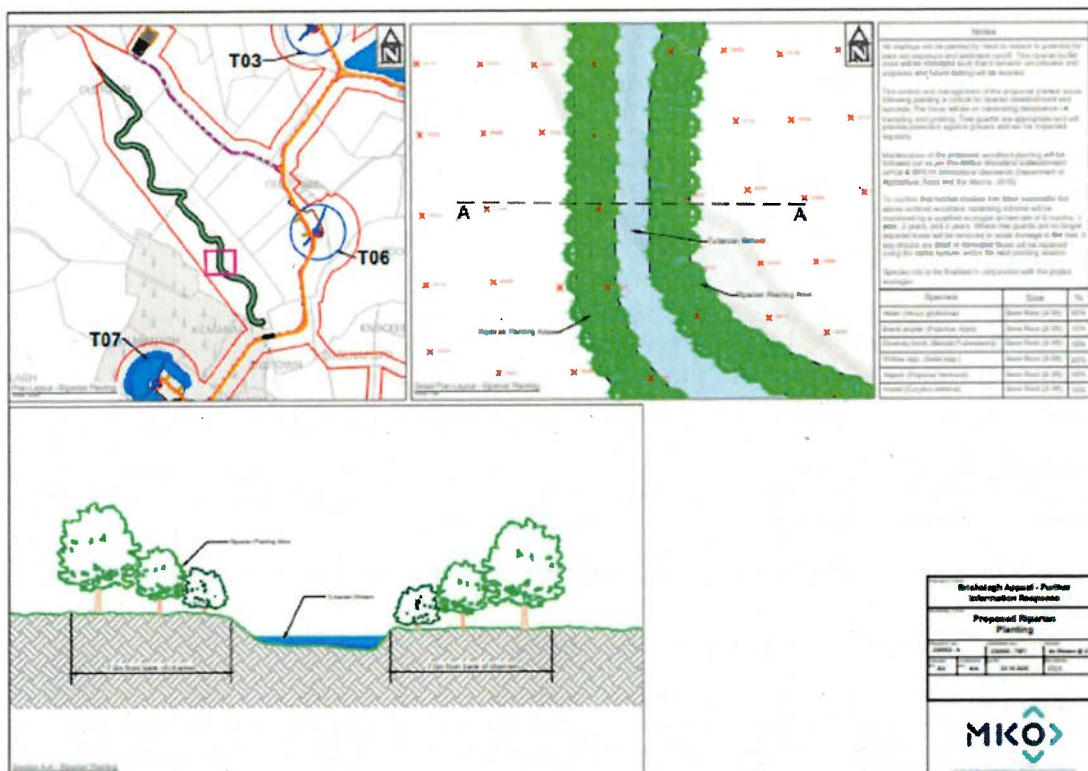


Fig. 7: Proposed riparian planting

4.1.6 Response to Point 1, Item 6

The appellant has submitted site-specific plans and section diagrams of the bridge crossing over the Tullaroan Stream between T6 and T7. The submitted plans include limited levels. The road level is shown but there is little detail beyond this with indications given of likely depths of drilling, etc. The drawings show the extent of works proposed and illustrate why KCC refused planning permission.

The appellant has submitted amended reports which repeated mitigation measures proposed for the protection of water quality. These measures are the same ones as originally submitted. Concerns as to water quality impacts appear justified when one considers the scale of works proposed for this single project to make this crossing. Please refer to the attached submission prepared by Dr Pamela Bartley

Cumulative impact concerns arise. The project must be assessed as indivisible. The entirety of the project's impacts are, our client submits, cumulatively significant.

4.1.7 Response to Point 1, Item 7

Our client's group has reviewed the appellant submission and continues to consider that there will be an unacceptable loss of trees and hedgerow arising from the width of the existing access road leading from the site entrance on the L1009 (Kilmanagh Village) to T7 and the dimensions provided for the proposed and upgraded access roads (including its associated drainage).

The appellant's covering submission now accepts that there will be additional tree and hedgerow losses, i.e. the original planning application was misleading and KCC is correct:

Additional areas of hedgerow and linear habitat loss have been identified. These comprise:

- A 7 m section of hedgerow at northern Site entrance (Plate 1);
- A 15 m section of hedgerow at the entrance to the temporary construction compound proposed for removal (Plate 2);
- A 27 m section of hedgerow at the temporary site entrance to the south proposed for removal (Plate 3);
- A 72 m section of treeline along the access route in the south of the site (Plate 4);
- A 10 m section where the access track meets the conifer forestry block south of T7 (Plate 5);
- A 16 m section of hedgerow will require removal at the proposed substation entrance (Plate 6); and
- As to the spoil management area to the east of the T5 access track (Plates 7 & 8), the appellant states "the hedgerow loss appears to have been accurately quantified in the EIAR (see Figure 6-1 of the Bat Report and Figure 1-1 of the BMEP)".

This assumes that loss is confined to the road and hedgerow intersections, with no removal required where the access track runs parallel to the hedgerow. There is likely to be additional losses.

As Figs. 8-12 illustrate, as an example area, the proposal will still result in the loss of a grouping of mature trees at the location where the new access road is proposed.

The appellant has not provided sufficient drawings, details, photographs, etc. to address concerns for the tree lines and dense hedgerows that entirely enclose the small field located directly to the north-east of T5, adjacent to the proposed spoil management area.

The extent of hedgerow and tree loss is still underreported given the extent of new access tracks proposed at this location.

ACP noted how, should further hedgerow removal/tree loss be required, this shall be clearly identified, and the extent of habitat loss should be updated within EIAR accordingly. It is also noted that the appellant's Bat Survey Report (Appendix 6-2) should be updated to have regard to the additional hedgerow removal/tree loss on site, if required.

Despite KCC's concerns over the loss of hedgerow which is proposed; there is a lack of detail as to existing hedgerow and proposed hedgerow losses.

We note the concerns raised by CAAS originally on behalf of KCC which stated:

A hedgerow appraisal was not provided in the Biodiversity Chapter. Hedgerows can vary widely in their ecological value depending on several factors and their removal therefore can have varying impacts on biodiversity. The above issues call into question the integrity of the botanical and habitats baseline for the proposed project as a whole. It is currently insufficient to provide the planning authority with the required knowledge regarding the baseline of the proposed site. A detailed map of the full extent of habitat types that will be lost as a result of the proposed project, with accompanying text describing indicators of value (for example value of hedgerow and length to be lost, or area of grassland and species ratios to be lost),

is absent in the assessment. This should be provided in detail and to the appropriate scale for each section where habitats are proposed to be removed (either permanently or temporarily, which should also be noted) in order to provide the planning authority with a full view of the potential impacts to habitats resulting from the proposed development, and consider the suitability of the proposed mitigation in terms of ecological corridors and planting plans.

The information provided regarding the suitability of the various habitats on site for commuting and roosting bats, and the interactions between these habitats and the proposed development is insufficient for a complete assessment, in particular for the area of the site proposed for wind turbines. Summary text on the suitability of various suitable habitats such as hedgerows, treelines, woodland and grassland etc. is provided in section 4.3.1.1 of the accompanying bat report; however, this text is lacking any context as to the location of these habitats in relation to the proposed wind turbines, or the locations of areas where habitat, be it grassland, hedgerow, treeline etc., will be permanently lost.

The appellant has not provided an updated Biodiversity Chapter with this Further Information submission.

The updated NIS offers little new information or detail on hedgerow loss and the impact on this as a habitat for various species. The original and the updated NIS reports read as much the same. Indeed, the appellant's covering submission's response to Item 1 refers to an updated NIS but not to new details on hedgerow habitats, etc:

*MKO has provided an Revised Appropriate Assessment Screening Report and Natura Impact Statement (NIS) as a standalone report (included here as Appendix 3 of the RFI). The Revised NIS has considered the changes to the SSCOs for the River Barrow and River Nore SAC, as published on the 6th June 2025, specifically the removal of Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*) [1990] and inclusion of Reefs [1170] as Qualifying Interests (QI) of this SAC. In addition, updates to the conservation objectives for Freshwater Pearl Mussel (*Margaritifera margaritifera*), Estuaries [1130] and Mudflats and sandflats not covered by seawater at low tide [1140] have been captured in the Revised NIS provided. All elements of the FIR relevant to Appropriate Assessment have been captured in the Revised NIS (e.g. Further Information Item No. 2 and Further Information Item No. 3) to ensure that a full and complete assessment is provided.*

Despite KCC's and CAAS's concerns and the appellant's acceptance of a significant quantum of additional tree and hedgerow loss which are habitats within this area, the appellant states:

In conclusion, approximately 120 m of additional hedgerow loss has been identified. This has been incorporated in the mapped figures and updated within the Revised NIS (Appendix 3) and Revised Bat Survey Report (Appendix 4 of this RFI) ensuring that the total habitat loss is accurately reflected across all relevant assessments. The revised total loss of linear vegetation (1,508m) is an accurate reflection of the extent of liner vegetation removal expected within the Proposed Wind Farm site. The inclusion of this short additional extent of hedgerow loss is not of a significant magnitude in the context of the overall assessment and does not alter the findings, conclusions, or significance of effects reported in the EIAR.

No full and properly updated assessment of tree and hedgerow loss is included in the NIS, the EIAR, etc. The appellant has failed to properly respond to the Commission's request.



Plate 1 Heavily managed 7m hedgerow at northern Site entrance proposed for removal



Plate 2 15m hedgerow section (right) at entrance to temporary construction compound – proposed for removal



Plate 3 Heavily managed 27m hedgerow at site entrance (L1009) – proposed for removal and reinstatement



Plate 4 72m section of treeline to be removed to facilitate a new road in the south of the site



Plate 5 10m section of habitat loss at conifer forestry block south of T7 6m access road, with new edge habitat created along the new road



Plate 6 16m substation entrance location



Plate 7 Hedgerow surrounding spoil management area adjacent to T5. No additional removal required



Plate 8 Additional view of hedgerow enclosing spoil management area at T5. No additional removal required

Fig. 8: Photos of the hedgerows to be removed as set out in the appellant covering submission



Fig. 9: Originally submitted proposed hedgerow losses



Fig. 10: Originally submitted & Further Information stages proposed hedgerow losses

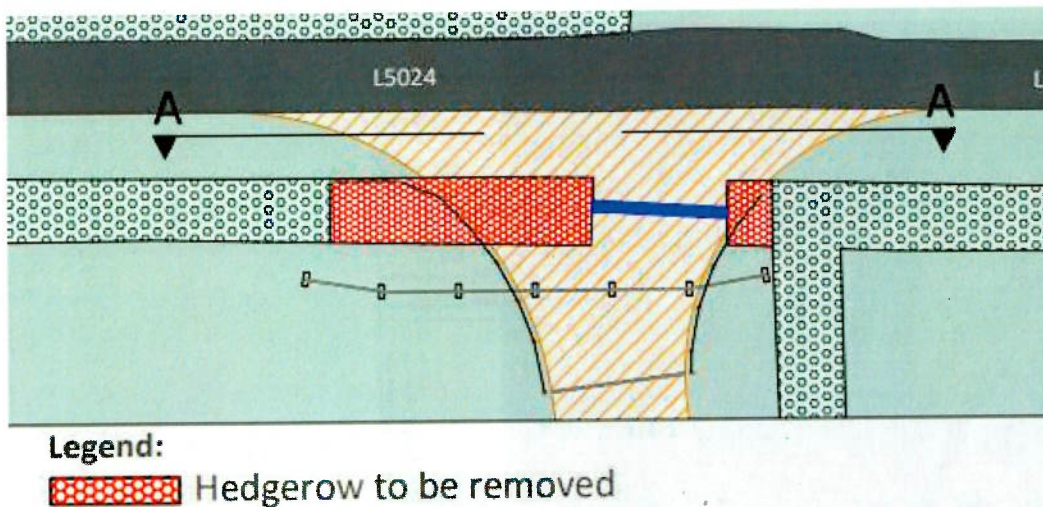


Fig. 11: Hedgerow to be removed (1)

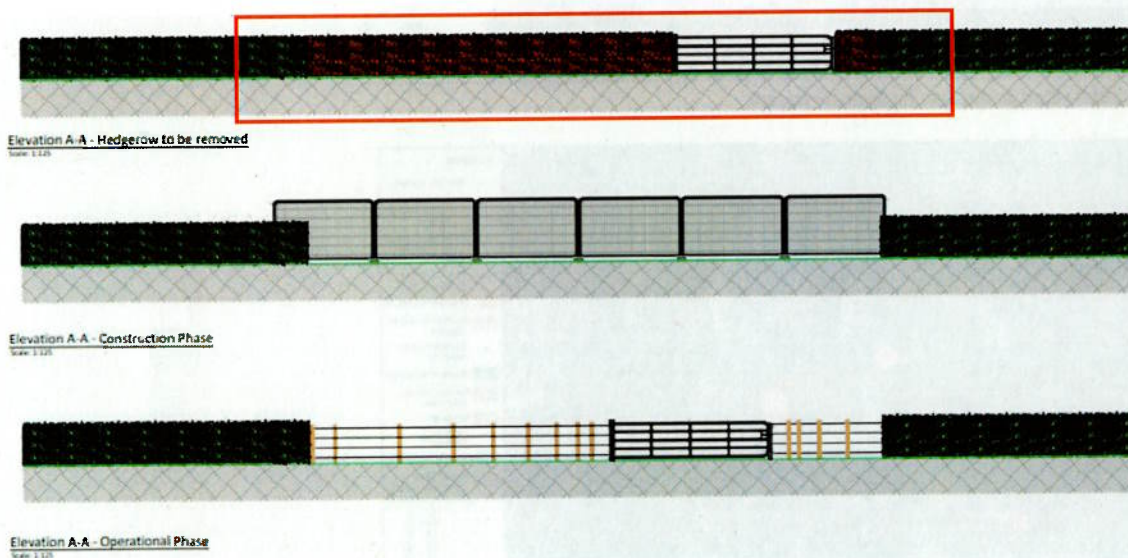


Fig. 12: Hedgerow to be removed (2)

4.1.8 Response to Point 1, Item 8

Our client agrees with KCC that the preference should be to refuse planning permission arising from the poor quality and ill-considered nature of the overall design of the project:

Item 8 of the further information requires details of the possibility of a derogation from Annex IV. Given the national commitments under the National Biodiversity Plan the Planning Authority would be very concerned that any derogation would be allowed. A redesign of this aspect of the project would be the very minimum required and the preference of the Planning Authority would be to refuse the application. It is a further demonstration of the poor quality and ill-considered nature of the overall design of the project.

As set out above, the appellant now admits to considerably more proposed tree and hedgerow loss than originally estimated. No amount of referring to hedgerows as "heavily managed" or other ill advised comments address this or the concerns also raised by CAAS in its detailed assessment prepared for KCC. CAAS noted the following a regards bats:

Bats

There is a lack of information regarding the relationship between tree felling that is required to enable the proposed development, and the potential bat roost features that were identified on trees to be felled. The accompanying bat report states that "a number of mature trees presenting potential roosting features were identified within the bat felling buffers" (bat felling buffers are a radius around each turbine where roosting or commuting habitat needs to be removed in order to reduce collision risk with wind turbines). However, there are no supporting maps showing the location of the trees with potential bat

roost features within the proposed site that require felling to facilitate the proposed development. In addition, the trees that were recorded to have potential bat roost features that are to be retained but require follow up surveys pre-construction, do not have clear mapping provided in the CEMP for the Project/Bat Ecologist engaged for pre-construction surveys. Other potential roosts identified in the form of buildings were not adequately surveyed for roost activity in terms of follow up emergence surveys. These surveys need to be carried out to supply information on the size and local importance of these roost features to local bat population – assess impacts, and devise appropriate mitigation as necessary. Information regarding the ecological corridors within the proposed site for bat commuting/foraging that may be fragmented or removed as a result of the proposed development within the bat report and biodiversity chapter lacks detail required to provide a comprehensive assessment of potential impacts of fragmentation of commuting corridors on local bat populations. The discussion of the relationship between the turbine delivery accommodation works and potential interactions with bat habitat or disturbance to bats is not sufficient (section 4.3.1.3 of the accompanying bat report). The report references chapter 4 section 4.5.2 of the EIAR which states that no "significant" accommodation works are required to facilitate the turbine delivery along this route. Any works required need to be assessed in the context of the relevant ecological environment and receptors of the turbine delivery route independently by the ecologists compiling the Biodiversity Chapter, in order to ensure that any potential impacts in the context of the ecological environment are taken into account, and assessed in terms of "significance" regarding ecological impact and assessment. The most up to date best practice guidance was not used for the bat report. The report used Collins (2016)⁵, however there is an updated version published in 2023⁶, which takes account of the most recent scientific findings and publications to inform best practice guidance. Any alterations to the surveys or assessment should have regard to the relevant updated guidance.

Provide mapping of ecological corridors existing in the baseline, and post construction of proposed development, with regard to their value for commuting bats, badgers etc.

In response to this concern, the appellant states: "bat surveys presented in Appendix 6-2 of the EIAR, trees within the site were assessed from ground level in accordance with best practice guidance". The totality of the assessments of the proposed hedgerows and tree losses, even at that time, did not support the appellant's conclusions.

In August 2025, arising from the Commission's FI request, the appellant refers to how the original Bat Survey Report has been updated. This is referred to as being "a more detailed assessment" despite the original assessment just having been described as "best practice". This document is now 100 pages long and its content could be described as 'doubling down' on its original conclusions.

The updated Bat Survey Report refers to a 'Dedicated Bat Survey' having taken place on the 25th of August 2025. The Commission is informed of how:

- "The crossing infrastructure was subsequently re-inspected on the 25th of August 2025."
- "Structures identified as having potential bat roost suitability were subsequently revisited on the 25th of August 2025, and again no evidence of roosting bats was found."
- "... a more detailed assessment was undertaken in August 2025 of all trees proposed for removal to facilitate the bat felling buffers and associated site infrastructure (including the site entrance on the L1009, temporary construction compound, spoil management area, substation entrance, and access track to T7)."

In almost total contradiction of the original Bat Survey Report, this Further Information stage submission finds the area to be almost hostile to bats.

Potential Roost Features in site trees and hedgerow

Please note that 83 trees were assessed and 83 trees are proposed to be removed.

A footnote included in the report states: "Update (August 2025): **All trees originally recorded as Low or Moderate suitability were subject to detailed re-inspection on 25th August 2025. On close inspection, no actual PRFs were identified, and all trees proposed for removal were reclassified as "None"** (Collins, 2023)." That is, Item 8 has resulted in a much more defensive response from the appellant, "features previously noted in the 2023 survey (e.g. broken branches, knot holes, cankers, ivy cover) determined on close inspection to be superficial, without cavities or crevices suitable for roosting bats". The Commission is asked to find as credible that, "all trees requiring removal to facilitate construction were classified as None, with no PRF-I or PRF-M trees identified".

Only trees located outside the site area could possibly accommodate bats: "While a small number of PRF-I trees were recorded within the wider Site, these are located outside the construction footprint and will be retained as part of the Proposed Project".

The Bat Survey Report – as with Otter and Kingfisher – asks for this matter to be addressed by way of condition with a 'Confirmatory Pre-construction Tree Survey' recommended repeatedly. The assessor refers to their proposal that a "precautionary pre-felling inspection will be carried out prior to removal to confirm the updated baseline status of trees". That is, if the August 2025 survey and assessment proves to be incorrect, then planning permission will already be in place and the project will find a way to proceed. This was also the original recommendation submitted to KCC by the appellant. This was refused.

This represents a lacuna in the survey effort. The first survey purportedly now contradicts the second. What would a third survey show? The appellant refers to how: "tree condition can change over time". This is a significant change in the lifespan of a single planning application.

The Bat Survey Report remains fully on message as it states: "There will be some requirement to remove trees to facilitate the proposed bat felling buffers, as detailed in Section 6.1.3 below. The August 2025 tree inspection confirmed that none of the trees proposed for removal contained Potential Roost Features (PRFs), with all assessed as None following close inspection in line with Collins (2023) guidance".

This then is the full response provided to the Commission. In short, the appellant regrets indicating any Potential Roost Features within the sites, seeing the weakness, the issue is noted as closed. *No Potential Roost Features to see here*, etc.

This allows the appellant to then use the argument that as they argue there are no hedgerows or trees in the site area or immediately adjoining it which Potential Roost Features, then the removal of these trees is not an issue. This is not what KCC, CAAS, or our client believed to be the case.

As noted, the Commission is again directed towards addressing this matter by way of condition as how could there be adverse impacts on bats now that there are no Potential Roost Features.

If roosting bats are identified during the pre-construction surveys, the appellant states that a derogation licence will be obtained from NPWS and mitigation measures will be prescribed by a licensed ecologist before works proceed. The appellant is asking the Commission to do the very thing this item sought to address.

The appellant arguments are not credible

The crossing infrastructure/bridge

The August 2025 bat survey at the bridge also finds no evidence of roosting bats. This is despite there being older structures and trees and hedgerows in close proximity. Concerns arise over the survey with the Low suitability found in 8 no. structures.

The assessor pushed for the matter to be addressed by way of condition noting (as they did originally) how: "confirmatory pre-construction inspections will be carried out at all crossings"

Again, the assessor is covered as to future findings which contradict the August 2025 survey as pre-commencement surveys are proposed to check again ("to ensure no bats are roosting in the structures and to safeguard compliance with relevant legislation")

This represents a lacuna in the survey effort. If roosting bats are identified during the pre-construction surveys, the appellant states that a derogation licence will be obtained from NPWS and mitigation measures will be prescribed by a licensed ecologist before works proceed. The appellant is asking the Commission to do the very thing this item sought to address.

Buffer trees

Without surprise, the appellant confirms how the bat felling buffers and the infrastructure footprint, including the site entrance (L1009), temporary construction compound, spoil management area, substation entrance, and access track to T7, etc. will not impact adversely on bats.

The appellant Bat Survey Report states: "No PRF-I or PRF-M trees were identified within the bat felling buffers (Plates 9–19) or along the proposed infrastructure footprint (Plates 20–28)".

The appellant finds – see Figs. 13 and 14 - problems with every tree. It is remarkable how there are broken branches, wounds, canker, ivy cover, dead trees, etc. Anything to find that there is no roosting suitability.

Again, the assessor is covered as to future findings which contradict the August 2025 survey as pre-commencement surveys are proposed to check again ("to ensure no bats are roosting in the structures and to safeguard compliance with relevant legislation")

This represents a lacuna in the survey effort. If roosting bats are identified during the pre-construction surveys, the appellant states that a derogation licence will be obtained from NPWS and mitigation measures will be prescribed by a licensed ecologist before works proceed. The appellant is asking the Commission to do the very thing this item sought to address.

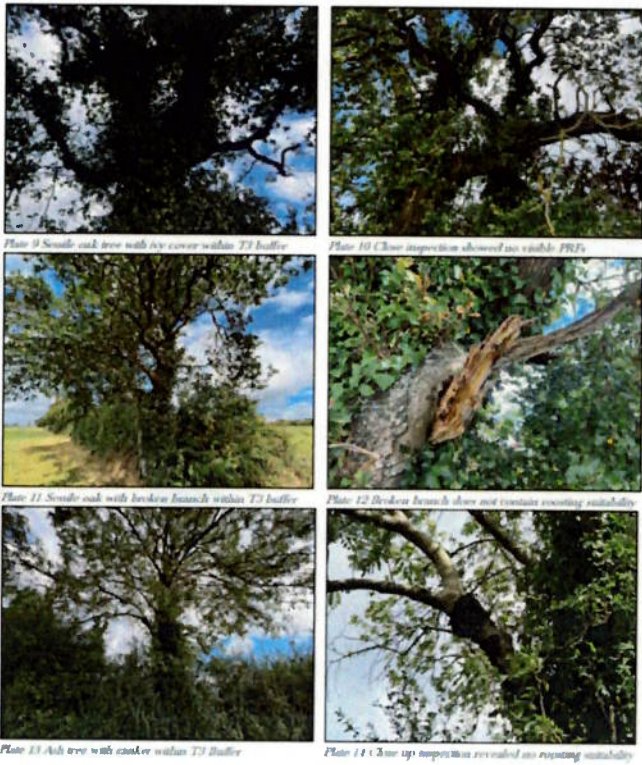


Fig. 13: Photos of the tree to be removed as set out in the appellant covering submission (1)





Fig. 14: Photos of the tree to be removed as set out in the appellant covering submission (2)

A derogation licence is likely required

Our client's group has followed this planning process from the start. They have read the full KCC and CAAS assessments. They have read the original and the amended Bat Survey Reports. They are fully aware of why the Commission have asked this item of Further Information.

They submit that the appellant has failed to address the concern. Indeed, they have submitted wholly contradictory survey results which reduce their credibility substantially.

As KCC relied on CAAS, it appears that the Commission needs an independent surveyor to visit the site as the survey results provided are, to be polite, inconclusive.

The appellant has not provided a credible case as regards why a derogation licence is not required.

Their argument remains, as it always has, that this concern should be left to be addressed by way of condition and later post-consent surveys. This is not acceptable. This represents a lacuna in the survey effort.

The group can accept that the condition of trees changes over many years, but not normally so drastically over the time period of a single planning application.

A derogation clearly needs to be granted before the approval of the consent to the proposed activity.

The Commission is asked to refuse planning permission on this basis.

4.1.9 Response to Point 1, Item 9

As noted above, all the trees originally surveyed by the appellant and found to have roosting potential are found by the appellant - at this appeal stage Further Information point in the Commission's assessment - to suddenly have no roosting potential. This despite how the original bat surveys indicated there was. This unlikely scenario carries over into the response provided to Item 9.

Item 9 notes how the appellant's own bat survey "noted that there are potential roosting features present within a number of the bridges along the proposed grid connection route (as per Appendix 6-2 of the EIAR)". The Commission raises concerns for bats arising from the level of noise and vibration associated with the proposed works. The Commission notes how, "Uncertainty therefore remains regarding the potential impact of the works on roosting bats and whether a derogation may be required. In this regard ..."

The appellant's response begins (as their response on trees does) by accepting how the original bat survey surveyed "all watercourse crossings associated with the Proposed Grid Connection were assessed for bat roost potential in 2024. A total of eight structures (bridges/culverts) were identified as presenting features with some potential for use by bats".

The appellant immediately states: "No evidence of roosting bats was identified during these surveys". This was not the question posed by the Commission. The Commission asked about possible adverse impacts on potential roosting features and this question derived from an assessment of the original Bat Survey and EIAR.

The appellant then moves to the August 2025 bat survey of all eight crossings. Once again; this time around the appellant surveyor was able to do a much more thorough survey which is much more supportive of the appellant's case. Why was such a thorough survey not carried out originally? Reference is made to "improved access" – did the original survey not access these areas to carry out a proper survey? ("Improved access to WC7 in particular allowed for a closer inspection than was possible during the 2024 effort").

The appellant accepts that "all eight crossings were reconfirmed as having Low suitability (Plates 23-32). This is due to the presence of a small number of potentially suitable gaps/crevices for opportunistic use by individual bats".

Having accepted that the Commission's question remains wholly valid, the appellant then sets about arguing that the proposed construction phase works themselves will not directly impact bats. This was not the question. The question is, will noise, vibration, and disturbance impact bats. The appellant avoids the question. Then they answer a different question to which they have already committed an answer. That is, they argue "no significant effects on bats are anticipated". This statement carries no weight as it pre-dates the Commission's FI request.

The appellant covering submission and updated Bat Survey Report fail to address the Commission's concern. Concerns for bats arising from the level of noise and vibration associated with the proposed works remain.

The uncertainty noted by the Commission remains regarding the potential impact of the works on roosting bats and whether a derogation may be required.

The appellant repeats points made above which argue that "a derogation licence is not required" and the matter should – as they have requested from the start of the planning application process – be addressed by condition with "confirmatory pre-construction inspections" to be carried out only after the Commission has granted planning permission.

The appellant is more explicit on this occasion and states: "If roosting bats are identified, a derogation licence will be obtained from NPWS and mitigation measures prescribed by a licensed ecologist before works proceed".

That is, once again, the appellant would place the Commission in a position where it has decided on the planning application before it knows if a derogation licence is required.

This represents a lacuna in the appellant's NIS and EIAR assessments.

The intention of the appellant is clearly to make it appear as a grey area and to pressurise the Commission to grant permission. As KCC has stated, the most appropriate way forward is a refusal followed by the appellant carrying out more detailed surveys and determining in advance of a new planning application whether a derogation licence is or is not required.

4.1.10 Response to Point 1, Item 10

The appellant excluded amphibians or reptiles as KERs despite suitable habitat exists within site. The Commission has noted the absence of dedicated surveys for these species and noted how, "Should amphibians or reptiles be included as KERs, the EIAR should be updated to include suitable mitigation measures".

This issue was raised by CAAS in its advice to KCC. They stated:

Amphibian and Reptiles

No surveys of amphibians or reptiles were conducted for the Biodiversity Chapter (see section 6.6.5). Considering the likely suitable habitat at several locations for both groups on site, in-combination with the significant threats to the populations of both groups across Ireland (due in large part to loss of suitable habitat and pollution of streams, rivers and lakes 7), it is insufficient to omit conducting surveys of these groups completely for an EIAR of a substantial development. The resulting lack of any information regarding the breeding locations and distribution of reptiles and amphibians across the proposed site is a significant gap in the information required to inform the planning authority on the potential impacts of the proposed development on the local ecology.

KCC's submission to the Commission on this FI offers no opinion as the appellant offers no meaningful response.

The appellant relies on an argument that the 'Guidelines for Assessment of Ecological Impacts of National Road Schemes' (NRA, 2009) made them do it.

Our client's group and CAAS clearly find the appellant position to have no basis. The proposed project will impact the River Nore and the Tullaroan Stream which are known to contain Common Frog, Smooth Newt, and Common Lizard. There are occasional sightings of Terrapins.

These waterways represent suitable supporting habitat for amphibians or reptiles.

The appellant's position is essentially that there "availability of suitable supporting habitat in the locality" so "the loss of such habitat is not considered significant to the degree that it would affect populations of reptiles or amphibians, where they occur, at a local level or greater". There is however nothing in the NIS or EIAR to support this argument.

Reptiles and amphibians should clearly be regarded as KERs for the project and should be considered further in the assessment presented in the Biodiversity Chapter of the EIAR.

Please refer to the attached submission from Dr Pamela Bartley which raises concerns over the proposed deterioration of surface water quality and how this is not properly addressed in Sections 6.7.2.1.1 and 6.7.3.1.1 of the Biodiversity Chapter of the EIAR.

4.1.11 Response to Point 1, Item 11

The Commission required the appellant to provide a restoration plan (plan and section diagrams) for the proposed borrow pit as one had not been submitted.

Our client's group has reviewed drawing DANU-BSK-D004.1FI of Appendix 2 which sets out the borrow pit restoration plan. No reference is made in the appellant's covering submission to any NIS or EIAR assessment of this proposal. The Commission's request has been interpreted as requiring only a drawing. This is not sufficient.

4.2 Response to Point 2 – Noise

Our client agrees with the point made in the KCC FI stage appeal submission which notes:

*Item 1 – 4: From the information requested by the Commission it is clear that **the level of detailed information with the application was incomplete and insufficient to enable the Planning Authority to adequately assess the effects of the proposal. While this particular issue relates to noise this has also been the case in relation to biodiversity and impacts on the SAP and SPA and protected species such as Bats and Otters.** It is noted that a commitment is given that at construction stage the contractor will "coordinate with contractors for other projects to ensure that works do not coincide so as to cause cumulative impacts along the proposed grid connection route". **It demonstrates the uncertainty around the impacts of the project. The impacts cannot be adequately assessed given that the timing of the works are undetermined (winter/summer) and along the public road** [emphasis added].*

The appellant relies on the same approach and information in their responses to Point 2. This is not acceptable.

The attached Grosvenor Consultancy submission notes how the ACP request, while welcome, is incomplete as regards noise matters:

The RFI echoes concern over the lack of detail provided in the EIAR that was identified in our peer review. However, our peer review identified additional missing details such as the lack of octave band sound power levels used in the noise model, clarification of whether concave ground profiles had been included, lenient noise limit determinations and the generally optimistic noise modelling.

4.2.1 Response to Point 2, Item 1

The Commission has responded to concerns raised by both KCC, CAAS, and our client's group over cumulative noise impacts assessment associated with the construction phase. CAAS noted how

Cumulative Effects and Interactions between Effects

The assessment of cumulative effects provided in the EIAR is limited to a paragraph which states 'The list of cumulative projects from Appendix 2-3 of the EIAR have been reviewed. It is not anticipated that there will be any other construction activities that would give rise to significant cumulative impacts during the construction phase. The contractor for the Proposed Project will coordinate construction schedules with other contractors to ensure that significant cumulative noise impacts do not occur.' Appendix 2-3 comprises 87 pages containing lists of other projects headed Local Authority Planning Applications, An Bord Pleanála Cases, EIA Location Points, Licensed Facilities, Waste Facilities and Heavy Industry and Wind Energy Development. The information provided for some of the lists includes Dist to Turbine, Dist to Grid Buffer (500m) and Dist to EIAR Boundary. Neither the sources of the data nor the search criteria used in compilation of the lists are given. No sieving, mapping, consideration of effects, or other analysis of these projects which would assist in establishing their potential to contribute to cumulative effects in combination with effects arising from the subject proposal, has been provided. Given the range of characteristics of the subject project with potential to cause effects, including those arising from traffic and grid connection works, the absence of any meaningful assessment of cumulative noise effects is an EIA compliance issue [emphasis added].

The Commission therefore states: "it is noted that no detailed analysis of other projects has been provided which would assist in establishing their potential to contribute to cumulative effects in combination with the subject proposal. An example of which includes the multiple grid connection routes connecting wind farms in the area to Ballyragget 110kV Substation. The Applicant is therefore requested to respond to this issue".

The appellant's response is once again dismissive and fails to offer any meaningful assessment of cumulative noise effects. This remains an EIA compliance issue. This query did not relate to whether there would be one or more wind farms in the area but to the full range of projects which could be under construction in the area and wider area at the same time.

Despite the concerns raised by KCC and CAAS, the appellant merely refers again to:

The long list of cumulative projects from Appendix 2-3 of the EIAR has been reviewed to ascertain proposed grid connections for developments connecting to the Ballyragget 110kV Substation, which include the following: Briskalagh Renewable Energy Development, Co. Kilkenny Response to Further Information 27 KCC 21627 Grid Connection to Farranrory Wind Farm,

amended by KCC 2360248; KCC 2360330 Grid Connection to a Solar Farm at Ballyconra; KCC 2560418 Grid Connection to Seskin Wind Farm, and KCC 2460241 Battery Energy Storage System (BESS) at Mootpark, Ballyragget.

Our client's group repeats the CAAS concern, that is, neither the sources of the data nor the search criteria used in compilation of the lists are given. No sieving, mapping, consideration of effects, or other analysis of these projects which would assist in establishing their potential to contribute to cumulative effects in combination with effects arising from the subject proposal, has been provided. Given the range of characteristics of the subject project with potential to cause effects, including those arising from traffic and grid connection works, the absence of any meaningful assessment of cumulative noise effects is an EIA compliance issue.

The appellant informs the Commission – as it did KCC (see above) – that there is no need for this issue to be properly assessed as, "if the Proposed Project is approved, at construction stage, the appointed contractor will coordinate with the contractors for other projects to ensure that works do not coincide so as to cause cumulative significant noise or vibration effects at noise-sensitive locations (NSL's) along the Proposed Grid Connection underground cabling route". This is not acceptable. The appellant is required to enable the Commission to fully assess this matter at planning application stage and not be way of compliance with conditions or some in-house self-regulation.

The Commission is asked to read again the KCC response to the appellant's unwillingness to provide sufficient and required information and detail to allow this proposal to be properly assessed: **"It demonstrates the uncertainty around the impacts of the project. The impacts cannot be adequately assessed given that the timing of the works are undetermined (winter/summer) and along the public road"** [emphasis added].

4.2.2 Response to Point 2, Item 2

The Commission's request states: "You are required to submit omni-directional noise predictions for each NSL in tabular format for the proposed development only".

Our client's group has reviewed Appendix 6 of the submission which presents predicted omni-directional noise levels in tabular format due to the Proposed Wind Farm alone.

Please find our response attached. This has been prepared by Mr Les Huson of Huson & Associates and Mr Melvin Grosvenor of Grosvenor Consultancy – Acoustic Consultants. The latter's attached submission notes how there are problems with the RFI submission which impact the appellant's responses to Items 2 and 3 stating:

The RFI submission (Appendix 6 and Appendix 7) has provided tabled data that addresses the RFI issues 2 and 3 but has incorrectly tabled the Daytime criteria that requires the correct determination of a low noise environment.

Assessing a low noise environment The WEDG 2006 does not specify how to assess a low noise environment. The test from WEDG 2006 for a low noise environment is not separated into that during the Day or Night. The determination of whether an area can be described as having a low background sound level (below 30 dB(A)) is best assessed using BS4142 and ISO 1996-1:2016. It has been incorrectly interpreted in the EIAR that when background sound levels determined from a trend line analysis become greater than 30 dB(A) at higher wind speeds that the lower range of noise limits suggested in WEDG 2006 (35 to 40 dB(A), L90) do not apply and the limit suddenly reverts to 45 dB(A) L90. This is incorrect. The test of a quiet area is made at lower wind speeds (below 5 m/s according to BS4142 where wind-induced noise on a microphone is minimised) and once determined applies at all higher wind speeds where the Background plus 5 dB approach then applies to set target noise limits. Noise limits The Daytime noise limits in Appendix 6 and Appendix 7 of the MKO submission suddenly and incorrectly jump to 45 dB(A) at 7 m/s and above. The Daytime noise limits should be based upon Background plus 5 dB, not 45 dB(A). Furthermore, as explained in our peer review, the lower target sound level of 35 dB(A) plus 5dB should apply, not 40 dB(A) plus 5 dB.

The sound levels tabled in Appendix 6 and Appendix 7 of the MKO submission show noncompliance at 7m/s for H008, H012 and H048, despite the predicted noise levels being overly optimistic and use of the most lenient noise limits. With less optimistic noise modelling and more realistic daytime noise limits many more dwellings are non-compliant.

Our client has also reviewed the appeal stage FI response prepared for ACP by Con Sheehan Land Surveyor. This states:

RFI response of MKO to ABP section 2.7.4.18 titled Turbine spacing and Site design.

Please refer to my Kilkenny County Council and ACP submissions and Map 2, attached, as a reminder of this windfarm layout The only protection we have at present are the WEDG2006 guidelines.

The RFI reply by the developer to ACP has not addressed the following:

The lack of turbine spacing issues pointed out to them. Why they have deviated so far from the WEDG2006 turbine spacing guidelines of 7 and 3 rotor diameters apart, particularly in hilly and afforested terrain. (Refer to Map 2) The mast location issue of being in a very poor location to render it near useless in the West south-west to Easterly wind directions clockwise. The mast should be southwesterly or westerly of all of the turbines. (Refer to Map 2) Their only response is to rely on their

"Windpro software" and their design team's collaboration which in my opinion to date has not worked very well on many existing windfarms.

4.2.3 Response to Point 2, Item 3

The Commission states: "You are required to submit the predicted cumulative omni-directional turbine noise levels for each NSL in tabular format, which illustrates both the day and night criterion and identifies any relevant excess".

Our client's group has reviewed Appendix 7 of the submission which presents predicted cumulative omni-directional noise levels in tabular format.

Please find our response attached. This has been prepared by Mr Les Huson of Huson & Associates and Mr Melvin Grosvenor of Grosvenor Consultancy - Acoustic Consultants.

The issues noted in respect of Item 2 also apply to Item 3.

4.2.4 Response to Point 2, Item 4

The Commission notes discrepancies in the map of the study area which shows the predicted cumulative noise level contours. This appears to have been caused by a mislabelling of dwellings H270 and H275 on a noise contour map in the EIAR.

Our client's group has reviewed the appellant's new noise contour map has been provided with corrected NSL references.

Please find our response attached. This has been prepared by Mr Les Huson of Huson & Associates and Mr Melvin Grosvenor of Grosvenor Consultancy - Acoustic Consultants.

It is clear from the Huson & Associates Review that the Appellant continues to rely upon over optimistic and non-complaint operational noise limits.

Grosvenor Consultancy refer to the Huson & Associates Review noting the following relevant sections:

3. Infrasound & Low Frequency Noise (ILFN) and continuing failure of the WEDG 2006 Noise Guidance to protect Residential Amenity.

3.1. Although ACP appears not to have Requested Further Information from the Applicant, we reiterate our conclusions in our Objection dated 4th February 2025.

10.19. It is our firm professional judgement that that this admission by the Applicant, significantly undermines the objectiveness and approach (including methodology) of the submitted Environmental Impact Assessment. Whilst it may be considered this statement is specific to the LVIA, decision makers should not be unduly influenced this statement or by this approach.

It simply should not be the within the gift of any Applicant, to seek to predetermine the outcome of the suitability of any future proposed 'wind energy developments', within a specific area.

This is particularly relevant in this case, as it is deemed that when the assessed significantly adverse Residential Amenity Impacts and all other material factors are duly considered in the planning balance, as to the benefits of the proposed development, it is our professional judgement that these in combination are not just considered to be significantly adverse but, overwhelmingly adverse.

Final Conclusion.

We repeat, that we consider that consenting the proposed Briskalagh wind farm would create an unacceptable risk of adverse WTN impacts to the local residents and therefore, this unsustainable application be should be refused development consent.

Grosvenor Consultancy refer ACP to The High Court [2025] IEHC 330 Record No.: 2018/3928P Raymond Byrne and Lorna Moorhead Plaintiffs - and - ABO Energy Ireland Limited, ABO Energy O&M Ireland Limited and Wexwind Limited Defendant and then states:

This Judgement confirms that Wind Turbine Noise is a recognised problem and that there are methods to assess and address genuine problems, however, the reality is, that most complaints are not addressed and was the reason for this High Court Case ... It is of considerable concern that the separation distances from the Gibbet Hill 3 Wind Turbines is comparable, with that of the proposed Briskalagh Wind turbines. 3.7. However, the comparative size and generation capacity of the Gibbet Hill wind turbines subject to the above High Court Judgement, were 3 Nordex 90 turbines with a hub height of 80 meters and blade tip height of 125m and blade length of 45 meters, giving a blade diameter of 90 meters. Five of the turbines were to have a rated energy output of 2.5 megawatts (MW) and one would be limited to 2.3MW. These turbines are considerably

smaller than the proposed 7 Nordex, Briskalagh Wind Turbines with an overall turbine tip height of 185 metres; a rotor blade diameter of 163 metres; and hub height of 103.5 metres and with a generation capacity between 5-7MW.

The two firms employed by our client to review the issue of noise both raise significant concerns over the appellant's proposals including the FI submission.

4.3 Response to Point 3 – Hydrology and Hydrogeology

Our client's group agrees with the KCC appeal stage FI submission which notes:

Items 1 – 5: It is a requirement of the Water Framework Directive that waters used for the abstraction of drinking water are protected so as to avoid deterioration in quality. The proposed wind turbine site is located in the groundwater abstraction catchment zone of contribution for the Callan public water supply and group water supply schemes, and the proposed grid connection route is located in the surface water abstraction catchment for the Kilkenny City (Troyswood) Water Supply. The proposed cabling route crosses a number of watercourses / tributaries which flow towards the Troyswood abstraction point on the River Nore.

The documentation submitted fails to provide a comprehensive mapping and assessment of all actively flowing watercourses through the site or to adequately consider the surface water abstraction catchment the Troyswood scheme. The applicant in the application to Kilkenny County Council failed to demonstrate that the proposed grid connection route will not adversely impact Uisce Eireann infrastructure including along the local road L5023 in Tullaroan, along the R694 road at Freshford and at Ballyragget on the N77. The Planning Authority notwithstanding the further information request by the Commission is not satisfied that the applicant has demonstrated that the proposed development will not lead to unacceptable risks to groundwater within groundwater and surface water abstraction catchment zones, or impact on existing water services infrastructure contrary to public health (emphasis added).

The KCC assessment arises, in part, from our client's original submission. Our client's group has now reviewed the FI submission and, arising from work with Dr Bartley, finds there are serious and significant concerns in relation to the methodology, output and conclusions of the Site Specific Hydraulic Modelling undertaken by Fluvio R&D Limited for the following reasons:

1. The hydrological assessment and analysis undertaken is not appropriate and is not comprehensive enough. A hydrological assessment has been undertaken for individual catchments within the study area; however, the hydraulic modelling exercise has not been designed to incorporate and account for peak flows from each individual catchment area. This is likely to have resulted in an underestimation of final flow volumes.
2. As part of the hydrological assessment and analysis the determination of Qmed for all catchment areas is based on the small catchment 5-parameter regression equation. Other suitable hydrological techniques and equations should also have been considered in order to ensure that an appropriate and conservative determination of Qmed is accounted for.
3. A pivotal site adjustment factor has not been utilised as part of the hydrological assessment and analysis. It is standard practice that a pivotal site adjustment factor is utilised.
4. Different distributions have been utilised in order to determine growth factors for each sub-catchment area. This is not standard or appropriate hydrological assessment methodology. Growth factors should have been selected utilising a 'best fit' methodology.
5. There are significant concerns over the use and accuracy of the LiDAR/RGB Drone surveying which was utilised to generate a Digital Terrain Model (DTM) for the study area. There is no information or data provided in relation to the Root Mean Square (RMS) value associated with this data, and the data has not been calibrated or truth surveyed in any way.
6. No information is provided whatsoever in relation to the watercourse channel, adjacent lands and hydraulic structures survey undertaken by KU217 Limited. It is standard practice that the full extent, specific details and individual cross-sectional elevation profiles of survey works are presented as part of any hydraulic modelling exercise.
7. Figure 10 of the Fluvio R&D Limited report indicates a significant gap in the survey points between 106.95294 and 99.5367 where it appears no watercourse channel, adjacent lands or hydraulic structures surveying works have been undertaken. This would result in a significant omission of data as part of the hydraulic modelling exercise.
8. The proposed new culverts have not been designed in accordance with OPW Section 50 requirements; therefore the culverts as proposed in the hydraulic model are not representative of the proposed development scenario flood regime within the watercourse channels that were analysed and assessed.
9. Figure 12 of the Fluvio R&D Limited report purports to illustrate the proposed development scenario incorporated within the study area DTM. This is totally misleading. This image is simply a series of lines and figures which have been 'drawn' onto the DTM and do not demonstrate that the proposed development scenario has been properly and appropriately 'stamped' onto the DTM.

10. Page 50 of the Fluvio R&D Limited report states that special attention was given to flood levels in Kilmanagh town. In particular, and as highlighted in Figures 33 & 34 of the report, it is explicitly stated that during the occurrence of a Q100cc (1 in 100 year + climate change) or a Q1000cc (1 in 1000 year + climate change) the output of the hydraulic modelling exercise demonstrates that the hurling pitch immediately downstream of Kilmanagh bridge does not flood. This is a significant and concerning erroneous statement and miscalculation.
11. The hurling pitch at this location is known to be subject to flood inundation on a regular basis. Fig. 16 below illustrates the hurling pitch following the flood event of October 2023. The hurling pitch was subject to extensive flooding during the flood event of October 2023. This flood event had an estimated return period of 1 in 15 years to 1 in 20 years at this location, however the assessment and analysis undertaken by Fluvio R&D Limited presents that the hurling pitch would not be subject to flood inundation up to the 1 in 1000 year + climate change flood event. This demonstrates that this Site Specific Hydraulic Modelling exercise is significantly flawed and does not provide any confidence whatsoever in relation to the potential adverse impact of the proposed wind farm development on the existing hydrological regime of the area.
12. The hydraulic model only extends for a distance of approximately 60m downstream of Kilmanagh bridge. In this regard the hydraulic model in no way represents the existing baseline scenario and proposed development scenario hydrological and flood regime at Kilmanagh. This is demonstrated by the point discussed above. The hydraulic model should have extended for a distance of at least 1000m downstream of Kilmanagh bridge.
13. Significant flood events have been recorded and documented within the Kilmanagh area over the years, and a significant body of information is available in relation to flood levels, flood extents and return period associated with previous flood events. As part of the hydraulic modelling exercise no attempt has been made to calibrate the hydraulic model against any of these previous and well documented flood events. This is a significant omission and therefore provides no confidence whatsoever in relation to the hydraulic modelling exercise.
14. The windfarm development proposes several significantly large spoil management areas and one significantly large borrow pit area within the catchment area of the Tullaroan River immediately upstream of Kilmanagh Bridge. These significant spoil management and borrow pit areas have the potential to alter existing overland flow conveyance paths and have the potential to displace waters elsewhere and to result in an adverse impact to the existing hydrological regime of the area, especially in consideration of the 'flashy' nature of the catchment at this location. The potential impact of these spoil management and borrow pit areas on the existing hydrological regime of the area have not been assessed or quantified in any way as part of the hydraulic modelling exercise.

4.3.1 Response to Point 3, Item 1

The Commission has asked the appellant to, "provide a robust rationale for the adequacy of the trial pits provided across the site, noting their depth relative to the depth of the foundations for the proposed turbine bases".

Concerns were raised by KCC over this issue and the attached submission from Dr Pamela Bartley states:

The applicant's reliance on point methods (trial pits and 2 boreholes) is outdated and has led to many failures at past wind turbine construction sites in Ireland and there is precedent that should preclude a competent Planning Authority's acceptance of those methods of Site Investigation. It is stated in the Lands Soils and Geology chapter of the Brisklagh EIAR that "comprehensive site investigation indicate good ground conditions". The investigation was FAR FROM COMPREHENSIVE. Two Boreholes for a site that is acknowledged as within the Source Protection Zones of Group Water Schemes is NOT Comprehensive. Trial Pits are an outdated and cheap mechanism to investigate an area. The Particle Size Distribution results are presented as CLAYS, yet there are > 50% SAND contents in some. Kilkenny County Council are advised to refer to the detail presented as Appendix C in which the current Best practice of Site Investigations is presented. Best Practice involves using methods that are not points (neither Probes nor Trial Pits). The Geotechnical Assessment Industry has moved on. However, those engaged by the Renewable Energy business sector have not. There are no Site Investigation Boreholes to the ACTUAL depths below the proposed invert elevations for the foundations. This is lacunae that would support Kilkenny County Council's reasons for refusal. A recent refusal by the Board (ABP-309770-21, Coole Wind Farm) provides precedent that Competent Authorities are reviewing the actual situations during construction and realising that no amount of ink on paper in an EIAR, or in a Response to Further Information or in an Appeal submission in support of the client, should be taken as 'truth' with respect to risks, as follows [see Fig. 15].

The Board considered that there is significant uncertainty relating to the effect on soils, water and ecology which precludes assessment of the full environmental effects in accordance with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU. The proposed development is, therefore, premature.

Fig. 15: Excerpt from the Commission's decision under ABP- 309770-21, Coole Wind Farm

The appellant responds by stating:

Section 2.1 of Appendix 8 comprehensively provides rationale as to the appropriateness of the level and scope of site investigation at the Site and contends that the site investigations undertaken are more than sufficient to characterise the baseline geological environment. It should also be noted that further Site investigation has been undertaken in the vicinity of T7 and is comprehensively addressed in Section 2.3 of Appendix 8.

Section 2.1 of Appendix 8 states: "The depth of gravity based turbine foundations is typically 4 to 4.5mbgl (metres below ground level) and is dependent on the local geological conditions. As noted in Table A above, the depth of the trial pits completed at the proposed turbine locations ranged from 2.4 to 3.2m".

Rather than provide additional new trial pits to address the Commission's concern, the appellant's response is, once again, to double down and defend the information already submitted that KCC considered inadequate.

The appellant argues essentially that deep trial pits are unnecessary given "the predictability of the geological profile encountered across the site (shallow overburden deposits on the sides of the valley)".

However, why not take trial pits down to 4.5m to be comprehensive and certain.

The appellant then begins a list of obfuscations which offers no actual answer to the query:

- The appellant states that the assessment offers a precautionary approach. One would hope so. **Where is the actual response?**
- "... the site investigations completed at the Proposed Wind Farm site, including the trial pits, and the depth of those trial pit excavations, are appropriate for EIAR phase of the project". Are they? **Where is the actual response?**
- The use of point location geotechnical investigations (i.e. boreholes and trial pits) are a reliable and trusted method of site investigations in order to characterise the baseline geological environment. They are. Why not provide the results from deeper test holes? **Where is the actual response?**
- "These geotechnical investigations provide precise geological information at a given location and the wider geology can be understood if there is a suitable quantity of point investigations completed at a given site". This is noted. **Where is the actual response?**
- "The quantum of site data gathered to characterise the baseline soils and geological environment, comprising of 24 no. point investigations (22 no. trial pits and 2 no. monitoring wells/boreholes) combined with site walkover surveys, logging of exposed soils/subsoils at the site and laboratory analysis of recovered soil samples, is considered to be suitable for the 7 of the 22 no. trial pits completed across the Proposed Wind Farm site encountered weather siltstone bedrock at depths ranging from 0.4 to 3.3mbgl on the sides of the valley. The boreholes drilled on the valley floor encountered thicker glaciofluvial deposits (up to 18.7m thick) in the vicinity of the Tullaroan Stream (Tullaroan/Kilmanagh River). Why then is there no trial pit data down to 4 to 4.5mbgl? **Where is the actual response?**
- "The geology of the Proposed Wind Farm site is therefore predictable with shallow overburden on the sides of the valley and deeper deposits on the floor of the valley". This is noted. **Where is the actual response?**
- "The soils, subsoils and bedrock encountered during the site investigations largely corresponded with the GSI mapped geology (www.gsi.ie)". This is noted. **Where is the actual response?**
- "No karst bedrock is mapped at the site and no karst features were recorded during walkover surveys or during the site investigations at the Proposed Wind Farm site which would warrant more extensive geophysical surveys and site investigations". This is noted. **Where is the actual response?**
- "Regardless of the depth of the trial pits, the impact assessment presented in Chapter 8: Land, Soils and Geology and Chapter 9: Water of the EIAR takes a precautionary approach whereby both gravity and piled foundations are assessed at all proposed turbine locations". This is a repeated point. **Where is the actual response?**
- "As detailed in Section 8.6.2.8 of the EIAR, the residual effect from piled foundations on the land, soils and geological environment will be a negative, imperceptible, direct, permanent, unlikely effect due to the very small footprint of the piles and the small volumes of material which will be displaced". This was not the question asked. **Where is the actual response?**
- "In terms of potential effects on the receiving water environment, the assessment presented in Section 9.5.2.14 of the EIAR concluded that due to the prevailing hydrogeological regime and with the implementation of the prescribed tried and tested, best practice mitigation measures that the residual effects of piled foundations will be a negative, imperceptible, short-term, unlikely effect on the receiving water environment". This was not the question asked. **Where is the actual response?**

The appellant has failed to provide new deeper trial holes and failed to provide any robust and credible basis for why they decided not to in the first place. Indeed, reference is made to "boreholes drilled on the valley floor" which are very deep. Why were the trial pits for the wind turbine foundations not deeper? Where is the resulting data from sufficiently deep trial holes?

4.3.2 Response to Point 3, Item 2

Our client's group is advised by Dr Pamela Bartley who has raised significant concern over the proposed borrow pit. Her accompanying report is attached. We welcome how the Commission has required the appellant to respond to these concerns noting:

Concerns are raised regarding the extent of site investigations undertaken for the proposed borrow pit given its proximity to the aquifer and nearby watercourse on site. Noting its location relative to this regionally important gravel aquifer, you are required to establish the impacts of such an excavation on the potential to impact surface water and groundwater flows in

the area. Further detailed site investigations shall be provided to fully establish a conceptual site model for flow regimes in this area of the site.

Dr Bartley's concerns of the borrow pit as submitted to KCC:

Dr Bartley is very concerned over the appellant's response on this issue. Before addressing this, we ask the Commission to review her primary points:

- "In the matter of flooding, HES (2025) in their Grounds of Appeal are misquoting, perhaps even Gas Lighting, the Departments (2009) Guidelines on Flooding. The facts of this case are **The potential adverse impact to the existing hydrological regime of the area due to the proposed spoil management and borrow pits has not been quantified in any way**" [emphasis added].
- "To propose a 15ha quarry on an elevated site, where not even 1 bench of rock excavation is proposed, is surely contrary to proper land use planning. The agents for the applicant's attempt to revert to the archaic reference language of "**Borrow Pits**", when **they are really referring to quarrying**. This is contrary to EPA (2022) Guidelines on accessibility of EIAR to the public. In addition, **the lack of Impact Assessment for the proposed quarry is contrary to the EIA Directive and EIA Regulations**" [emphasis added].
- "In addition, the proposed development area is within the Source Protection Area for the River Nore Public Water Supply surface water system for Kilkenny City ... **There is no consideration given to the consequences of catchment alterations and surface water runoff in this source protection zone arising from the proposal for road construction, "borrow pit", use of explosives, rock breaking, crane hardstanding etc., foundations for turbines, or any other component of the proposed development**" [emphasis added].
- "In the sole consideration as to whether the applicant's proposed construction trenches for cables could intersect water distribution main's trenches, there is no consideration given to the consequences of catchment alterations and surface water runoff in this source protection zone arising from the proposal for the enabling road's construction, **borrow pit**, crane hardstanding etc., foundations for turbines, permanent concrete bases, reinforcing steel, permanent hardstandings, or any other component of the proposed development" [emphasis added].
- "**The windfarm development proposes several significantly large spoil management areas and one significantly large "Borrow Pit" (meaning quarry) within the catchment area of the Oldtown/Kilmanagh/Tullaroan River immediately upstream of Kilmanagh Bridge. These significant spoil management and "Borrow Pit" (quarry) areas have the potential to alter existing overland flow conveyance paths and have the potential to displace waters elsewhere and to result in an adverse impact to the existing hydrological regime of the area, especially in consideration of the 'flashy' nature of the catchment at this location**" [emphasis added].
- "The potential impact of these spoil management and "**Borrow Pit**" areas on the existing hydrological regime of the area has not been assessed or quantified in any way as part of the Site Specific Flood Risk Assessment. In this regard a detailed 2D pluvial modelling should have been undertaken" [emphasis added].
- "Hydro-G offers that the proposed on-site quarry is reported in the EIAR's Construction and Environmental Plan (EIAR Appendix 4-2, page 11, Section 2.3.3.6 **Borrow Pit**), as follows: "**The proposed onsite borrow pit is located approximately 270m north of T1 and measures approximately 15,272m2 with an estimated volume of 70,000m3. The figures presented are the anticipated maximum volumes; however, the actual volumes to be removed from the borrow pit will be confirmed at the time of construction and following detailed pre-construction site investigation works**". Hydro-G offers that Kilkenny County Council should not accept the detail presented for the applicant as having any justified reasoning, for reasons as follows: (a) An impact assessment cannot be completed at this planning stage if the applicant proposes to confirm details at the time of construction: "confirmed at the time of construction and following detailed pre-construction site investigation works". I am pretty sure that there is plenty of Irish case law precluding that proposal. (b) It seems contrary to the tenets of proper planning to allow a random, unplanned for, 15ha area quarry scar on an elevated landscape, with a c.5m deep bench depth, when there are significant planning efforts afforded established quarries in each County:
- **The use of the term Borrow Pit is disingenuous.** The applicant proposes a quarry over the Source Protection Zone of GWS sources, Callan's PWS Source and the catchment that is the Source Protection Zone for Kilkenny's surface water source for the RWSS.
- **The quarry proposed is reported by the applicant's agents as "15,272m2 with an estimated volume of 70,000m3" i.e. 1,272 m2 = 15 hectares and if the resource estimation is 70,000 m3 then there is at least 5m depth of quarrying proposed when losses are 13 accounted for.** Hydro-G offers that Kilkenny County Council should give close consideration to the proposal to use explosives in the rocks of the aquifer. The CEMP provides only small mention of this aspect of potential impact [emphasis added].
- "Chapter 9 EIAR Water presents a number of statements at odds with the law regarding water and methods to manage construction water arisings. The agents for the applicants seem to feign ignorance that all businesses involved in moving earth and rock ("Borrow Pit"/Quarry) are required to prove that the receiving environment has the baseflow and assimilative capacity to support grant of a Section 4 Discharge Licence. Construction waters arisings are deemed to be subject to the classification of Trade Effluent in the Local Government (Water Pollution) Kilkenny County Council Planning Reference

2560003 Acts 1977 & 1990. Is the "Borrow Pit" (quarry) exempt from the same considerations applied to all quarries in County Kilkenny? There is not a single quarry that would get through planning on the basis of 'grant us permission and if we need a Section 4 Discharge Licence we will get it later'" [emphasis added].

The appellant's response to the Commission

The appellant does not explain the archaic use of the term "borrow pit" and why it is being used as part of this proposal's description. As to the impacts of such excavations as required for the "borrow pit" on the potential to impact surface water and groundwater flows in the area, the appellant has not provided "Further detailed site investigations shall be provided to fully establish a conceptual site model for flow regimes in this area of the site".

The appellant refers the Commission to the HES Response.

The response from HES begins with condescension stating (the obvious), "All proposed borrow pits (and all proposed developments) occur within mapped aquifers". The point of the Commission's query is to ascertain what impact the proposal would have on the regionally important gravel aquifer sited just 993m to the southwest of the proposed borrow pit. This is a regionally important gravel aquifer in the valley of the Tullaroan Stream which is part of the Kilmanagh Gravels GWB. We know how the southern section of ~800 m of the grid connection route is also underlain by the same regionally important gravel aquifer in the valley of the Tullaroan Stream. The northern sections are underlain by regionally important gravel and karstified aquifers.

HES's original hydrology chapter is considered insufficient by CAAS and Hydro-G. The FI response and new hydraulic modelling provide more detailed analysis but do not address key gaps raised by Hydro-G and KBT.

Our client's group has consistently noted this concern stating in an earlier submission to the Commission:

- The site overlies a regionally important, highly vulnerable aquifer feeding the Kilkenny West Group Water Scheme, the Tullaroan Group Water Scheme, the Callan Town public Water Scheme in addition to numerous private wells.
- KCC and Hydro-G express serious concern about turbine foundations, borrow pits, spoil management on or near the drinking water source, with a risk of direct interception of the water table and contamination pathways.

Dr Pamela Bartley has reviewed the appellant's submission and her further submission is attached.

4.3.2 Response to Point 3, Item 3

The Commission has raised concerns, also noted by our client's group, over "the complete absence of site investigations at the location of T7". The particular concern arising has been noted by both KCC and CAAS with CAAS stating:

S8.6.2.8 states that piling foundations may be required at T7 (as no trial pit data is available at that location due to existing tree cover). The requirement for piling at T7 is proposed to be determined by analysis of post-consent ground investigations ...

S9.5.2.14 assesses the potential effects associated with use piled foundations. Because the applicant was unable to carry out site investigation works at T7 due to access issues with the area being under forestry the use of piling has been assessed as a worst case scenario ...

The appellant asked for this matter to be addressed post-consent. The Commission's request states: "Notwithstanding the rationale provided by the appellant within the Chapter 9 of the EIAR, the absence of data prohibits an adequate assessment of the potential impacts of the development on both groundwater quality and flow dynamics and surface water flows and quality at this location. Therefore you are required to undertake further site investigations proximate to the location of T7 to address this issue".

Dr Pamela Bartley has reviewed the appellant's submission and noted the following:

HES Further Information Submitted to An Coimisiún Pleanála as Response to FI. No amount of ink on paper can take away from the fact that the site investigations have not targeted the base depth proposed for the depths of excavations that will be required for construction. The risks remain unquantified. The HES Response containing a Table detailing the depths of the Trial Pits confirms that the depths were not achieved. Hydro- G would like to remind An Coimisiún Pleanála that the purpose of Site Investigation is not merely to 'tick boxes' and say - we dug a trial pit or we dug 22 trial pits or we dug a quantum that was appropriate, even if it is not appropriate. The historical purpose of Site Investigation, before this 'gold rush' to renewable compensation payments, was to use the details for the site to design with knowledge. More robust analysis is required for the potential effect of the enormous scale of the machinery that will be required to erect the masts and to carry the blades up the steep sides of the valley, of a river that floods.

Cranes are required to lift the masts and turbine blades. Counterweights are required to stabilise the cranes. The cranes and counterweights require enabling roads and land surfaces with the ability to carry 750 tonne weight of a crane itself plus the likely 200 tonne counter weight and the chain and hoist infrastructure. The pressure of the weight of the crane and

counterweight results in destruction of the permeability and pore space of subsoils in the proposed construction areas, which will change the response to flooding because pore space is changed. Hydro-G invites the inspector to interrogate that parameter in the Fluvio R&D model. The potential for increased flood risk arising from the change in soil and subsoil structure is not acknowledged by those employed by renewable energy investment firms. The Commission is requested to use their own resources, or AI, to fact check potential mass loadings arising from the enabling works that would be required to erect turbines in a flood plain wetland such as at the proposed Briskallagh Ltd. Wind Farm site. Hydro-G's research regarding civil engineering infrastructure in the databases of AI suggests, as follows:

A. crane weights (ballast/counterweights) and base loadings required for erecting a 3-blade wind turbine with a 95 m hub height and 75 m rotor diameter in a wetland flood zone is complex and requires a full engineering lift study.

B. When erecting a large wind turbine in a challenging site (wetland, flood-zone) you must account for:

The crane capacity (lift weight + reach) and corresponding ballast/counterweight.

Ground support / crane hardstanding and pad design (especially for soft or wet ground).

Water/flood risk, settlement, high water table, reduced bearing capacity.

Wind loads during erection (significant for tall hub height & large rotor).

Transport, crane mobilisation, boom length, luffing or fixed jib, outrigger spread.

Safety factors, crane manufacturer load charts, method statements, lifting plans.

C. Main Lifting cranes can have a lifting capacity of up to 850 tonnes and a tail crane up to 500 tonnes.

D. The ground pressure under a crane lifting a tower, "Every square metre under the heavy crawler chains must be able to withstand a ground pressure of 26 tonnes." theconstructionindex.co.uk E. For each of the turbines proposed, a crane of higher higher-capacity range would be required (up to 1000tonne) class cranes depending on component weights and reach). F. In certain scenarios, ground bearing capacity will be lower, so you may need piled support, mats, heavier crane pad substructure, larger footprint.

The facts of how crane and ballast weights will impact the subsoil under proposed turbine bases, haul roads up the hills or the associated downstream drainage systems are not assessed and the omissions presents a health hazard and risk to the public and the WFD's Objectives for waterbodies in the catchment. The inspector and The Commission are requested to provide detail in their reporting and discussions/voting on this matter.

4.3.3 Response to Point 3, Item 3

Dr Pamela Bartley has reviewed the appellant's submission and her submission is attached.

4.3.4 Response to Point 3, Item 4

Our client's group welcomes the Commission's request. They note how the appellant's original EIAR is deficient in this regard. S9.3.6 contains a summary of the Flood Risk Assessment (appendix 9-3). It states that the OPW Past Flood Events Maps have no records of recurring or historic flood instances within the proposed windfarm site. The risk of pluvial flooding is stated as being low. Areas of potential risk are identified including flooding. Flooding and water pollution are reported as being addressed in Chapters 5 to 15. CAAS on behalf of KCC noted how:

A summary of the flood risk assessment report (Appendix 9-1) provided in Chapter 9 shows that some sections of the cable route are within mapped fluvial flood zone extents however, because the cable will be buried it will not be at risk of being affected by flood events. The assessment notes that works in sections which are subject to flood risk, which are mainly at watercourse crossings, 'may have to be postponed following heavy rainfall events which could cause flooding in this area'.

Our client's and other third party submissions made to KCC and now to the Commission have included a history of flooding events which have impacted the appellate site. Concerns arise over the efficacy of proposed mitigation measures including silt fences, effects on groundwater and surface water resources and effects on ecological receptors.

The particular concern arising pertains to Flood risk and Kilmanagh village. In previous submissions to both KCC and the Commission, our client's group has noted that Kilmanagh has a history of serious fluvial and pluvial flooding. The proposed new access road, crossings and extensive hardstands have potential to alter runoff patterns and worsen downstream flood risk.

CAAS and KCC explicitly stated in their assessment that the original EIAR does not provide enough information to reach a reasoned conclusion on water impacts or the effectiveness of mitigation.

We note the Fluvio R&D Limited report, submitted as part of the appellants Further Information response. Our initial review of this new document finds serious and multiple erroneous statements. One such example can be found on page 50 of the Fluvio

R&D Limited report which states that special attention was given to flood levels in Kilmanagh village. In particular, and as highlighted in Figures 33 and 34 of the report, it is explicitly stated that during the occurrence of a Q100cc (1 in 100 year + climate change) or a Q1000cc (1 in 1000 year + climate change) the output of the hydraulic modelling exercise demonstrates that the hurling pitch immediately downstream of Kilmanagh Bridge does not flood. This is a significant and concerning erroneous statement and miscalculation.

The hurling pitch at this location is known to be subject to flood inundation on a regular basis. Figure 1 below illustrates the hurling pitch following one of three flood events in October and November 2023. And as recently as 11th November 2025, flooding recurred at this location once again.



Fig. 16: The hurling pitch following one of three flood events in October and November 2023

To ascertain for ourselves whether there is evidence of flood events taking place in Kilmanagh village, BPS has searched across local news archives and official flood resources to compile available visual evidence of flood events in Kilmanagh village and its immediate vicinity (e.g., Ballycallan and nearby roads). While direct high-resolution images or videos specifically labelled "Kilmanagh flood" are limited in public archives (likely due to the rural nature of the area), several relevant photos and galleries document the impacts from key events like the October 2023 flooding during Storm Babet and the November 2025 flash floods. There is clear evidence of road submersion, field inundation, and river overflow.

October 23, 2023 Flooding (Storm Babet)²

This event saw heavy rainfall (over 50mm in hours) overwhelming local drainage, flooding the R697 road through Kilmanagh and adjacent fields along the Kilmanagh/Oldtown River. A series of eyewitness photos showing deep water covering the main road (R697), with vehicles navigating shallow sections and fields turned into lakes. One image captures Kilmanagh Bridge at Kilmanagh Village, highlighting the rapid onset of flash flooding.

² See: <https://www.kilkennypeople.ie/story-telling/local-news/1330274/kilmanagh-ballycallan-hit-hard-by-flooding-in-co-kilkenny.html/2>



Fig. 17: October 23, 2023 Flooding (Storm Babet)

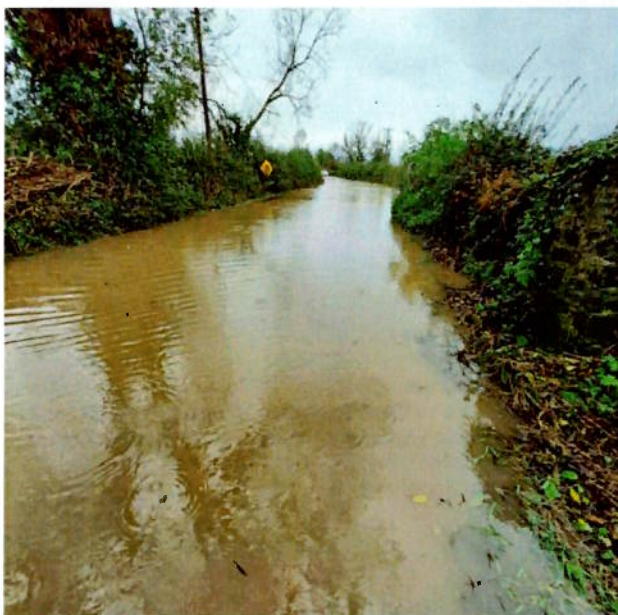


Fig. 18: October 23, 2023 Flooding (Storm Babet)



Fig. 19: October 23, 2023 Flooding (Storm Babet)



Fig. 20: October 23, 2023 Flooding (Storm Babet)



Fig. 21: October 23, 2023 Flooding (Storm Babet)

November 11–12, 2025 Flooding³

Triggered by 80–100mm of rain, this affected the R695 between Kilmanagh and Callan, with overflow from the King's River impacting low-lying areas near St. Molua's Church. The images below show the flooded King's River in Callan (Impacting Kilmanagh approaches) An image depicting the river at what local people called "worrying levels," with brown floodwaters lapping at nearby fields and roads leading into Kilmanagh.



Fig. 22: November 11–12, 2025 Flooding



Fig. 23: November 11–12, 2025 Flooding

³ <https://www.kilkennypeople.ie/news/pictures---videos/1942154/pictures-kilkenny-hit-with-heavy-rainfall-as-water-reaches-worrying-levels.html/14>



Fig. 24: November 11–12, 2025 Flooding



Fig. 25: November 11–12, 2025 Flooding



Fig. 26: November 11–12, 2025 Flooding



Fig. 27: November 11–12, 2025 Flooding



Fig. 28: November 11–12, 2025 Flooding

Concerns arise that these photographs demonstrate how the Site Specific Hydraulic Modelling exercise is flawed and cannot provide the Commission with any confidence in relation to the potential adverse impact of the proposed wind farm development on the existing hydrological regime of the area.

Dr Pamela Bartley has reviewed the appellant's submission. Her further submission is attached.

4.4 Response to Point 4 - Roads and Traffic

Our client's group endorses the KCC Planning Department's appeal stage Further Information response submitted to the Commission which states:

The Planning Authority would refer the commission to the roads report by the Roads department of Kilkenny County Council which highlighted the concern regarding the lack of plan led strategy and coordinating mechanism for the delivery of private led infrastructure connections to energy projects. Each being planned and designed on an individual basis. There are practical difficulties with this approach as highlighted in the roads report. An alternative approach is required for the connection routes to energy projects. It is considered by Kilkenny County Council that this project should be considered premature until a suitable connection route is provided/design/approved.

The KCC Roads concerns emphasise the lack of joined up planning of growing number of energy projects and the cumulative impact of this on the roads of the county. KCC's Roads Report states:

The proposed development comprises the installation of a wind farm in the vicinity of Kilmanagh and includes a 38kV grid connection to the 110kV ESB substation at Ballyragget. The 23 km long grid connection is proposed to be constructed mainly in the public road network (22.1km).

It is noted that there are a number of concurrent energy projects in the planning/development stage in the wider area which have proposed underground grid connections to the Ballyragget 110kV ESB substation. In particular, the Gromane Ltd. Farranrory windfarm which is approximately 5km distant from this development has a 31km grid connection running broadly parallel to the proposed grid connection in the public road with some overlap in the vicinity of the N77. The Farranrory project is currently in the process of obtaining Road Opening Licences for the installation of its grid connection.

Having regard to anticipated grid connection infrastructure and other potential windfarm/energy schemes in the area, there is concern that there will be separate ducting runs for each development which will severely limit the public road capacity and the Local Authority's ability to carry out its functions in respect of maintenance works and future services provision. There is significant merit in rationalising the ducting and grid connection infrastructure to cater for the various parties/developments. In particular, the crossing of structures and the duct crossing under the N77 should be rationalised.

The grid connection for this development is predominately to be installed in the Local and Regional road network. It is noted that the proposed connection will also be located within the N77 National Road extents. The grid connection works will involve the construction of ducting in trenches for 38kV electrical cable, fibre optic provision and ancillary works. The applicant has identified 13 structures/watercourses to be traversed or circumnavigated on the proposed grid connection route. It is proposed to carry out horizontal directional drilling under one bridge structure in addition to the N77/River Nore crossing. Generic crossing arrangements have been indicated on the drawings for other structures, culverts and drainage pipes.

Having regard to the above, there is significant concern regarding the lack of a plan-led strategy and co-ordinating mechanism for the delivery of private grid connection infrastructure from multiple energy developments which are being planned or delivered independently of each other. The preferred option is frequently to locate the infrastructure within the public road network to connect to a finite number of suitable electricity substations of adequate capacity. The public road network is of limited capacity and grid connection installations risk restricting or sterilising the road network for future development. It impacts Road Authorities in terms of their ability to carry out its functions in respect of maintenance works and future services provision. Policies or commercial options to interconnect energy farms to minimise the duplication of underground infrastructure have not been fully developed to rationalise the grid connection network and to minimise the cumulative impacts to road assets and road users.

Having regard to the above, and in the absence of detailed guidance in this regard, consideration could be given to deem the grid connection element to be premature.

The Commission has raised project specific concerns with the appellant. Our client remains concerned that the appellant has not addressed either the cumulative or specific roads concerns this proposal would cause.

4.4.1 Response to Point 4, Item 1

The Commission's request derives mostly or in part from the KCC Roads Report which was signed by three engineers – Executive, Senior Executive and Senior. As regards Item 1, KCC notes:

The applicant has provided a Traffic and Transport Assessment (TTA) for the proposed development in Chapter 15 Material Assets of the EIAR. The TTA identifies six key locations/routes for consideration, namely the N10, N76, R695 (Callan North), R695 (Kilmanagh South), L1009 and the R695 (east of Kilmanagh). The report also discusses the Turbine Delivery Route for abnormal loads, turbine associated components and concrete deliveries for the turbine bases. It is proposed that all other materials for the development will be delivered via the proposed new permanent access off the L5024 located at the northern end of the Proposed Wind Farm site. The document notes that for the purpose of this assessment it is assumed that the proposed delivery routes for all other materials required for the construction of the Proposed Wind Farm and the Proposed Grid Route are to and from the direction of Kilkenny, with a different route designated for deliveries accessing the site and for those exiting the site in order to minimise the impact on the local road network and to ensure that HGV trips generated by the Proposed Project do not meet travelling in opposing directions. The proposed route for deliveries to site is via the L1007-L1008 and L5024. Exiting vehicles will travel via the L5024 – L1010 and R695.

Section 15.16 of Chapter 15 notes that for the purpose of the assessment all vehicles travelling to and from the site of the proposed wind farm have been assumed to do so from the Turbine Delivery Route (TDR) and delivery routes shown in Figure 15-1a

The TTA does not provide any assessment for the approach and exit delivery routes for the development. The northern access is to cater for materials other than the concrete for the turbine bases and the turbine components which are delivered via the turbine delivery route (TDR). It is unclear from the TTA as to how the traffic associated with deliveries to the northern entrance is assessed as it appears that these traffic volumes may be included for consideration in the assessment of Links 1-6. It is anticipated that traffic generation for the grid connection ducting works will unlikely be required to access the northern entrance as the grid connection works progress towards Ballyragget. The TTA does not assess the impact of construction

traffic on the local/regional/national road network during the grid connection installation from Kilmanagh to Ballyragget. The associated displacement of local background traffic during road closures should also be considered.

The applicant shall be requested to submit a revised TTA to address the above to provide further clarity to reflect the traffic generation on the material delivery routes to and from the northern exit. The impact of construction works on the grid connection route and the traffic displacement arising from road closures should also be considered

The applicant has not provided a detailed assessment of the material delivery route to and from the northern access to ascertain the suitability of the proposed routes for construction deliveries. It is noted that the route was selected to provide a one-way system to minimise construction HGV traffic passing each other on the local road network. Notwithstanding this measure the applicant has not demonstrated that they are suitable for the movement of construction traffic having regard to the background traffic using these routes and whether they can cater adequately for two-way traffic in terms of cross section and are structurally adequate. Details of any traffic management measures associated with these delivery routes should be provided for consideration particular where any restrictions are identified.

The applicant shall be requested to carry out a full assessment of the proposed construction haul routes / diversion routes to determine the suitability of the roads for traffic diversion in terms of structural capacity and cross-section to cater for diverted traffic for the anticipated closure periods. Where deficiencies are identified, the applicant shall submit proposal for carriageway improvements, road-widening/passing bays, junction improvements, signage and any other relevant traffic management controls. The applicant is advised to consult with the Municipal District Office in respect of the assessment of the diversion routes (emphasis added).

The submitted appeal was reviewed by KCC Roads which noted:

On review of the First Party Grounds of Appeal by the applicant, it is noted that there is no significant additional information in respect of roads and traffic provided by the applicant to address the concerns and observations raised in the Road Design Office report.

The appellant has had multiple opportunities to address and assess this matter; however, it has taken the Commission asking for Further Information for any new response to be provided. The Commission's request states:

*With the exception of the concrete deliveries for the turbine foundations (7 no. days) and the delivery of the abnormally sized loads (19 no. nights), all other vehicles are proposed to access the wind farm site via the new junction proposed from the L5024 to the north. As per Figure 15-1a of the EIAR, deliveries and construction traffic will access the site from direction of L5024 to the north. Vehicles will pass through the village of Tullaroan and then continue south along the L5023, Kilkenney City via the L1007. Vehicles will pass through the village of Tullaroan and then continue south along the L5023, before entering the site via the L5024. To minimise the impact on the local road network, it has been proposed that all vehicles leaving the site will turn right when exiting the site and continue along the L5024 until it meets the L1010. Traffic will then continue south until it meets the R695 and from there, travel east in the direction of Kilkenney City. It is noted that the link flow assessment has been prepared for the section of the turbine delivery route only (i.e. 7 no. days and 19 no. nights as per above). It would therefore appear that the additional volumes of traffic through the settlement of Kilmanagh would be significantly less than what has been depicted within the link flow assessment. However, given the volume of traffic that will utilise the 'Alternative Route' as per Table 15-15 of the EIAR (i.e. General construction + grid connection construction (222 days), and Turbine delivery (standard HGVs) + grid connection construction (7 days), **you are required demonstrate that the surrounding local road network can adequately cater for the additional traffic generated during the construction phase of the proposed development.***

The appellant's response raises a range of concerns:

- What both KCC Roads and the Commission requested amounts to an amended TTA and a revised EIAR. Neither has been provided. Indeed, the response provided, which amounts to the MKO covering submission's Section 2.4.1.1 'Response to FI Item No. 1' is inadequate. Has this response been prepared by the author of the TTA and EIAR as regards roads and traffic or only by MKO? KCC's Road's appeal response can be repeated here: "On review of the First Party Grounds of Appeal by the appellant, it is noted that there is no significant additional information in respect of roads and traffic provided by the appellant to address the concerns and observations raised in the Road Design Office report". None of the submitted FI stage appendices includes a new TTA or EIAR roads chapter.
- MKO refers again to the original EIAR and summarises part of its content including Table 15-15 of the EIAR. These points are 'taken as read' as our client, KCC and CAAS have already raised concerns over them.
- MKO argues that the L1009 has already been assessed and "it may be taken to be representative of the local roads on these routes in terms of link capacity and background traffic flows". On what criteria as regards to road width, etc? What is the capacity of the road? What are the current background traffic flows. These are not provided based on any survey
- MKO issues an opinion on the L5024 as though they and not KCC and the Commission are assessing the planning application. The Commission is informed that "Based on site visits to the Proposed Wind Farm site access on the L5024 and on the proposed delivery routes it is considered that background traffic levels on the local roads comprising the delivery routes are

less than the volume observed on the L1009 west of Kilmanagh". This opinion is not backed by any credible data derived by the appellant.

- Without offering any drawings of the L1009's widths and the existing standard of the carriageway, the appellant plays the trick which is increasingly being used in roads assessments pertaining to rural roads. That is, instead of offering a survey of the road, the Commission is told that the L1009 is a Local Primary which is assumed to align with the standards set out in Table 6.1 of TII Rural Road Link Design, DN-GEO-03031, 2017. The problem is that local roads often fail to meet rural road design requirements. Local roads are often legacy roads, i.e. surface rural tracks. Insufficient analysis is provided of the L1009.
- The MKO submission makes further general comments about the L1007, L1008 (0.6km), L5023, L5024, and the L1010. What are these comments based on? They are "Based on professional judgement". With nothing provided to prove this, the appellant states: "the capacity L1009 is representative of the capacity of the local roads accessing and exiting the site". An attempt is made to ground this "professional judgement" in the original EIAR; however, as noted above, the EIAR has been deemed inadequate in this regard.
- The Commission is asked to believe the appellant when they state: "the grid construction works on those local roads will be scheduled such that there is minimal overlap with the delivery of general construction materials)". How would this be enforced?
- Notwithstanding claims as to the adequate quality and suitability of the above named local roads to serve the project, the appellant is forced to accept KCC's concerns that two-way traffic is not achieved on areas of local road network. The appellant states: **"there are locations where the carriageway characteristics narrow to short stretches of one-way operation"** (emphasis added). KCC's original Roads Report notes how the appellant needs to set out details of "Where deficiencies are identified". Having reviewed this FI submission, is the Commission any more aware now of precisely where the deficiencies are? No, the appellant has not provided these details.
- KCC stated deficient sections of local road would need to be addressed: **"the applicant shall submit proposal for carriageway improvements, road-widening/passing bays, junction improvements, signage and any other relevant traffic management controls"** (emphasis added). Rather than provide any such proposals, the appellant refers to a "UK Department for Transport Traffic Advisory Leaflet 2/046 where it is recommended that a maximum hourly capacity for a single lane road **with passing opportunities** is 300 vehicles per hour" (emphasis added). The appellant submission does not set out where these "passing opportunities" exist and so the "leaflet" [referring to UK and not to Irish roads and one assumes not specifically in the context of a wind energy planning application] has no use in this context.
- Following review of the appellant's original TTA and EIAR roads proposals, KCC raised concerns over the impacts the project would have on its own or cumulative with other permitted and/or ongoing projects in this area. They considered the proposals would have a disproportionately adverse impact on local roads and on local traffic flows. In this context, the appellant repeats proposed traffic mitigation measures which would be implemented on the subject local roads, as follows:
 - "Introduction of one-way system on local road network" (repeated from Sections 15.1.2.3, 15.1.12.5.1, and 15.1.12.5.2 and Figure 15-1b of the EIAR). This would mean significant disruption of local roads and the users of those roads. KCC did not consider these proposals – for which no specific details are provided – to be adequate. Such systems have to have a waiting point for HGVs at either end of a section of road and there are multiple such sections of road. This mitigation measure would be cumbersome, difficult to enforce, and significantly impact on traffic flows on local roads not designed for or suitable to accommodate two-way HGV traffic.
 - "The introduction of temporary traffic management measures at the L5024 access junction, including temporary road signs and the presence of flagmen". This is also a repeat from the original EIAR and TTA. The appellant is essentially promising to control not only this access junction, but every thin section of local road down which construction traffic is proposed to pass. It is not reasonable or proportionate.
 - "Discussions and agreement with the Local Authority with respect to any additional traffic management measures required on the delivery routes to and from the access junction on the L5024". The appellant would, in this way, have the Commission grant planning permission subject to a condition that despite KCC's Roads concerns, KCC is forced to try to find a way to overcome their concerns. This is not appropriate. KCC has made clear that the appellant's roads proposals lack detail and may not be actionable without carriageway improvements, road-widening/passing bays, junction improvements, signage and other works. Consent may be required from landowners adjoining local roads, etc. In short, the appellant has not provided sufficient detail for these matters to be addressed at a later stage. Traffic hazard and road safety concerns would arise.
 - The appellant also asks the Commission to assume the local roads are in a fit condition to carry HGVs and all other construction stage traffic. No proof of this has been provided. No pre construction condition surveys on the delivery routes have been undertaken. The roads proposals are premature pending these assessments taking place and the results being provided to the Commission.

Based on the above, it is clear the appellant has provided no new assessments of the subject local roads. The details provided are not more advanced than those in the original TTA and EIAR which were criticised by KCC. The appellant has provided no new traffic counts, no surveys or pre-condition surveys of the roads, and no impact assessment has been carried out individually

or cumulatively as to the predicted impact the project would have on local roads and their users. The appellant has failed to address the detailed concerns of either KCC or the Commission. The mitigation measures proposed remain those dismissed as inadequate by KCC. No proposals for carriageway improvements, road-widening/passing bays, junction improvements, signage, etc. are provided. The appellant has not proven that the road network can accommodate the additional traffic that will be generated on the local road network during the construction stage of the proposed project.

Significant additional details are required such as an amended TTA and an updated EIAR. This can only be achieved by way of refusal of this planning application followed by pre-planning consultation with KCC Roads to identify precisely what the appellant needs to provide.

4.4.2 Response to Point 4, Item 2

As noted above, KCC has raised concerns over the likely impact and cumulative impact of this project on local roads. The appellant's proposals for full road closures and diversions are proposed for Section Nos. 5 & 6 (set out in Table 15-29 of the EIAR) of the proposed grid connection route are unacceptable.

Our client's group submits that closing the c. 8.1km stretch of the R694 between Freshford Village and the N77 for c. 81 days is wholly disproportionate in terms of the adverse impacts this would have on local roads and local road users.

The appellant proposes to place the ambitions of project far above those of the existing and established rights of local people to expect their roads to remain open to serve the area.

The Commission has accepted Third Party concerns over how the R694 is a key route linking Freshford to Ballyragget. This proposal would cause traffic and commercial traffic to be forced onto inadequate diversion routes between the L1810 and L1811 for Section 5 and the L1811 for Section 6.

The Commission asked the appellant to: "consider whether full road closures along this route can be avoided or significantly minimised given that work zones works will typically vary from 100m to 200m in length. Where diversions cannot be avoided, you shall demonstrate that the indicative diversion routes can adequately cater for two-way traffic".

In asking this question, the Commission is making clear that it agrees with KCC Roads that these matters cannot be addressed by way of condition and subsequent planning compliance submissions. The appellant has repeatedly asked for such conditioning noting how: "Prior to the construction of the Proposed Grid Connection, the final diversion routes that will be used during the construction of the various sections of the cabling route will be agreed with Kilkenny County Council". This was not accepted by KCC.

In setting out their report, KCC Roads noted how the TTA and EIAR needed to be amended to include assessments of:

The impact of grid connection construction roadworks in terms of duration and traffic diversion routes and impacts on the pavement structural condition of diversion routes and the travelling public shall be assessed. The cumulative effects of traffic disruption and impact on the travelling public arising the installation of grid connections for other developments in the public road shall be considered.

On inspection of the potential diversions and construction haul/delivery routes, there is concern as to the suitability of these road to cater for construction traffic and diverted local traffic. The R694 regional road is a key route linking Freshford to Ballyragget and the proposed diversions are anticipated to be unsuitable for significant increases in commercial traffic. Additionally, with regard to Section 1 and Section 2, construction traffic will also be required to use these routes with the diverted background traffic.

The applicant has not provided a detailed assessment of the grid connection route to ascertain the optimum traffic management proposals and options to minimise road closures. No assessment of the suitability of the proposed indicative diversion routes was provided to demonstrate that they are suitable for the categories of traffic using these routes and whether they can adequately cater for two-way traffic in terms of cross section and have sufficient structural capacity. The traffic volume impact arising from the temporary re-routing of traffic during road closures on individual sections of roads, or an assessment of the proposed diversion routes for the anticipated increase in the traffic volumes during this element of the construction has not been provided

The applicant shall be requested to carry out a full assessment of the proposed construction haul routes / diversion routes to determine the suitability of the roads for traffic diversion in terms of structural capacity and cross-section to cater for diverted traffic for the anticipated closure periods. Where deficiencies are identified, the applicant shall submit proposal for carriageway improvements, road-widening/passing bays, junction improvements, signage and any other relevant traffic management controls. The applicant is advised to consult with the Municipal District Office in respect of the assessment of the diversion routes.

The applicant shall be requested to carry out a full assessment of the proposed construction haul routes / diversion routes to determine the suitability of the roads for traffic diversion in terms of structural capacity and cross-section to cater for diverted traffic for the anticipated closure periods. Where deficiencies are identified, the applicant shall submit proposal for carriageway improvements, road-widening/passing bays, junction improvements, signage and

any other relevant traffic management controls. The applicant is advised to consult with the Municipal District Office in respect of the assessment of the diversion routes

Additionally, the applicant shall be requested assess the cumulative effect on traffic, diversions and road closures that may arise from other similar projects in the wider vicinity whether occurring concurrently or sequentially. The applicant shall consult with Kilkenny County Council in respect of the traffic management detailed proposals [emphasis added].

The appellant's FI stage response raises multiple concerns:

- No amended TTA or EIAR is provided. None of the appendices attached the FI submission addresses roads matters.
- It is unclear if MKO or the project roads engineer has prepared this response.
- The response repeats point already included in the EIAR. This being the case, no new assessment results and/or no new proposals are included.
- The appellant continues to argue for conditioning of these matters with their being addressed at a later date with KCC. KCC has not accepted this approach. The appellant is either attempting to obscure matters or obfuscate when they state: "the potential diversion routes identified during the construction of the Proposed Grid Connection underground cabling route are examples of routes that may be used, and are identified for the purpose of assessing the potential impacts to local traffic". What does this even mean? The appellant continues to refer to potential diversion routes and states that they have not yet even decided which routes to use. How then can there have been any assessment of this? Despite not yet knowing the routes, the appellant states that they will be "the shortest feasible diversion routes available" – No proof of this is provided and the appellant then prevaricates stating: "but in practice, alternative routes of a similar or higher standard may be considered the preferred solution as part of the detailed traffic management plan for the construction of the Proposed Grid Connection, with agreement of the Local Authority".
- The appellant's entitled response, uninformed by consultation with KCC, essentially states that they will place traffic management measures wherever they are needed. These statements are made outside any assessment of the consequences that would arise. Our client's group object to how "significant stretches of the R694" would be subject to a 'stop & go' arrangement" for long periods. On what basis can this proposal and the cumulative impacts of the proposal be justified?
- Section 15.1.7 of the EIAR is summarised as though our client's group, KCC, and the Commission have not already read this.
Where is the answer to the Commission's question?

The appellant has singularly failed to address the question asked by the Commission or to provide any further information on which a decision could be made in this case. Significant additional details are required such as an amended TTA and an updated EIAR. This can only be achieved by way of refusal of this planning application followed by pre-planning consultation with KCC Roads to identify precisely what the appellant needs to provide.

4.4.3 Response to Point 4, Item 3

The Commission has asked a question which partly, on the issue of diversion routes, requires the appellant to address much the same point as set out in Item 2 above. The question also asks, "how construction access to the site via the L5024 is to be maintained".

KCC's assessment of the issue of diversions and the appellant's failures in properly addressing and assessing this matter are addressed above.

On the issue of the northern entrance on the L5024, matters have not moved forward. The original KCC Roads Report stated:

The applicant has provided access drawings for the northern entrance on the L5024. There is insufficient detail to identify the extent of road side boundary to be setback/modified to facilitate visibility splays for the access. Details of the boundary treatment including any drainage requirements have not been indicated. It is recommended that the sightline is checked in the vertical plane to the east. Where modification to boundaries outside the direct control of the applicant are required, the appropriate written consents shall be provided. Auto-track turning movements for a standard articulated HGV vehicle exiting to the east have been indicated. The turning manoeuvre appears to cross the verge on the opposite side of the road. The turning movements for vehicle approaching the access from the west have not been provided.

Having regard to the above the applicant shall be requested to submit an updated sightlines and entrance layout drawing to address the issues raised.

The appellant's planning appeal fails to provide these details and KCC's planning appeal stage report states:

Under Planning Application P25/60003, the Road Design Office prepared a report outlining concerns and observations in respect of the proposed windfarm and grid connection. On review of the First Party Grounds of Appeal by the applicant, it is noted that there is no significant additional information in respect of roads and traffic provided by the applicant to address the concerns and observations raised in the Road Design Office report.

In reviewing the current FI response from the appellant, BPS expected to find the matter of the northern entrance fully addressed. The appellant has submitted Drawing 230502-79FI (see Appendix-2). This offers a proposed boundary treatment plan. However, the drawing lacks detail including:

- The visibility splays for the access with sightlines clearly indicated.
- Details of drainage requirements.
- Details of the sightline on the vertical plane to the east.
- Consents from adjoining landowners for works to achieve the sightline(s) and to maintain this/these (the drawing excludes the red line boundary).
- Auto-track turning movements for a standard articulated HGV vehicle exiting to the east showing that it is not necessary to cross the verge on the opposite side of the road.
- The turning movements for vehicle approaching the access from the west, etc.

In short, no adequate new updated and adequate sightlines drawing has been submitted to address these issues.

This is very important and made more important by the appellant's reluctance to admit that this entrance will need to support abnormal weight loads will be associated with the proposed project. The appellant has refused to provide a technical load assessment despite how KCC Roads state: "Based on experience of similar projects, Kilkenny County Council is of the view that there will be abnormal weight and sized loads both on the national and non-national road networks and that assessments of structures on the road network are expected to be required as part of the Abnormal Load Permit process subject to the dimensions and weights of these loads".

The current response from the appellant raises a range of concerns:

- No amended TTA or EIAR is provided. None of the appendices attached the FI submission addresses roads matters.
- It is unclear if MKO or the project roads engineer has prepared this response.
- The response repeats point already included in the EIAR. This being the case, no new assessment results and/or no new proposals are included. Figure 15-1a and Figure 15-4a of the EIAR are 'taken as read'. Our client's group and KCC has already commented on these. The Commission has raised concerns at the lack of detail provided to date. No more detail is provided.
- Not only does the appellant set out a response which is no more than a summary of the EIAR, the response then adds uncertainty and confusion with statements such as:

*It is **estimated** that this section of the underground cabling route will take 16 days to construct.*

***The Applicant commits** that the construction schedule will be developed to ensure that there will be no occasion when the Proposed Grid Connection underground cabling route is constructed on the relevant part of Section 2 at the same time as deliveries are made to the Proposed Wind Farm site on this route.*

*While the total construction duration for the Proposed Project **is predicted to be 12 to 18 months, the traffic impact assessment presented in Section 15 of the EIAR is based on a 12 month delivery period as a conservative approach. In order to test the maximum volumes of traffic that may be generated by the Proposed Project. In the event that an additional 16 days are required for the construction of the relevant part of Section 2 outside of general construction delivery days, this will be accommodated within the additional available 6 month period (127 days) that remain in the 18 month designated construction period***

KCC Roads has indicated it finds the appellant's proposals incomplete and at odds with their experience. The appellant wants the Commission to accept estimates, non-evidenced comments, non-evidenced predictions, and to find no issue with the new reference to 18 months for the traffic impacts of the construction phase to take place rather than the 12 months in the EIAR and TTA. The Commission is asked to agree with KCC as regards the lack of credibility inherent in the appellant's proposals.

The appellant does not address the issue of the northern entrance on the L5024, does not provide detailed drawings of showing the width of the grid connection route, does not clarify how construction access to the site via the L5024 is to be maintained, and does not demonstrate that the indicative diversion routes can adequately cater to the volumes of construction traffic during this period (i.e. 58 no. days). The appellant submission is incomplete and inadequate.

Significant additional details are required such as an amended TTA and an updated EIAR. This can only be achieved by way of refusal of this planning application followed by pre-planning consultation with KCC Roads to identify precisely what the appellant needs to provide.

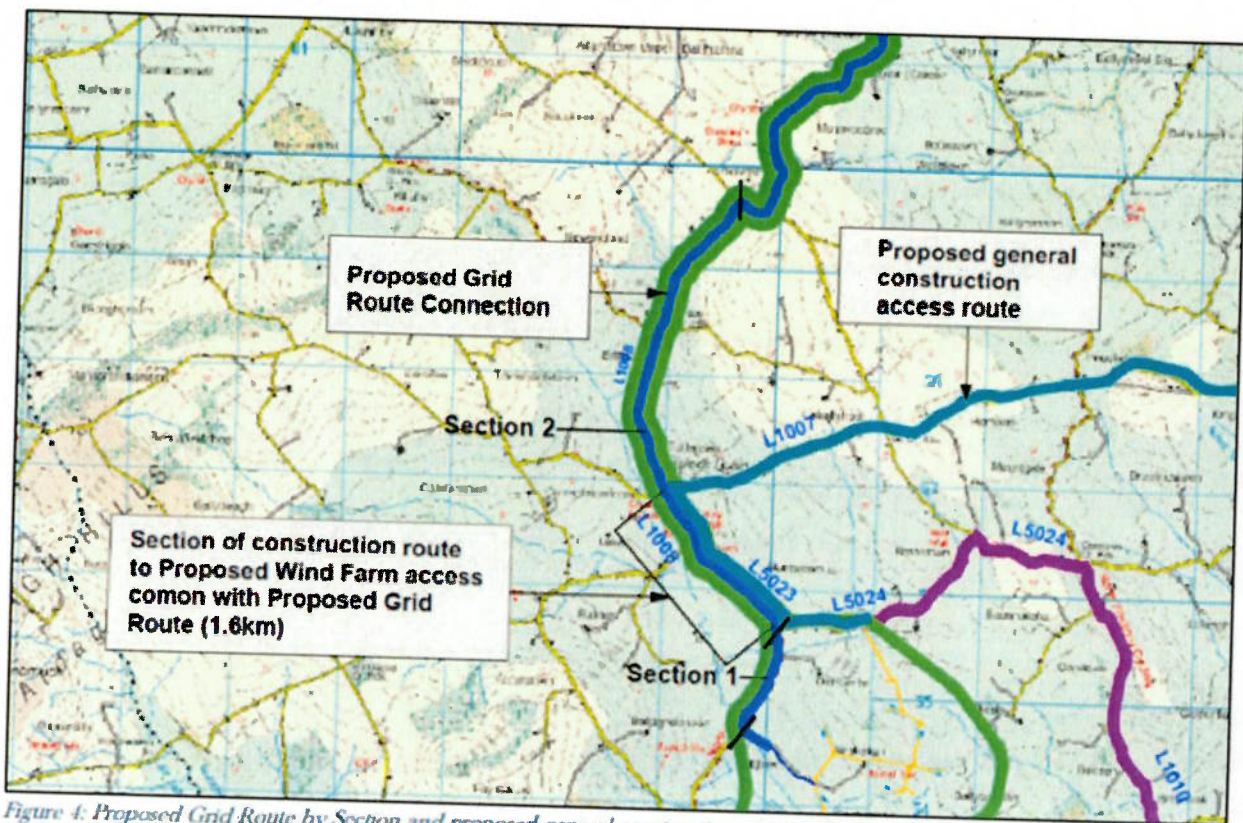


Figure 4: Proposed Grid Route by Section and proposed general construction route to the Proposed Wind Farm site
Fig. 29: Fig. 4 of the appellant's appeal stage FI submission – sourced from the original EIAR

4.4.4 Response to Point 4, Item 4

The Commission has noted the EIAR's own estimate that a total of 2,400 truck loads of stone will be required for the construction of the proposed wind farm. This constitutes the majority of 2-way PCUs/day (51.59 out of a total of 70.51) during this phase of the construction works. **This is a fact stated by the appellant in the original planning application.**

The question asked by the Commission is: "You are therefore requested to clarify whether this is in addition to the site-won material (c. 70,000m³) from the proposed borrow pit, noting the estimated volume (c. 70,000m³) that is to be extracted".

The appellant's response is again either aimed at obscuring matters or obfuscation.

The appellant refers to the 2,400 truck loads noted in the EIAR and states: "This is approximately 30% of the entire stone volume required to construct the Proposed Project, which represents a precautionary estimate. This material will be used for the initial surface dressing of the Proposed Wind Farm site roads and turbine hardstands and for maintenance of the same throughout the construction phase".

Where is the rest of the response? Are the 2,400 trucks in addition to the site-won material (c. 70,000m³) from the proposed borrow pit, noting the estimated volume (c. 70,000m³) that is to be extracted. The appellant has not answered the question.

Clearly, significant additional details are required such as an amended TTA and an updated EIAR. This can only be achieved by way of refusal of this planning application followed by pre-planning consultation with KCC Roads to identify precisely what the appellant needs to provide.

4.4.5 Response to Point 4, Item 5

The Commission states: "You are required to submit a proposed boundary treatment plan/elevation for the northern site access off the L5024." As noted above, this question relates to KCC's planning stage assessment which noted the lack of detail provided as regards the L5024 entrance.

In reviewing the current FI response from the appellant, BPS expected to find the matter of the northern entrance fully addressed. The appellant has submitted Drawing 230502-79FI (see Appendix-2). This offers a proposed boundary treatment plan. However, the drawing lacks detail including:

- The visibility splays for the access with sightlines clearly indicated,
- Details of drainage requirements,
- Details of the sightline on the vertical plane to the east,
- Consents from adjoining landowners for works to achieve the sightline(s) and to maintain this/these (the drawing excludes the red line boundary),
- Auto-track turning movements for a standard articulated HGV vehicle exiting to the east showing that it is not necessary to cross the verge on the opposite side of the road,
- The turning movements for vehicle approaching the access from the west, etc.

In short, no adequate new updated and adequate sightlines drawing has been submitted to address these issues.

The drawing does however accept that considerable hedgerow will need to be removed to facilitate the proposal and that this will not be replaced.

The Commission is asked to consider if it can be sure the visibility splays shown in Fig. 30 are within the control of the appellant. These appear to cross lands not owned by the appellant or controlled by KCC (as KCC itself noted). The Development Management Guidelines (2007) require that this matter be addressed. The appellant must demonstrate legal control or consent over all areas where development is proposed.

Why does Fig. 30 not include sightlines or AutoTracking? The L5024 is a thin rural road. Can HGVs exit in an easterly or westerly direction without crossing into lands not owned or controlled by the appellant.

Our client's group submits that Fig. 30 raises more questions than it answers.

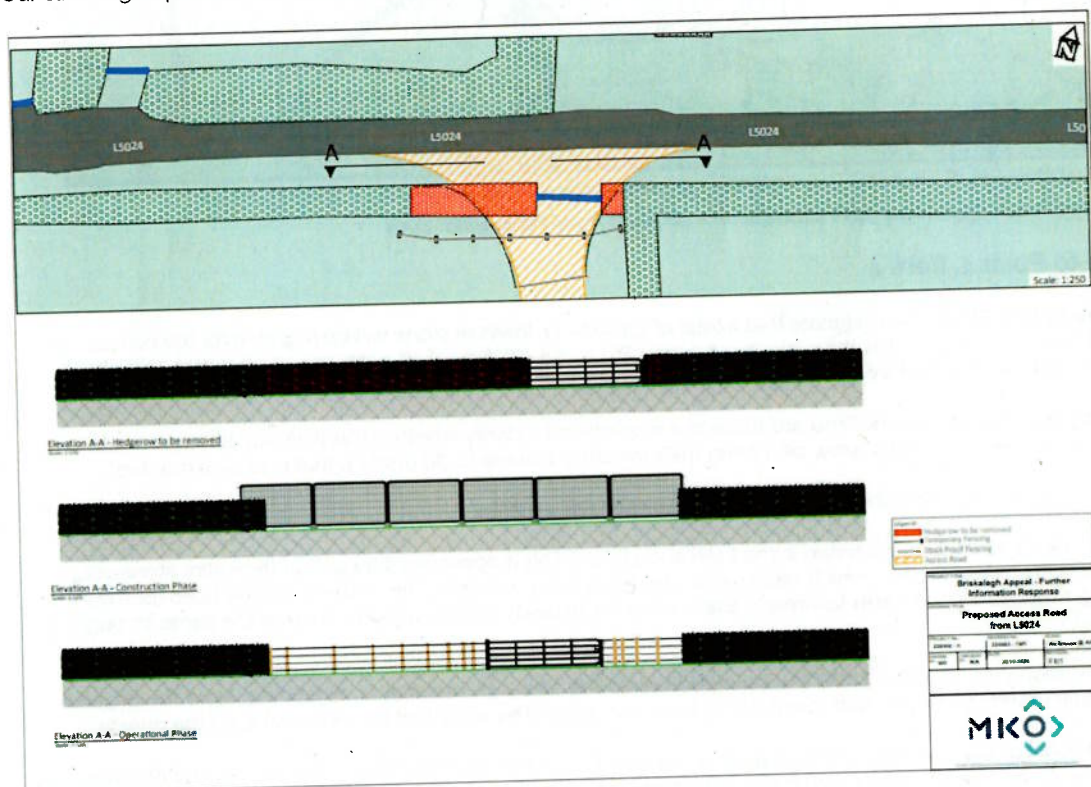


Fig. 30: Proposed Access Road from L5024 – appellant's FI stage submission

4.5 Response to Point 5 – Heritage

4.5.1 Response to Point 5, Item 1

1. Section 14.3.4.8 of the EIAR notes that there are a 6 no. bridges (CH3-8) of local cultural heritage merit located on the proposed grid connection route and it is proposed to utilise directional drilling at all bridge crossings. Therefore, it is contended that direct effects to the structures are not anticipated. However, it is stated elsewhere in the Chapter and the accompanying drawings that Horizontal Directional Drilling (HDD) is only proposed where the grid connection will cross the River Nore and at Grange Bridge (NIAH Reg. 12400902) (WC2). The underground cables are proposed to be laid in a flatbed formation for all other watercourse crossings.

Furthermore, it is noted on Table 4-5 of Appendix 6-2 (Bat Survey Report) of the EIAR that HDD is proposed at WC2, WC10 and WC13. You are therefore requested to clarify these apparent discrepancies and clarify the method proposed for each river crossing.

The Commission has identified additional errors in the appellant's planning application 'and' the appellant again amends the proposals at appeal stage.

- **As regards error**, this time the appellant states: "To clarify, HDD was initially intended at WC01 and WC02 only (i.e. the River Nore and Grange Bridge crossings). Reference to HDD occurring at bridges CH3 to CH8 (WC4, WC7, WC9, WC11, WC12 and WC13) was included in errata" and "Reference to HDD occurring at WC10 and WC13 in Appendix 6-2 of the EIAR was also included in error". The appellant has updated the drawings to reflect this.
- **As regards amended proposals**, the appellant now states that bridges identified as cultural heritage features in Chapter 14 of the EIAR are of sufficient road depth to accommodate underground cables without any potential for negative effects on the bridge structure. The appellant has not provided any basis or amended conservation report to prove that there is sufficient road depth or that the proposals would have no adverse impacts.

The appellant states: "Watercourses WC3, WC5, WC6 and WC7 (CH4) will now be HDD crossings to ensure there is no potential for any impact on the existing bridge structure." Again the appellant has not provided any basis or amended conservation report to prove that the proposals would have no adverse impacts.

The appellant states: "WC11 has also been changed from a 'Crossing Using Standard Trefoil Formation' to a 'Flatbed Formation over Bridges/Culverts' crossing type. It is confirmed that there is sufficient road depth to accommodate this without the need to raise the road level." The appellant has not provided any basis or amended conservation report to prove that there is sufficient road depth or that the proposals would have no adverse impacts.

- **As regards concerns as to the proper administration of the planning application**, the appellant states: "Table 4-5 of Chapter 4 of the EIAR: has been updated, and reproduced below as Table 2, to reflect changes to the Proposed Grid Connection underground cabling route watercourse crossing types. All crossing methodologies have been correctly referenced in Table 2 below. Please also see Appendix 2 for detailed drawings of amended watercourse crossings along the Proposed Grid Connection Underground Cabling route". This is insufficient. The appellant has not updated the Chapter 14 - 'Cultural Heritage' of the EIAR.

The appellant has clarified the proposals as regards all impacted bridges; however, a lack of detail on road depths to facilitate the amended proposals as regards accommodating underground cables has been provided. No updated EIAR 'Cultural Heritage' chapter has been provided to confirm there will be no negative effects on the bridge structure.

Chapter 14 - 'Cultural Heritage' of the EIAR refers to, 'Six bridges (CH3-8) of local cultural heritage merit are located on the Proposed Grid Connection underground cabling route'. The chapter remains unchanged.

The appellant has failed to address the Commission's concern (which reflects the concerns of the KCC Conservation Officer).

4.5.2 Response to Point 5, Item 2

The appeal submission is disingenuous as regards proposals to lay cables within roads on the bridges (as set out above) as the appellant is fully aware that the KCC Conservation Officer has stated:

Works to the carriageway of a bridge may be problematic for the following reasons: • Insufficient road depth to accommodate the new cables • Road build up results in requirements to heighten parapets, negatively impacts the character of these bridges while potentially weakens masonry elements when excavating. • Significant rubbing strips / kerbing negatively impacts the character of these bridges • Attaching hardware directly on the facade of the bridge negatively impacts character while potentially weakens masonry elements [emphasis added].

The appellant asks the Commission to ignore these concerns and to accept their assurance (with no supporting evidence) that there is "sufficient road depth to accommodate the new cables".

This is contrary to Section 9.3.7 Bridges of the City and County Development Plan which states:

There are many 18th and 19th century bridges still in use in the county today. Such structures are constructed from traditional materials of local stone, lime, and sand. They are testament to the durability of local materials and civil engineering at local level, while adding significantly to the architectural heritage of the County.

It is also contrary to Section 9.3.7.1 of the KCDP's Development Management Requirements which aim: "To ensure appropriate materials and methodologies are used for the repair works for Kilkenny's historic bridges".

Appendix 4-1 of the KCDP contains crossing methods for the hardware installations of bridges. Where bridges are historic, it is recommended that they are kept free from hardware connected with the project, and directional drilling be undertaken.

The Commission states:

Concerns have been raised by the Planning Authority's Conservation Officer regarding the potential impact of the works on the various historic bridges along the proposed grid connection route i.e. structural damage, insufficient road depth to accommodate the new cables and the potential requirement for heightened parapets due to road build up. You are required to respond to this issue and put forward proposals for HDD at bridges both included on the Record of Protected Structures (RPS Ref. C886) (WC6) and the National Inventory of Architectural Heritage (NIAH Ref. Reg. 12305031 (C886) and 12305012 (New Bridge) (WC5)) located within the urban centre of Freshford.

The appellant states:

Additional Layout Plans for HDD at WC5 and WC6 have been included as part of this RFI. Please see drawings 230502-62FI and 230502-77FI for the updated plans. As HDD crossings will be employed at these locations, there is no potential for direct negative impacts on both protected structures as the Proposed Grid Connection underground cabling will not directly interact with the bridge structures, instead drilling beneath the road surface. Therefore the findings of the EIAR (that no significant effects on bridge structures of cultural heritage significance) has not been altered.

Again, the appellant is either trying to obscure matters or is obfuscating.

The appellant takes it as a given that siting cables within roads will not have any adverse impacts. However, KCC's Conservation Officer's concern was over "Insufficient road depth to accommodate the new cables".

The "Additional Layout Plans for HDD at WC5 and WC6" have been reviewed by our client's group and they remain concerned. The appellant has not set out details of how the bridges have been surveyed including to ascertain road depths. The appellant merely states: "Where bridges identified as cultural heritage features in Chapter 14 of the EIAR are not proposed to be crossed using HDD, detailed surveys of these bridges have indicated that they have sufficient road depth to accommodate underground cables without any potential for negative effects on the bridge structure." Where is the survey report? Who carried out the survey? What was the survey methodology?

In stating: "Therefore the findings of the EIAR (that no significant effects on bridge structures of cultural heritage significance) has not been altered", the appellant means that Chapter 14 of the EIAR has not been altered. The Commission is asked to note that the KCC position on this matter has not altered, and no indication has been given as to the opinion of the appellant's own conservation expert.

While it is acknowledged that new drawings have been provided and that there is now clarity around what is proposed, this does not in and of itself comprise an assessment of the proposals. The MKO covering submission appears to represent itself as offering the opinion of the appellant's own conservation expert when this is not in fact stated. MKO are not the expert. The cultural heritage chapter was prepared by Tobar Archaeological Services Ltd. Where is its updated report?

4.6 Response to Point 6 – Landscape and Visual Assessment

In preparing this submission, BPS has returned to the original Landscape and Visual Assessment. We have reviewed this in detail and considered points raised by CAAS in support of the KCC Planner's Report.

Having done so, we consider the KCC FI Stage submission to the Commission on this issue to be very fair. It is partly based on the assessing planner visiting the site, the surrounding area, and looking back toward the site from points within the landscape. BPS has also viewed the site and its surrounds, and we reflect that the original KCC Planner's Report is also very reasonable.

KCC's FI submission states:

Effects on landscape include the extent to which the proposed development affects the overall landscape through its visibility as well as effects on other media that can affect how the landscape is perceived, such effects can include noise, flicker, and disturbance. Consideration of the overall accumulation of effects is relevant, particularly when moving about within the receiving environment. In relation to impacts on landscape, Kilkenny County Council have considered a number of contributing factors, including:

- *Reviews of the documentation provided by the applicant including Landscape Visual Impact Assessment and photomontages Public Submissions*
- *Referral responses*
- *The context of relevant policy guidelines*
- *Site visits to the development site and surrounding areas and landscapes*
- *Site visit to wind farm of similar scale in at Drumlins Park, Co. Monaghan*
- *Independent review of the application and EIAR commissioned by Kilkenny County Council*

*A dispersed pattern of residential and traditional farmhouse structures is indicative of a low population density. However, the site of the proposed development lies within a topographic enclosure that contains two settlements – Kilmanagh and Tullaroan. The proposed development will consist of seven wind turbines, each with a height in excess of 185m as well as the laying of underground 38kV cabling for approximately 23km in length under public roads to connect to the national grid at Ballyragget. **The development will take place within 1 km of over 40 dwellings. As stated in the EIAR by the applicant***

"the landscape character of the proposed windfarm site will undergo major changes in the landscape by the introduction of vertical man-made structures, ancillary infrastructure and hardstanding areas. There will be a substantial magnitude of change to the landscape in the localised areas within the proposed windfarm site where the landscape is materially altered (infrastructure footprint).

However, this clarity in relation to the magnitude of change in the landscape is not reflected accurately elsewhere in the EIAR and it is the considered view of the Planning Authority that irrespective of the further studies and documentation submitted as part of the response to the further information requested by An Coimisiún Pleanála that this fundamental principle has not been addressed by the applicant [emphasis added].

The Commission is asked to uphold the position of KCC that this proposal would unacceptable and significantly visually impact adversely on the landscape and properties within 1km.

4.6.1 Response to Point 6, Item 1

The Commission asked a technical question which has been answered in a technical manner. It has been confirmed that a 20km Study Area has been adopted for the purposes of the LVIA.

As a firm which undertakes LVIA, BPS understands why this question has been asked. A 20 km study area is very often rejected as unacceptable (or heavily criticised) in Landscape and Visual Impact Assessments (LVIA) in Ireland and the UK for the reasons (any one of which is normally fatal on its own) set out in Fig. 31.

The Commission is asked to refuse planning permission such that a revised and more focused LVIA can be prepared.

Reason	Why a 20 km radius is usually unacceptable	Typical acceptable radius (Ireland 2025 practice)
1. Disproportionately large in some areas (case-by-case assessment required)	Guidelines require the study area to be proportionate to the scale and nature of the project . A 20 km zone is the default for very large infrastructure (e.g. 400 kV overhead lines, very large onshore wind farms >50 MW, motorways). It can however appear "scatter-gun" and makes the assessment unreadable.	Onshore wind 20–50 MW → 10–15 km is now the norm Anything <20 MW → 8–12 km is typical.
2. Fails the "zone of theoretical visibility" (ZTV) test	The study area must be derived from (not dictate) the ZTV. If the ZTV shows no theoretical visibility beyond, say, 8 km, a 20 km study area is unjustified.	ZTV-based radius (commonly 5–15 km even for large wind farms in 2024–2025).
3. Contrary to current guidelines	EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022).	Explicitly states (p. 115) the study area should be "based on the zone of theoretical visibility" and the likely significance of effects". A fixed 20 km radius is almost never justified for sub-threshold or ordinary-scale projects.
4. Scottish Natural Heritage / NatureScot (2018) & LI/IEMA (2013) – still the benchmark in Ireland	Recommends 35–45 km only for the very largest developments; 20 km is the upper end even for 150 m+ turbines in open terrain. Using 20 km for anything smaller is routinely criticised.	15 km is now the de-facto maximum for most wind farms in Ireland unless exceptional visibility.
5. Makes the assessment meaningless	Listing hundreds of viewpoints out to 20 km dilutes the real impacts and is seen as an attempt to "bury" the significant effects among pages of irrelevant distant views.	Planning authorities should routinely refuse or return LVIAs that are not focussed.
6. Recent Irish precedents (2023–2025)	The Commission has repeatedly criticised 20 km study areas. Wind-farm EIARs using 20 km have been sent back for revision in 2024–2025 cases unless the ZTV genuinely extends that far (rare in Irish midlands/uplands).	Typical inspector comment: "The 20 km study area is excessive and not justified by the ZTV; the assessment of effects beyond 12 km is academic."

Fig. 31: The reasons why a 20km study area is excessive

4.7 Response to Point 7 – General

The points raised by the appellant under the heading 'General' are addressed below.

4.7.1 Response to Point 7, Item 1

The appellant's response to this request is to re-issue the EIAR's Chapter 3 – 'Consideration of Reasonable Alternatives' section. There is nothing new in the submission. The appellant has interpreted the request to mean that the Commission has not read the EIAR in detail and needed a summary of this. This is clearly not the case. The appellant offers nothing new.

Our client's group, KCC, and CAAS, have each raised concerns over how Ballyragget 110kV substation was chosen. CAAS note:

In s3.2.3.14 Sensitive Receptors it is stated that population density is low and figures presented show that it is less than a third of the national average. It is also stated that recommended setback distances can be achieved. However, consideration of proximity of the site to multiple receptors and the consequent potential for cumulative effects on the local population is minimal.

Alternative renewable energy technologies - Onshore, Offshore and Solar - are discussed in s3.2.4. A comparison of the environmental effects of the solar and onshore wind options is presented in Table 3-3. The selected option is presented as the option with the highest yield and consequently the highest carbon offset value and as having lesser potential for significant environmental effects. The evaluation of environmental effects that the latter finding is lacks rigour and objectivity. For example, the statement that the landscape value of the proposed windfarm is deemed to be of 'Low' value and sensitivity and the strategic siting of infrastructure will mitigate any potential for significant landscape and visual effects lacks veracity (ref. review of Chapter 13).

Alternative project design options including, turbine number and models, turbine layout and development design, road layout, borrow pit option, turbine component delivery are assessed in s3.2.5. ... The assessment does not present a balanced evaluation of likely effects with appropriate account or weighting of the likely significance of effects on the landscape character of the area. Consideration is given to a larger number of smaller turbines. This includes comparison of environmental effects including landscape & visual effects which shows that it was considered that the larger number of smaller turbines would be spread over a wider area and may be less visually obtrusive. Given the significance of landscape & visual effects from windfarms, this is a minimal level of consideration.

The comparison of effects of these alternatives is reliant on assessments of effects on topics such as hydrology & hydrogeology, noise and air quality elsewhere in the EIAR some of which are not well supported (ref reviews of specialist chapters) (emphasis added).

In short, CAAS find the assessment to show inadequate consideration of proximity of the site to multiple receptors and the consequent potential for cumulative effects on the local population, the evaluation of environmental effects lacks rigour and objectivity and veracity, the assessment does not present a balanced evaluation of likely effects with appropriate account or weighting of the likely significance of effects on the landscape character of the area (given the significance of landscape & visual effects from windfarms, this is a minimal level of consideration, and the comparison of effects of these alternatives is reliant on assessments of effects on topics such as hydrology & hydrogeology, noise and air quality elsewhere in the EIAR some of which are not well supported by the specialist chapters).

The CAAS assessment is relied on by the KCC Planner's Report whose own conclusions are reflected in KCC's appeal FI stage submission to the Commission which states:

Notwithstanding the request for further information by the Commission, the cumulative effects of the proposed development will impose an unreasonable and disproportionate environmental loading on the character of a rural area with a locally concentrated population. The scale of the development is unprecedented in Kilkenny due to the size of the turbines and their location on lowlands surrounded and closely overlooked by a large number of houses.

In short, the appellant has placed too little weight on the localised impacts the project would have on the surrounding population, including our client's group.

The appellant's choice of this location from the alternatives considered lacks objectivity.

4.7.2 Response to Point 7, Item 2

The absence of a plan led approach to private grid connections and its associated impacts has caused KCC to essentially state that this proposal is premature. Even KCC Roads have stated that there needs to be a plan-led approach.

The Commission states:

... you shall also outline why 'Proposed Grid Connection Underground Cabling Route Option No. 1' was discounted despite this route being adopted for the permitted Farranrory grid connection route (Kilkenny CC Pl. Ref. 21/627) and the absence of an acknowledgement of same within the consideration of alternatives (i.e. Chapter 2 of the EIAR). You are also required to consider further the cumulative impact of the proposed grid connection route from a traffic and transportation perspective given a number of the indicative diversion routes (Section Nos. 5 & 6 (Table 15-29 of the EIAR)) for the proposed grid connection overlap with the permitted grid connection route (Kilkenny CC Pl. Ref. 21/627) serving the Farranrory Wind Farm (Tipperary CC Pl. Ref. 20/972).

The appellant states: "it is acknowledged that reference to the permitted Farranrory grid connection was absent within Chapter 3 of the EIAR". This is a substantial failing of the EIAR's consideration of alternatives. The project should revert to pre-planning stage. No adequate assessment of the Farranrory grid connection is provided. The appellant merely tries to dismiss the matter despite overlap with the Farranrory grid connection route.

The appellant's primary approach to addressing this FI item as regards why underground cabling is not proposed is first to note how this would increase construction duration and costs. No basis for this claim is provided. Where are the costings?

The defence then argues it would have a greater impact on traffic and transport, air quality, climate, feature more EPA mapped watercourse crossings, etc. This is all provided without any comparison between options as to which, on balance, would be preferable in the long term. The response is cursory.

The appellant planning application is flawed as regards the consideration of alternatives having failed to fully and properly consider the Farranrory grid connection.

4.7.3 Response to Point 7, Item 3

The Commission's request is well considered. It has forced the appellant to set out what has, and by doing so, what has not been changed in the EIAR arising from this appeal stage FI response.

Our client's group is mostly concerned with what is missing. The following lacunae arise in the submission:

- No revised EIAR Chapter 3 – Reasonable Alternatives.
- No revised EIAR Chapter 6 – Biodiversity.
- No revised EIAR Chapter 9 – Hydrology and Hydrogeology.
- No revised EIAR Chapter 14 – Cultural Heritage.
- No revised Vol. 4 - Appendix 4-2-Construction & Environmental Mgmt Plan
- No revised Vol. 4 - Appendix 4-5 - Decommissioning Plan
- No revised Vol. 4 - Appendix 6-4-Biodiversity Mgmt and Enhancement Plan
- No revised Vol. 4 - Appendix 13-4 - LVIA Baseline Map
- No revised Vol. 4 - Appendix 15-2 - Traffic Management Plan
- No revised Vol. 4 - Appendix 15-3 - Autotrack Assessment - Belview Port

The appellant submission has included significant roads and traffic points, cultural heritage points, LVIA points, consideration of alternative points, consideration of biodiversity points, consideration of the construction stage points, etc. Why have the above areas of the EIAR not been amended?

The appellant states: "Where information has been altered, supported or omitted from the content submitted in the EIAR as a result of this RFI or correction of errata, this has been compiled below in subsections denoting the relevant EIAR chapters, appendices and other documents."

The difficulty is that there are multiple areas where MKO has essentially taken over the role of expert and replaced the project's cultural heritage assessor, the ecologist, etc. It has become difficult to follow the line between MKO as project agent and as project expert. Any gaps not filled by any other member of the project team is filled by MKO even if MKO is not the expert in that area. The result is an EIAR in which the Commission could not have confidence unless, for example, each member of the project team was to issue amended reports and to sign off on these.

4.7.4 Response to Point 7, Item 4

The Commission has invited the appellant to respond to all Third Party submissions.

Our client does not consider the appellant to raise anything new in this superficial review and response to the Third Party concerns arising.

KCC and CAAS have both reviewed the planning application and found that it places inadequate weight on the need to protect the amenities of local households and the local area.

Our client has made submissions to Kilkenny County Council and An Comisiún Pleanála. These have included expert reports from Grosvenor Consultancy (noise & planning), Huson & Associates, Hydro-G (hydrology/flooding), Roger Goodwillie (ecology), FP Logue (legal/planning), IARO noise study, etc.

They have closely followed the planning process to date and are fully cognisant of the Kilkenny County Council (KCC) Planning Report and Refusal, the CAAS-EIAR Review and CAAS NIS Review for KCC, and the appellant's First Party Grounds of Appeal and subsequent Response to Further Information (FI) to An Comisiún Pleanála, including updated bat surveys and hydraulic modelling.

Across all of these, the consistent community position is:

- The Briskalagh proposal is inappropriately scaled, poorly-sited and procedurally flawed. Its proposed location is within an area already making a significant contribution to national renewable energy targets.

- The EIAR, NIS, appeal and FI responses do not resolve serious deficiencies as identified by residents, experts, KCC or CAAS. The KCC Planner's Report concludes:

The cumulative effects of the proposed development will impose an unreasonable and disproportionate environmental loading on the character of a rural area with a locally concentrated population due principally to the combined effect of potential visibility and noise, as well as flicker and disruption of material assets, especially roads, during a prolonged period.

While proximities between individual turbines and individual dwellings appear to fall at, or close to, minimum standards, the cumulative effects will, arguably, exceed the threshold of what a community can be reasonably expected to tolerate for the overall residential amenity of the community. Guidelines and precedence do not offer reliable relevant thresholds for cumulative effects such as will occur (Source: Kilkenny County Council Planning Report, Appendix 3, CAAS Ltd, Environmental Impact Assessment Review, Page 55).

2. Overarching Concerns

Across documents, the key themes are:

1. **Residential amenity and human health:** unacceptable risk from noise (including low-frequency/infrasound), shadow flicker, construction disturbance and proximity of 185 m turbines to two villages and circa 218 homes within 2 km and the subsequent impact on property value.
2. **Inadequate and flawed EIAR/NIS:** substantial deficiencies in baseline data, cumulative assessment, hydrology, ecology, noise, visual impact and human health, confirmed by CAAS.
3. **Water, groundwater and flood risk:** significant risk to a vulnerable aquifer, group water schemes and already flood-prone Kilmanagh village due to the proposed borrow pits, foundations, spoil areas and new river crossings.
4. **Biodiversity and Appropriate Assessment:** unreliable botanical and ornithological baselines, insufficient bat and mammal data, and an NIS deemed non-compliant with the Habitats Directive by CAAS.
5. **Cumulative impact:** failure to properly assess the cumulative impact of multiple wind farms in the area on landscape, noise, health, ecology and community.
6. **Landscape / visual impact:** under-representation of worst-case views, particularly from the most affected homes and from Kilmanagh, Ballycallan & Tullaroan communities.
7. **Traffic and haul route:** serious construction traffic impacts and unfair burden to the community, including safety risks for local children and schools due to haul routes and construction compounds close to Kilmanagh.
8. **Planning policy & site suitability:** the site is not designated suitable for large wind development under the operative wind energy strategy (Figure 10.2 of the 2014–2020 Plan), and the proposal materially contravenes multiple local and national policy objectives.
9. **Community engagement & Aarhus:** persistent failure to engage meaningfully, repeated errors in identifying receptors, and poor-quality, shifting information over time, contrary to Aarhus principles.
10. **Company structure & accountability:** serious concerns about a limited, asset-light vehicle, offshore ownership and parallels with other problematic wind farm developments.

The community view is that the appellant's appeal, the Further Information and updated technical reports largely re-state the original position and do not resolve these substantive issues as they are incapable of being remediated.

As per Kilkenny County Council's Planner's Report, page 73

... that there are significant deficiencies in the quality and quantum of data provided, particularly in the areas of landscape and visual effects, material assets, noise, ecology and hydrology" and "that insufficient detail has been provided on the matter of cumulative effects, especially in regard to the likely effect on the residential amenity of the immediately adjacent residential areas", and "that there is evidence that the proposed development by reason of its size and scale will give rise to excessive levels of adverse effects on residential amenity due to the cumulative effects of visual intrusion, combined with noise, flicker and disturbance of access on many nearby dwellings in and around the settlements of Tullaroan, Kilmanagh, and Ballycallan. These effects are integral and incapable of being mitigated because they arise from the extent and scale of the proposed works and their proximity and position relative to dwellings (emphasis added).

The FI response does not alter these facts.

3. Residential Amenity & Human Health (Including Noise & Flicker)

The group supports the CAAS EIAR assessment at, page 19 "Cumulative and In-Combination Effects:

The assessment of cumulative effects on population and human health, particularly the latter, are undermined by issues identified elsewhere in this review in relation to the methodology adopted for assessment of cumulative effects and deficiencies in the assessments of effects on the factors which have potential to affect human health as identified in later parts of this review.

Kilkenny County Council Planning Report, Page 50 states:

*Kilkenny County Council considers that the proposed development has significant potential for **adverse impacts due to cumulative impacts**. The applicant's presentation of the assessment of cumulative effects generally fails to identify if there is real potential for cumulative effects to occur as a result of any specific other plans, projects or activities in the area; or the environmental factors under which such effects may arise. Throughout the review of each of the specialist topic EIAR chapters the finding of inadequate assessment of cumulative effects recurs. This is considered a serious flaw in the EIAR and is as a result of significant deficiencies in the quality and quantum of data provided, particularly in the areas of landscape and visual effects, material assets, noise, ecology and hydrology [emphasis added].*

It continues to be our client's group's contention that there remains significant and unresolved concerns regarding the impact on human health and residential amenity.

Section 3.1 'Proximity and unprecedented scale':

- Turbines of this size and scale, in combination with multiple windfarms in the locality is unprecedented.
- CAAS stated that the proposed development would "exceed the threshold of what a community can be reasonably expected to tolerate for the overall residential amenity of the community. Guidelines and precedence do not offer reliable relevant thresholds for cumulative effects such as will occur".

Section 3.2 'Noise, low-frequency noise and infrasound'

The FI response does not change the fundamentals of the issues at hand. Community and expert concerns remain in relation to:

- Inadequate scope
- Existing noise burden
- Predicted exceedances & underestimation
- Wake effects and turbine spacing issues remain unaddressed

CAAS explicitly states that due to deficiencies in the EIAR, "**a reasoned conclusion on effects on human health cannot be made**" and that the efficacy of mitigation measures "**cannot be determined**" [emphasis added].

In light of the above, we ask An Coimisiún Pleanála to ensure that this community is not treated as test subjects for the potential health effects associated with this proposed development.

The appellant's FI response continues to attempt to try to minimise health risks, relying heavily on sources which are out of date. The community therefore maintains that there is an unacceptable health risk.

Section 3.3 'Shadow flicker':

Residential properties will be exposed to shadow flicker exceeding the accepted threshold. These shadow flicker impacts are significant, long-term and not reliably mitigated.

The FI response does not change this.

4. Water, Hydrology, Flooding & Aquifer Protection

Section 4.1 'Groundwater & group water schemes':

- The site is sited close to a regionally important, highly vulnerable aquifer feeding the Kilkenny West Group Water Scheme, the Tullaroan Group Water Scheme, the Callan Town public Water Scheme in addition to numerous private wells.
- KCC and Hydro-G express serious concern about turbine foundations, borrow pits, spoil management on or near the drinking water source, with a risk of direct interception of the water table and contamination pathways.
- HES's original hydrology chapter is considered insufficient by CAAS and Hydro-G. The FI response and new hydraulic modelling provide more detailed analysis but do not address key gaps raised by Hydro-G and KBT.

Section 4.2 'Flood risk and Kilmanagh village':

- Kilmanagh has a history of serious fluvial and pluvial flooding. The proposed new access road, crossings and extensive hardstands have potential to alter runoff patterns and worsen downstream flood risk.
- CAAS and KCC explicitly state that the original EIAR does not provide enough information to reach a reasoned conclusion on water impacts or the effectiveness of mitigation.

We note the Fluvio R&D Limited report, submitted as part of the appellant's Further Information response. Our initial review of this new document finds serious and multiple erroneous statements. One such example can be found on page 50 of the Fluvio R&D Limited report which states that special attention was given to flood levels in Kilmanagh village. In particular, and as highlighted in Figures 33 & 34 of the report, it is explicitly stated that during the occurrence of a Q100cc (1 in 100 year + climate change) or a Q1000cc (1 in 1000 year + climate change) the output of the hydraulic modelling exercise demonstrates that the hurling pitch immediately downstream of Kilmanagh bridge does not flood. **This is a significant and concerning erroneous statement and miscalculation.**

The hurling pitch at this location is known to be subject to flood inundation on a regular basis. Fig. 16 above illustrates the hurling pitch following one of three flood events in October and November 2023. And as recently as 11th November 2025, this flooding recurred at this location once again.

This demonstrates that this Site Specific Hydraulic Modelling exercise is significantly flawed and does not provide any confidence whatsoever in relation to the potential adverse impact of the proposed wind farm development on the existing hydrological regime of the area

5. Ecology, Biodiversity & Appropriate Assessment

Section 5.1 'Botanical':

- Goodwillie's review shows significant errors in species lists (e.g. *Alopecurus aequalis*, a Flora Protection Order species, listed but not flagged; unrealistic ground flora assemblages), bringing the reliability of the entire habitat classification into question. The FI response does not respond to the errors named.
- CAAS echoed these concerns, stating that misclassification of grasslands and failure to properly interrogate the survey species lists **"calls into doubt the accuracy and reliability of the botanical report which supports the habitats identified for the NIS"** [emphasis added].

Section 5.2 'Birds & NIS non-compliance':

- CAAS concluded the NIS is non-compliant with the Habitats Directive, noting a "significant lack of supporting information for certain ecological receptors (such as birds)" and insufficient basis for ruling out adverse effects on European sites beyond reasonable scientific doubt.
- KBT highlight the contradiction between the Briskalagh Biodiversity Poster (used in public consultation, listing species such as curlew, lapwing, grey lag, etc. as present onsite) and the EIAR/NIS, where these species are then treated as absent or irrelevant. The FI response does not respond to this.

Section 5.3 'Bats and mammals':

- Original surveys for otter and other mammals were carried out in sub-optimal seasons; bat survey coverage and treatment of potential roost features and corridors were criticised by CAAS. While new bat and otter surveys have been conducted, this is significant new information which will be addressed thoroughly in the next submission as part of the public consultation.

Section 5.4 'Updated NIS':

- Please refer to the above review of the appellant's appeal stage FI submission. There are considerable lacunae in the EIAR as it now stands.

Section 5.4.1 - The updated NIS still fails to meet the legal standards of the Habitats Directive, for several reasons:

- Fundamental baseline errors remain
- Incomplete bird datasets

SCI treatment remains unresolved, no explanation has been given as to why only one species was analysed while others remain ignored species known locally e.g. curlew, lapwing, grey lag goose, golden plover, etc. This means the NIS still cannot rule out impacts on SPA bird populations beyond reasonable scientific doubt.

Under EU case law (CJEU C-258/11), mitigation cannot substitute for certainty in baseline or impact prediction. The updated NIS still breaches that requirement.

CAAS said: *"A reasoned determination cannot be made due to the absence of critical information in the NIS."*
"Reasonable scientific doubt remains."

The new information in the FI stage does not alter those failings because:

- No new bird data (other than Kingfisher) was collected,
- Hydrological doubt persists,
- Mitigation is still uncertainty-based, and
- The same defective EIAR chapters support the updated NIS.

Thus, the NIS remains legally non-compliant with Articles 6(3) and 6(4) of the Habitats Directive.

The updated NIS is still fundamentally inadequate and does not resolve the reasons KCC refused permission or the concerns raised by CAAS, the community or independent ecologists.

6. Landscape & Visual Impact

- The LVIA systematically understates visual impacts, especially from the nearest homes, Kilmanagh village and key local amenities (e.g. Ballykeeffe Amphitheatre and Nature Reserve).
- Viewpoints tend to avoid worst-case views and many photomontages are obstructed by trees or features in a way that does not reflect actual daily experience. Community-produced montages show that the 185 m turbines would dominate the skyline.
- The FI response emphasises compliance with guidance and adds one clarification but does not rectify the underlying selection bias or provide a genuine worst-case visual assessment for the core residential receptors. The appellant has ignored the community requests for specific site location photomontages.

7. Cumulative Impacts

The cumulative impact context for Briskalagh is unprecedented in Ireland. We have been unable to find another other community in this state which hosts:

- Turbines of 185 metres in height,
- Located as close as 1 km to a village centre, and
- In a landscape already containing a concentration of existing and permitted turbines comparable to Ballybay, Foyle, An Cnoc, Kyleballyoughter, Ballincurry and Farranrory (Appendix 1).

This community is already carrying a disproportionate share of the national renewable energy burden. The Briskalagh turbines, at 185m, would be the tallest ever developed in County Kilkenny and the tallest in the State. Their introduction into an already turbine-saturated area represents a significant escalation in both visual and acoustic dominance.

Section 7.1 'Cumulative Noise and Health Effects':

Independent evidence (IARO acoustic recordings, Huson & Associates review) confirms that residents already experience intrusive turbine noise from existing developments. The potential additive effect of Briskalagh, has not been modelled comprehensively.

Given international evidence that cumulative noise exposure increases health risks, the absence of robust assessment is a major deficiency.

Section 7.2 'Cumulative Landscape and Visual Impacts':

The combined presence of Ballybay, Foyle, Farranrory, Kyleballyoughter, Ballincurry and the proposed Briskalagh development would turn the rural valley into a continuous industrial wind zone. This cumulative transformation has been:

- underrepresented in appellant photomontages,
- downplayed in the LVIA,
- not assessed from key community amenities (e.g. school entrances, community centre, housing estates), and

- not addressed in the FI response.

Section 7.3 'Cumulative Hydrological and Flood Risks':

- Multiple wind farms within the same catchment mean multiple access roads, hardstands, drainage alterations, cable routes, and ground disturbances. The Briskalagh EIAR and updated NIS do not assess the combined hydrological load of these developments.
- In an area already prone to flooding and with recent severe events in Kilmanagh, this omission is unacceptable and contrary to the precautionary principle.

Section 7.4 'Cumulative Ecological Impacts' - The EIAR and updated NIS fail to:

- evaluate cumulative displacement of bird species across multiple wind farms.
- examine cumulative habitat fragmentation for bats and mammals
- assess the combined impacts of several large turbines on sensitive hedgerow corridors.

The FI response does not address any of these issues raised by the community and experts.

Section 7.5 'A community at or beyond saturation threshold':

Given the scale, height, and proximity of Briskalagh's proposed turbines, and the already heavy turbine presence in the area, the addition of this development would push the local community past any reasonable saturation point.

This is not a standard cumulative scenario, it is one that is unmatched anywhere else in the State, making it inappropriate to impose further industrialisation on this rural population.

8. Property Prices- Residential Amenity

Our client's group is concerned that the proposed development would adversely impact on the value of their properties site. The potential impact that a proposed development can have on property values is recognised by the Planning Acts which include a reason for refusal reason 10(c) of the Fourth Schedule 'Reasons for the Refusal of Permission which Exclude Compensation' of the Planning Acts 2000-2015:

10. In the case of development including any structure or any addition to or extension of a structure, the structure, addition or extension would— (c) seriously injure the amenities, or depreciate the value, of property in the vicinity.

The only basis for this scheme to proceed is that the interests of the appellant are placed above those of the area and of the established residential and rural visual amenities of our client's group's properties.

The High Court in *Gleann Fia v An Bord Pleanála* [2019] IEHC 618 has held that it is not necessary to put very detailed information before the Board that the development as granted would reduce the value of land significantly or adversely affect the enjoyment of land:

106. Although no valuation evidence was presented to back up the contention that this "would ... reduce significantly its value", there is nothing in s.37(6)(d)(ii) that mandates the submission of valuation evidence. While the court should not speculate as to the Board's thinking or reasoning, it would not be irrational or unreasonable for it to have treated the views expressed by RPS in this passage as plausible and common sense if it also accepted that the greater detail provided in the further information, and the review/approval of the Traffic and Transportation Section of the Council on 24th October, 2018 rendered the development of the pedestrian bridge and walkways more imminent, and more likely that it would be carried out by the Council.

107. Accordingly, I am of the view that there was some evidence before the Board from which it could objectively have come to the view that Condition 1, including the plans and particulars lodged with the further information, and/or Condition 35 could of themselves have led to a reduction in value of the Notice Parties' lands. The weight to be attached to this evidence was entirely a matter for the Board. For this reason, if this were the only criterion in respect of which the applicants made complaint, and was the only ground for seeking judicial review, I would not grant certiorari.

It is the professional opinion of BPS that this scheme would reduce the value of our client's group's properties. It would also make them less safe being subject to traffic hazards on the L8050.

Property value concerns are inherently tied to amenity impacts.

Given the:

- unprecedented turbine height (185m),
- proximity to Kilmanagh village (1km),
- over 215 homes within 2km,
- existing and cumulative noise/light/visual intrusion.

KCC acknowledged "significant residential amenity concerns". This in turn, surely goes without saying, that the impact on property prices cannot be underestimated in the manner the appellant continues to suggest.

Given the significant concerns regarding residential amenity, local property value concerns continue to be valid as property value is inherently tied to amenity impacts.

In addition, concerns for future residential development viability remain. We note recent instances of wind farm developers objecting to residential planning applications along with mortgage refusals on the basis of proximity to proposed wind farm development.

9. Traffic, Haul Route & Construction Disturbance

- Principal turbine delivery and construction routes pass through Kilmanagh, with a construction compound and spoil area located close to the village and approximately 120 m from St. Aidan's NS entrance.
- Concerns include child safety, congestion, noise/dust, and significant disruption to daily life, events and farming over an extended construction period (up to two years).

The FI response provides additional traffic details and some mitigation proposals but does not change the fundamental geometry- large volumes of HGVs, abnormal loads and employee traffic would still move through the heart of the community.

10. Planning Policy, Wind Strategy & Site Suitability

- FP Logue's legal opinion and KBT's submissions state that due to the Ministerial Direction, Figure 10.2 of the 2014-2020 Kilkenny County Development Plan remains operative under Section 31(6)(b) PDA 2000, and that the site for the proposed Briskalagh wind farm is not zoned for large-scale wind. (Appendix 2).
- The Commission Direction in relation ABP-315365, where the Commission expressly relied on Figure 10.2 as the operative wind strategy at page 7.
- The appellant's appeal and FI argue that the newer, but suspended, wind strategy cannot be used, yet in the same breath they rely on categories ("acceptable in principle", "open to consideration") drawn from that suspended mapping. The community characterises this as selective and disingenuous.
- It remains the fact that Figure 10.2 of the 2014-2020 Kilkenny County Development Plan remains operative under Section 31(6)(b) PDA 2000, and that the area of land selected for the proposed Briskalagh wind farm is not zoned for large-scale wind.
- KCC also identifies multiple conflicts with:
 - KC&CDP objectives on natural heritage, flooding, rural settlement, landscape protection and community well-being; and
 - the National Planning Framework and Climate Action Plan, which require renewables at appropriate locations, not at any cost.

The FI goes no way to addressing the ongoing conflicts with planning policy and site suitability.

11. Company Structure & Accountability

Briskalagh Ltd is a Special Purpose Vehicle with no asset base or trading history, ultimately controlled through offshore arrangements, despite that appellant's assertion that it is an Irish owned company. This raises concerns about liability, decommissioning, remediation and financial responsibility in the event of environmental damage.

Community submissions reference previous high-profile failures (e.g. Meenbog WF, Slievecallan WF and Knockduff WF) involving the same consulting actors, to illustrate the risks of trusting complex, remote ownership structures with high-risk developments.

The appeal and FI response do not meaningfully engage with this point beyond standard assurances, therefore the community's concerns remain.

12. Community Engagement, Aarhus & Procedural Fairness

Throughout this process:

- Information has been described by locals as piecemeal, contradictory and heavily technical, with key clarifications often emerging only late in the process (or not at all), undermining meaningful engagement.
- Important receptors (e.g. Giant Steps Montessori) were misidentified (H093 vs H104) and located on the wrong road in the appeal, calling into question the reliability of shadow flicker and noise predictions and the basic care taken with sensitive receptors.
- The Aarhus Convention rights to environmental information, participation and access to justice are regarded by the community to have been disrespected by this appellant.

13. Heritage

The appellant's FI response on heritage and conservation grounds is addressed above. The submission is inadequate.

Our client's group also has the following other concerns. The FI response fails to evaluate or protect the cultural heritage value of Kilmanagh Creamery and St Aidan's Church.

The FI response does not include:

- Photomontages from the church grounds.
- Photomontages from the Creamery forecourt or approach roads.
- Any 3D or digital reconstructions showing turbine dominance.
- Views at these receptors have been minimised or omitted.

The FI response does not examine:

- How the 185m turbines alter the cultural landscape.
- The loss of contextual integrity.
- How industrial structures undermine protected vistas.

The appellant repeatedly uses the flawed "distance-no impact" logic, ignoring:

- Elevation differences.
- Line-of-sight corridors.
- Cumulative turbine backdrop from Ballybay, Foyle and Farranrory.
- Daily-use community perspectives (school drop-off, Mass, events, funerals).

14. Conclusion: Status of community concerns

- The core concerns first raised by the community have not been addressed by the appellant's appeal or their FI responses.
- While the FI stage has added volume (e.g. extended bat surveys, hydraulic modelling, revised NIS and noise appendices), it has not cured the original deficiencies identified by CAAS, KCC and the community's experts.
- On key issues such as health & noise, hydrology & flooding, biodiversity & NIS compliance, landscape & cumulative impacts, and planning policy, the appellant's position remains essentially the same- they insist their original EIAR and NIS are adequate and rely heavily on climate and energy policy urgency to justify permission.

The community's consolidated position is therefore:

- The Briskalagh wind farm development remains an inappropriately scaled, poorly sited and a procedurally defective project in a sensitive, densely settled rural landscape already making a disproportionate contribution to national renewable energy.
- The appellant has not addressed the fundamental concerns raised by residents, experts, Kilkenny County Council or CAAS.
- There are ongoing reasonable scientific and planning doubts about its impacts on human health, water, ecology, landscape and community well-being.
- It is wholly irresponsible to expose this community to unquantified and potentially significant health risks arising from this proposal.

- In these circumstances, the only outcome consistent with proper planning, sustainable development and Ireland's legal obligations is to uphold Kilkenny County Council's refusal and again refuse permission.

5.0 Legal and validity concern

Our client's legal advisors have noticed a concern with the submitted land owner consents. This is set out below.

Briskalagh Ltd. was formerly called Shehy More Windfarm Limited. Briskalagh Limited was officially incorporated on July 27, 2023, according to filings with the Companies Registration Office. However, eight landowner consents were signed in the name of Briskalagh Limited prior to this date. Below the listed landowners and the dates on which their consents were signed:

William Corrigan 17-11-2022

Patrick Walsh 17-11-2022

Michael Murphy 16-11-2022

Dermot Hogan 11-01-2023

Patrick Murphy 09-01-2023

Bridget & Michael Brennan 28-02-2022

William Ryan 17-11-2022

Martin Brennan 16-11-2022

Briskalagh Limited did not exist at the time these consents were signed. ACP is asked to determine if these consents are valid or invalid.

6.0 Conclusion

This BPS Planning Consultants Ltd submission on behalf of our client had regard to: The National Planning Framework, The Climate Action Plan 2024 (CAP24) approved by Government on 21 May 2024, The provision of the Wind Energy Guidelines 2006, The Draft Wind Energy Guidelines 2019, The Regional Spatial and Economic Strategy 2020, The Kilkenny City and County Development Plan 2021-2027 as varied, Along with other matters including: The character of the landscape within which the proposed windfarm was to be sited, The distance to dwelling and other receptors from the development, The nature and scale of the proposed development as set out in the application documents and appeal stage Further Information documentation, The pattern of development in the area, The likely consequences of the proposed development on the environment and the proper planning and sustainable development of the area and the likely significant effects of the proposed development on European sites, the documentation submitted with the appeal stage Further Information submission, and our client's appeal submission.

Assessment of the appellant's and appeal stage Further Information submission raises significant concerns over the proposals and their accompanying NIS and EIAR (as amended):

Assessment of the appellant's appeal stage NIS amendments:

- Despite the nature of the proposed development, it is the opinion of Dr Moran, ecologist, that the conclusions of the NIS prepared with regard the planning permission application for the Briskalagh Windfarm are fundamentally and critically flawed. The documents as provided cannot sufficiently inform an Appropriate Assessment of the proposed development by the Competent Authority, owing to a combination of factors, including the lack of adequate information to assess the potential impact of the proposed project, alone or in combination with other plans/projects on the environment and/or Natura 2000 network.
- There are significant omissions, gaps and lacunae occurring within the information as submitted. The NIS prepared on behalf of Briskalagh Ltd is non-compliant with the Habitats Directive.

Assessment of the appellant's appeal stage EIAR amendments:

- There remain significant deficiencies in the quality and quantum of data provided, particularly in the areas of landscape and visual effects, material assets, noise, ecology and hydrology.
- Insufficient detail has been provided on the matter of cumulative effects, especially in regard to the likely effect on the residential amenity of the immediately adjacent residential areas.

- There is evidence that the proposed development by reason of its size and scale will give rise to excessive levels of adverse effects on residential amenity due to the cumulative effects of visual intrusion, combined with noise, flicker and disturbance of access on many nearby dwellings in and around the settlements of Tullaroan, Kilmanagh, and Ballycallan. These effects are integral and incapable of being mitigated because they arise from the extent and scale of the proposed works and their proximity and position relative to dwellings.

Visual impact assessment and project alternatives concerns:

- There is a lack of regard to the permitted 110kv grid connection extending from the west also leading to the Ballyragget via works along and under the N77 national road, and proposed directional drilling under the River Nore, the length and location of the grid connection associated with this proposed development, permitted and existing developments, together with anticipated grid connection infrastructure and other potential renewable energy developments in the area, the potential for separate ducting runs for each development which would severely limit the public road capacity and the relevant roads' ability to carry out its functions in respect of maintenance works, future services provision and road safety (thereby creating traffic hazard), the appellant has not demonstrated that the proposed 23km 38kv grid connection running from the site to the Ballyragget sub-station is the optimal routing solution in line with objectives of the Climate Action Plan 2024 and is also technically feasible having regard to potential for multiple cables within the same road and required separation distances. This concern highlights the absence of a plan-lead and co-ordinating mechanism for private grid connections, and therefore, in the absence of demonstrating that the proposed grid connection is technically feasible, the proposed development presents a significant risk to local, regional and national road network.

Hydrological concerns:

- It is a requirement of the Water Framework Directive that waters used for the abstraction of drinking water are protected so as to avoid deterioration in quality. The proposed wind turbine site is located in the groundwater abstraction catchment zone of contribution for the Callan public water supply and group water supply schemes, and the proposed grid connection route is located in the surface water abstraction catchment for the Kilkenny City (Troyswood) Water Supply. The proposed cabling route crosses a number of watercourses / tributaries which flow towards the Troyswood abstraction point on the River Nore. The documentation submitted fails to provide a comprehensive mapping and assessment of all actively flowing watercourses through the site or to adequately consider the surface water abstraction catchment the Troyswood scheme. Furthermore, the appellant has failed to demonstrate that the proposed grid connection route will not adversely impact Uisce Eireann infrastructure including along the local road L5023 in Tullaroan, along the R694 road at Freshford and at Ballyragget on the N77. The planning authority is therefore not satisfied that the appellant has demonstrated that the proposed development will not lead to unacceptable risks to groundwater within groundwater and surface water abstraction catchment zones, or impact on existing water services infrastructure contrary to public health.

Biodiversity concerns:

- The gaps in surveys informing the impacts on biodiversity, together with conflicting information within the documents submitted, the planning authority has concerns regarding potential adverse impacts on the protection of biodiversity species and habitats both within and remote from the site, with particular regard to potential impacts on water quality, botany, otters, kingfishers and other birds, amphibians and reptiles, bats, and badgers, and the effectiveness of mitigation measures proposed in the absence of a complete dataset and conflicting information. Due to these significant deficiencies in the quality and quantum of data provided, particularly in the areas of landscape and visual effects, material assets, noise, ecology and hydrology, the planning authority is not satisfied the appellant has adequately demonstrate that the proposed development would align with the aims and objectives of the Wildlife Amendment Act 2023, the Ireland's 4th National Biodiversity Action Plan 2023-2030 and to protect natural heritage, biodiversity and Kilkenny's green infrastructure network as set out in section 9.2 of the Kilkenny City and County Development Plan 2021-2027.

Building conservation concerns:

- Failure to adequately assess or demonstrate that the proposed development would not have significant adverse impacts on existing structures on (a) the Record of Monuments and Place with regard to impacts on their setting or sub-surface archaeology, and (b) the setting of a number of buildings with listed in the Kilkenny Record of Protected Structures. In particular the planning authority has concerns on the potential impacts on the setting of St. Aidan's Church of Ireland and graveyard which is a listed protected structure and national monument, and on the setting of protected structure D38, Kilmanagh Creamery, and the zones of archaeological potential along the grid connection route with particular regard to impacts within the settlement of Freshford, in particular relating to St. Lachtain's Church and graveyard national monuments. Furthermore, the appellant has failed to demonstrate that the proposed development will not lead to structural, visual or conservation impacts due to the proposed works associated with the proposed grid connection at a number of historic bridges which are listed on the Kilkenny Record of Protected Structures, on the National Inventory of Architectural Heritage, or form part of the vernacular heritage of the county. The proposed development would therefore give rise to adverse impact on the built and archaeological heritage of the county, and would be contrary to the policies as set out in the Kilkenny City and County Development Plan in chapter 9 which seeks to protect and sustainable management of the heritage of Kilkenny for the benefit of current and future generations.

Flooding concerns:

- Failure to adequately consider recent flood events downstream from the proposed site, and has failed to adequately demonstrate that the potential for the substantial works proposed during both the construction and operational phases of development will not lead to an increase in flood risk potential downstream of the proposed development site. The planning authority is not satisfied that the proposed development has adequately demonstrated that the proposed development will not give rise to flood risk downstream from the site and would therefore be contrary to the policies and objectives as set out in section 10.2.6 of the Kilkenny City and County Development Plan 2021-2027 in relation to flood risk.

7.0 Recommendation

Having regard to all the documentation submitted as part of the application and with the appellant's Further Information submission made to the Commission, proposals for which includes wind turbines (7no. with 185m tip height), borrow pit and access arrangements and cable routing for grid connection, the Environmental Impact Assessment Report and Natura Impact Statement Report, the photomontages and other details, the submissions received and the reports from the Councils' own consultants, BPS recommends that permission be refused.

7.1 Recommended reasons for refusal

1. Having regard to the size and scale of the proposed development, An Coimisiún Pleanála considers that the proposed seven (7) number turbines with 185metre tip height will, due to the cumulative effects of visual intrusion, combined with noise, flicker and disturbance of access, on a significant number of nearby dwellings in and around the settlements of Tullaroan, Kilmanagh, and Ballycallan, give rise to excessive levels of adverse effects on residential amenity in the area. These effects are integral and incapable of being mitigated because they arise from the extent and scale of the proposed works and their proximity and position relative to dwellings. Therefore, notwithstanding the National imperatives on renewable energy it is considered that the proposed development on its own and in combination with other windfarms already constructed and permitted in the area will have a disproportionate undue and unreasonable impact on the visual landscape amenity of the area and in particular will severely impact negatively the residential amenity of the community in close proximity. The proposed development would therefore be contrary to the proper planning and sustainable development of the area.
2. The Planning Authority in its assessments of the appellants' specialist chapters of the EIAR finds that there are a number of significant deficiencies in the quality and quantum of data provided, particularly in the areas of landscape and visual effects, material assets, noise, ecology and hydrology. Furthermore, insufficient detail has been provided on the matter of cumulative effects, especially in regards to the likely effect on the residential amenity of the immediately adjacent residential areas. The EIAR was found not meet the statutory EIA requirements in relation to the following sections contained therein as follows: a. Consideration of Reasonable Alternatives, including cable routes b. Description of the Proposed Project c. Population and Human Health d. Biodiversity (excluding birds) e. Birds f. Land, Soils and Geology g. Hydrology and Hydrogeology h. Air Quality i. Noise and Vibration j. Landscape and Visual k. Cultural Heritage l. Traffic and Transport m. Other Material Assets n. Interaction of Effects.
3. There is a significant lack of supporting information for certain ecological receptors (such as birds) in both the Stage 1 Screening and Stage 2 Natura impact Statement, and certain elements of the mitigation measures; with particular regard to: (a) other surveys carried out outside of the optimum season, (b) botanical surveys results accuracy and completeness, (c) comprehensive information on all watercourses within the proposed development site that have hydrological connectivity to downstream European sites, and assessment of potential effects with particular regard to cumulative effects and interactions with various construction stages and works areas across the proposed site, (d) full data sets of all SCI species recorded during surveys (including non "target species"), (e) clear rationale for the selection for "target" bird species and exclusion of other SCI species that were recorded within the proposed development site, (f) consideration of SCI species considered for assessment of potential effects in the NIS, (g) inadequate collision risk assessment for SCI species, (h) insufficient assessment for birds in the NIS supplemented with relevant scientific literature regarding the migratory pathways of species recorded, (i) insufficient information regarding the relationship between required works for the proposed grid connection and intersecting European sites to support statements made regarding absence of potential for direct effects, and (j) sufficiency and implementation of mitigation. As a result, the subsequent assessments of potential effects, the application of mitigation measures and the assessment of residual and cumulative effects are not supported in terms of a complete Appropriate Assessment process. Having regard to the Natura Impact Statement submitted as part of the planning application and the lack supporting information, the planning authority is not satisfied that there is no risk of adverse effects on the integrity of the associated European Sites (either directly or indirectly), along or in-combination with other plans or projects. The application as submitted contains reasonable scientific doubt which in line with case law precludes the planning authority as the competent authority from concluding a finding of no adverse effects.
4. Despite the nature of the proposed development, it is the opinion of Dr Moran, ecologist, that the conclusions of the NIS prepared with regard the planning permission application for the Briskalagh Windfarm are fundamentally and critically flawed. The documents as provided cannot sufficiently inform an Appropriate Assessment of the proposed development by the Competent Authority, owing to a combination of factors, including the lack of adequate information to assess the potential impact of the proposed project, alone or in combination with other plans/projects on the environment and/or Natura 2000 network. There are significant omissions, gaps and lacunae occurring within the information as submitted. The

NIS is noncompliant with the Habitats Directive. The proposed development would therefore be contrary to the proper planning and sustainable development of the area.

5. Insufficient and/or invalid proof of land owner consent to carry out the proposed development has been provided to the Commission.

8.0 Finally

This submission is made on or before the deadline set out in your letter.

There is no further statutory fee payable by our client to respond to your letter.

If you require any further details, please contact BPS using the contact details set out on our letterhead.

We confirm that BPS now acts for our client. Please issue all future correspondence to this office.

Best wishes,

Brendan Buck

Brendan Buck MIPI
Managing Director
BPS Planning & Development Consultants Ltd

Attachments:

- Copy of the Commission's letter.
- Expert submissions as set out in Section 1.0 of this letter.

Our Case Number: ABP-322154-25

Planning Authority Reference Number: 2560003

Your Reference: KBT Responsible Energy c/o Shar



An
Coimisiún
Pleanála

BPS Planning and Development Consultants
PO Box 13658
Dublin 14

Date: 02 December 2025

Re: For a period of 10 years for a development at the site. The development will consist of the provision of 7 no. wind turbines, and all ancillary works and apparatus. An Environmental Impact Assessment Report and Natura Impact Statement has been prepared in respect of the proposed development and accompany this application.

Townlands of Acragar, Ballyconra, Ballycuddihy, Ballyroe, Ballyroe (Grace), Ballyroe (Maher), Baunaniska, Boherkyle, Briskalagh, Brittas, Clone, Coolnapisha, Curraghduff, Freshford, Freshford Lots, Graigueswood, Grange, Huntstown, Kilmanagh, Knockeenglass, Knockown, Moatpark, Monabrika, Monavadaroe, Moneenaun, Oldtown, Oldtownhill, Parksgrove, Pi

Dear Sir / Madam,

I have been asked by An Coimisiún Pleanála to refer to the above mentioned appeal.

The Commission is of the opinion that, in the particular circumstances of this appeal, it is appropriate in the interests of justice to request you to make submissions or observations in relation to the enclosed submission dated 28 November 2025 received from MKO on behalf of Briskalagh Limited.

In accordance with section 131 of the Planning and Development Act, 2000, (as amended), you are requested to make any submissions or observations that you may have in relation to this enclosure **on or before 22 December 2025**. The Commission cannot consider comments that are outside the scope of the matter in question. Your submission in response to this notice must be received by the Commission **on or before the date specified above**.

If no submission or observation is received before the end of the specified period, the Commission will proceed to determine the appeal without further notice to you, in accordance with section 133 of the 2000 Act.

Please quote the above appeal reference number in any further correspondence.

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If you have any queries in the meantime, please contact the undersigned officer of the Commission at appeals@pleanala.ie.

Yours faithfully,



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18/12/25

Re: Independent Expert Review for KBT Responsible Energy in respect to the 'Hydrology and Hydrogeology' Response to Further Information as requested by An Coimisiún Pleanála – Case Briskalagh Ltd ABP-322154-25 (Kilkenny County Council refusal 2560003).

Dear Inspector

I beg you to refer to Hydro-G's two previous Observations on this case, detailed as follows:

1. Report dated 31st of January 2025 – submitted with KBT Responsible Energy's Objection on the Kilkenny County Council system when the application was made directly to Kilkenny. It is noted that the application for consent was refused by Kilkenny with a very robust and welcomed backing by EIA and NIS specialists CAAS.
2. 9 page Letter dated 17th April 2025 in which Hydro-G addressed the presented Grounds of Appeal submitted to An Coimisiún Pleanála on behalf of the applicant.

One of the primary issues here at the proposed Briskalagh Ltd.'s site is that the chosen location was wrong. Plainly wrong. This is a domino effect of the errors in the 'government' climate action plan's 'targets' for wind energy – we continue to try to bring to the table of the civil service that because the 'government' did not apply geospatial techniques then areas contributing to flooding of roads and community areas would have been screened out. This is not merely a professional 'opinion'. This is a principal tenet of EIA as set out in the EIA Directive. Ireland inc., in their drive to be the Data Centre capital of the world, and the high energy demand of this, is driving a culture of disregard for the law of Environmental Impact Assessment and creating a culture of consent for damage of the natural environment.

As stated in the Hydro-G report accompanying KBT Responsible Energy's Objection to Kilkenny County Council: In response to Mr. John McGuinness' PQ 103 question in the Oireachtas on the 5th of November 2024, Mr. Eamon Ryan admitted that Ireland's onshore Wind Targets were not tested using geospatial techniques (Wind Energy Generation – Tuesday, 5 Nov 2024 – Parliamentary Questions (33rd Dáil) – Houses of the Oireachtas): this means that the government has not proven that their targets are logistically feasible given the unconstrained land area available in Ireland but that wind energy targets were chosen by the then government based on modelling emissions and power systems. Therefore, Mr. Ryan's team decided they wanted a certain emission reduction, but they omitted any consideration of constraints posed by threats to Ireland's aquifers, and how they supply water to rural communities, neither were Conservation Objective Natura 2000 sites, nor their endangered or protected species and habitats, nor Housing Density nor Human Health implications considered in the selection of the onshore wind targets.

'Hydrology and Hydrogeology' Further Information Submitted to An Coimisiún Pleanála as Response to FI.

In relation to the Relation to the Site Specific Hydraulic Modelling undertaken by Fluvio R&D Limited, which is a 'Revised Flood Risk Assessment', it is advised that there are serious and significant concerns in relation to the methodology, output and conclusions of the Site Specific Hydraulic Modelling undertaken by Fluvio R&D Limited for the following reasons:

- 1) The hydrological assessment and analysis undertaken is not appropriate and is not comprehensive enough. A hydrological assessment has been undertaken for individual catchments within the study area, however the hydraulic modelling exercise has not been designed to incorporate and account for peak flows from each individual catchment area. The approach presented to An Coimisiún Pleanála is therefore only part of the picture, it is not cumulative, and it is likely to have resulted in an underestimation of final flow volumes.
- 2) As part of the hydrological assessment and analysis the determination of Qmed for all catchment areas is based on the small catchment 5-parameter regression equation. Other suitable hydrological techniques and equations should also have been considered in order to ensure that an appropriate and conservative determination of Qmed is accounted for.
- 3) A pivotal site adjustment factor has not been utilised as part of the hydrological assessment and analysis. It is standard practice that that a pivotal site adjustment factor is utilised.
- 4) Different distributions have been utilised in order to determine growth factors for each sub-catchment area. This is not standard or appropriate hydrological assessment methodology. Growth factors should have been selected utilising a 'best fit' methodology.
- 5) There are significant concerns over the use and accuracy of the LiDAR/RGB Drone surveying which was utilised to generate a Digital Terrain Model (DTM) for the study area. There is no information or data provided in relation to the Root Mean Square (RMS) value associated with this data, and the data has not been calibrated or truth surveyed in any way.
- 6) No information is provided whatsoever in relation to the watercourse channel, adjacent lands and hydraulic structures survey undertaken by KU217 Limited. It is standard practice that the full extent, specific details and individual cross-sectional elevation profiles of survey works are presented as part of any hydraulic modelling exercise.
- 7) Figure 10 of the Fluvio R&D Limited report indicates a significant gap in the survey points between 106.95294 and 99.5367 where it appears no watercourse channel, adjacent lands or hydraulic structures surveying works have been undertaken. This would result in a significant omission of data as part of the hydraulic modelling exercise.
- 8) The proposed new culverts have not been designed in accordance with OPW Section 50 requirements, therefore the culverts as proposed in the hydraulic model are not representative of the proposed development scenario flood regime within the watercourse channels that were analysed and assessed.
- 9) Figure 12 of the Fluvio R&D Limited report purports to illustrate the proposed development scenario

incorporated within the study area DTM. This is totally misleading. This image is simply a series of lines and figures which have been 'drawn' onto the DTM and do not demonstrate that the proposed development scenario has been properly and appropriately 'stamped' onto the DTM.

10) Page 50 of the Fluvio R&D Limited report states that special attention was given to flood levels in Kilmanagh town. In particular, and as highlighted in Figures 33 & 34 of the report, it is explicitly stated that during the occurrence of a Q100cc (1 in 100 year + climate change) or a Q1000cc (1 in 1000 year + climate change) the output of the hydraulic modelling exercise demonstrates that the hurling pitch immediately downstream of Kilmanagh bridge does not flood. This is a significant and concerning erroneous statement and miscalculation.

The hurling pitch at this location is known to be subject to flood inundation on a regular basis. Figure 1 below illustrates the hurling pitch following the flood event of October 2023.



Figure 1 – Flooding at Hurling Pitch – October 2023

As illustrated in Figure 1 above, the hurling pitch was subject to extensive flooding during the flood event of October 2023. This flood event had an estimated return period of 1 in 15 years to 1 in 20 years at this location, however the assessment and analysis undertaken by Fluvio R&D Limited presents that the hurling pitch would not be subject to flood inundation up to the 1 in 1000 year + climate change flood event. This demonstrates that this Site Specific Hydraulic Modelling exercise is significantly flawed and does not provide

any confidence whatsoever in relation to the potential adverse impact of the proposed wind farm development on the existing hydrological regime of the area.

11) The hydraulic model only extends for a distance of approximately 60m downstream of Kilmanagh bridge. In this regard the hydraulic model in no way represents the existing baseline scenario and proposed development scenario hydrological and flood regime at Kilmanagh. This is demonstrated by the point discussed above. The hydraulic model should have extended for a distance of at least 1000m downstream of Kilmanagh bridge. The inspector is referred to the series of photographs in the Hydro-G January 2025 report for KBT, which was lodged with the original objection to Kilkenny County Council as part of the PL 2560003 refusal.

12) Significant flood events have been recorded and documented within the Kilmanagh area over the years, and a significant body of information is available in relation to flood levels, flood extents and return period associated with previous flood events. As part of the hydraulic modelling exercise no attempt has been made to calibrate the hydraulic model against any of these previous and well documented flood events. This is a significant omission and therefore provides no confidence whatsoever in relation to the hydraulic modelling exercise.

13) The windfarm development proposes several significantly large spoil management areas and one significantly large barrow pit area within the catchment area of the Tullaroan River immediately upstream of Kilmanagh Bridge. These significant spoil management and barrow pit areas have the potential to alter existing overland flow conveyance paths and have the potential displace waters elsewhere and to result in an adverse impact to the existing hydrological regime of the area, especially in consideration of the 'flashy' nature of the catchment at this location. The potential impact of these spoil management and barrow pit areas on the existing hydrological regime of the area have not been assessed or quantified in any way as part of the hydraulic modelling exercise.

Hydro-G Discussion of the Significance of the Errors in Site Selection & the Continued Predicted Flooding as submitted by the applicant's agents.

Whilst climate change mitigation is important, in this case it runs counter to climate change adaptation. The siting of alleged solutions cannot be in areas where it would make climate adaptation more difficult for the local community (in this case, adaptation to high, and increasing, flood risk). Indeed, the regional economy would suffer with the additional pressures and risk of flooding. It is noted that the HES response document (dated 9th October) specifically calls out that the Fluvio R&D MODEL suggests no change over the current flood situation. NO CHANGE – I can advise An Coimisiún Pleanála that my PhD involved modelling and it is possible to build a model to give any answer one desires – all that happens is 'tweaking' input parameters.

Maladaptation refers to actions or strategies that, while intended to address the challenges posed by climate change, inadvertently exacerbate the problem, or create new vulnerabilities. This can occur when adaptation

measures are poorly planned, misaligned with the local conditions, or fail to account for long-term consequences.

The Ireland National Adaptation Framework – National Adaptation Plan 2025 (NAP 2025) published by United Nations Framework Convention on Climate Change (UNFCCC) states as follows:

- p.42, "Avoiding Maladaptation: Ensure that adaptation actions do not inadvertently create new vulnerabilities or exacerbate existing ones."
- "Consideration of Climate Mitigation: Ensure that climate mitigation outcomes are considered alongside adaptation planning where appropriate."
- p. 47, As part of its annual review, the CCAC also considers developments made in terms of supporting a just transition in terms of both mitigation and adaptation – noting in its 2023 review the need to accelerate the integration of the just transition principles across all mitigation and adaptation policy development and implementation".
- "In general, development in areas with a high risk of flooding should be avoided as per the sequential approach" and only mentions towns and cities as exceptions, section 3.3 of TII Strategic Flood Risk Assessment of National Roads 2040 Strategy (April, 2023).

Hydro-G advises the inspector that when rural areas, roads, playing pitches flood then there is a health hazard in that all septic tanks serving domestic residences, pubs, GAA facilities and schools will also flood. This means that the flood waters present a hazard in terms of microbial transfer. In addition, there is the health hazard posed by the flood roads whilst people try to get to work and school.

HES Further Information Submitted to An Coimisiún Pleanála as Response to FI.

No amount of ink on paper can take away from the fact that the site investigations have not targeted the base depth proposed for the depths of excavations that will be required for construction. The risks remain unquantified. The HES Response containing a Table detailing the depths of the Trial Pits confirms that the depths were not achieved.

Hydro-G would like to remind An Coimisiún Pleanála that the purpose of Site Investigation is not merely to 'tick boxes' and say – we dug a trial pit or we dug 22 trial pits or we dug a quantum that was appropriate, even if it is not appropriate. The historical purpose of Site Investigation, before this 'gold rush' to renewable compensation payments, was to use the details for the site to design with knowledge. More robust analysis is required for the potential effect of the enormous scale of the machinery that will be required to erect the masts and to carry the blades up the steep sides of the valley, of a river that floods.

Cranes are required to lift the masts and turbine blades. Counterweights are required to stabilise the cranes. The cranes and counterweights require enabling roads and land surfaces with the ability to carry 750 tonne weight of a crane itself plus the likely 200 tonne counter weight and the chain and hoist infrastructure. The pressure of the weight of the crane and counterweight results in destruction of the permeability and pore space of subsoils in the proposed construction areas, which will change the response to flooding because pore space is changed. Hydro-G invites the inspector to interrogate that parameter in the Fluvio R&D model. The potential for increased flood risk arising from the change in soil and subsoil structure is not acknowledged by those employed by renewable energy investment firms. The Commission is requested to use their own resources, or AI, to fact check potential mass loadings arising from the enabling works that would be required to erect turbines in a flood plain wetland such as at the proposed Briskallagh Ltd. Wind Farm site. Hydro-G's research regarding civil engineering infrastructure in the databases of AI suggests, as follows:

- A. crane weights (ballast/counterweights) and base loadings required for erecting a 3-blade wind turbine with a 95 m hub height and 75 m rotor diameter in a wetland flood zone is complex and requires a full engineering lift study.
- B. When erecting a large wind turbine in a challenging site (wetland, flood-zone) you must account for:
 - The crane capacity (lift weight + reach) and corresponding ballast/counterweight.
 - Ground support / crane hardstanding and pad design (especially for soft or wet ground).
 - Water/flood risk, settlement, high water table, reduced bearing capacity.
 - Wind loads during erection (significant for tall hub height & large rotor).
 - Transport, crane mobilisation, boom length, luffing or fixed jib, outrigger spread.
 - Safety factors, crane manufacturer load charts, method statements, lifting plans.
- C. Main Lifting cranes can have a lifting capacity of up to 850 tonnes and a tail crane up to 500 tonnes.
- D. The ground pressure under a crane lifting a tower, "Every square metre under the heavy crawler chains must be able to withstand a ground pressure of 26 tonnes." theconstructionindex.co.uk
- E. For each of the turbines proposed, a crane of higher higher-capacity range would be required (up to 1000tonne) class cranes depending on component weights and reach).
- F. In certain scenarios, ground bearing capacity will be lower, so you may need piled support, mats, heavier crane pad substructure, larger footprint.

The facts of how crane and ballast weights will impact the subsoil under proposed turbine bases, haul roads up the hills or the associated downstream drainage systems are not assessed and the omissions presents a health hazard and risk to the public and the WFD's Objectives for waterbodies in the catchment. The inspector and The Commission are requested to provide detail in their reporting and discussions/voting on this matter.

Pamela Bartley

Dr. Pamela Bartley B.Eng, M.Sc., Ph.D.

Hydrogeologist Statement of Expertise Pamela Bartley B.Eng., MSc., Ph.D

Pamela is a water focussed civil engineer with almost 30 years of practical experience in field-based groundwater investigations, drilling, instrumentation, surface water sampling, flow gauging and impact assessments, public water supply from groundwater boreholes, quarry assessments, Section 4 Discharge Licensing and wastewater treatment using Nature Based Systems.

Pamela completed her primary training in the RTC system. She completed a Certificate in Civil Engineering in Letterkenny RTC and a Diploma in Water and Wastewater Engineering at Sligo RTC in the early 1990's. Her Bachelor of Engineering degree was completed at the School of Civil Engineering at Queen's University, Belfast, and her postgraduate education at the School of Civil Engineering at Trinity College, Dublin (TCD). She completed an MSc. in Environmental Engineering at the School of Civil Engineering at TCD, which had geotechnical, hydrology, hydrogeology and legislation specialties and later a hydrogeologically focussed Ph.D at TCD.

Pamela is considered an Expert Service Provider to Uisce Eireann and limestone bedrock quarries. With respect to the extractive industry, Pamela is considered an EIA specialist with discharge licensing competency in the context of the Water Pollution Act, enacted Irish Regulation and EU Directives. She has completed impact assessments and assisted in successful permission attainment for many regionally important quarries in SAC settings. Pamela's quarry assessments, successful EIARs gaining planning and associated Section 4 Discharge Licences. Many of these quarries operate close to SAC catchments or in proximity to NHA Bogs and they have successfully managed their discharge, under licence, for many years.

Pamela has successfully completed post doctorate formal course training in the areas of:

- PSDP & PSCS (IOSH certified, 2016) & Level 5 First Aider (2017)
- Karst Hydrogeology (GSI, 2013)
- On Site Wastewater & Water Services Amendment Act 2012 (IE, 6-week programme 2012 & Dublin 2012)
- Zero Discharge Willow Wastewater Systems Design Courses (Denmark 2008 & 2011 & Ireland 2012)
- Expert Witness (IE, 2011) & Planning & Development Act (IE, 2010)
- Surface Water Regulations 2009 (DoE, 2010 & 2011)

- Sustainable Drainage (Wallingford/CIRIA, 2005 & 2008)
- Groundwater & Contaminant Microbiology (IGI/GSI, 2006)
- Source Protection Zone Delineation (IGI/GSI, 2007)
- Site Suitability Assessment (FETAC, 2002)
- Applied Groundwater Modelling (ESI, UK, 2000)

Pamela's water supply borehole expertise has been gained in the field by her personal supervision of the drilling and designing the required subsurface completions for large scale abstractions for Group Water Schemes, many Public Supply groundwater well sources for Galway County Council, Clare County Council and later for Irish Water in Counties from Donegal to Galway and the Roscommon border. Amongst many other private sites, she has completed successful boreholes for Kilonan Castle in Roscommon, Lakeland Dairies in Cavan, The Killeslin Hotel, Co. Laois, The Loughrea Hotel, The Charleville Park Hotel and the Motorway Service Stations at the Obama Plaza, Galway Plaza and the Supermacs Service station in Tipperary.

As a result of work in evaluating planning appeals, Pamela has become specialist in planning evaluations in the context of enacted Irish Regulation and EU Directives concerning the water environment such as the Groundwater Regulations (S.I. No. 9 of 2010 & Amendment Regulations S.I. No. 366/2016), Surface Water Regulations (S.I. No. 272 of 2009 & Amendment Regulations S.I. No. 386 of 2015), Water Framework and Habitats' Directives. She has been an invited guest speaker at An Board Pleanála, The Irish Concrete Federation, The Health Service Executive, Environmental Health Officers National Conference, The Irish Planning Institute's National Conference, The International Association of Hydrogeologist's National Conference (Irish Branch) and has delivered hydrogeological lectures to the public during Science Week. In the past, she has lectured in third level institutions (WIT, CIT, 1996 – 1999), delivered practical laboratory instruction in the assessment of subsoils for the FETAC Site Assessor programme and also demonstrated hydraulics laboratory and practical field survey tutorial modules at Trinity College Dublin (1996). Pamela is a qualified and certified 'Site Assessor' and interviewer of examination candidates in respect of eligibility for the Site Suitability FETAC Qualification.

Pamela Bartley's company is Bartley Hydrogeology Ltd., registered to trade as Hydro-G. The company holds professional indemnity insurance of €2million for each and every claim in each period and the company holds both employers, public and products liability insurances (Employers Liability : €13,000,000 any one claim/unlimited any one period of insurance, Public Liability : €6.5 million, Products Liability : €6.5 million).

Pamela is qualified and IOSH certified to act as PSDP (Project Supervisor Design Phase) & PSCS (Project Supervisor Construction Stage) as defined by the Construction Regulations.

The company is a registered Irish Water Supplier (no. 1855) and Pamela Bartley is HSQE approved within Irish Water and is one of their Hydrogeologist Panel service providers.

PEER REVIEW OF APPROPRIATE ASSESSMENT SCREENING AND NATURA IMPACT
ASSESSMENT WITH REGARD TO APPLICATION FOR PLANNING PERMISSION BY
BRISKALAGH LTD FOR "BRISKALAGH WINDFARM" (PL10.322154)

DECEMBER 2025



1 Competency of Author

This report, prepared by Dr Patrick Moran on behalf of KBT Responsible Energy, concerns a planning application by Briskalagh Ltd. to An Coimisiún Pleanála for a project including 7 No. wind turbines and associated infrastructure at Briskalagh and adjacent townlands, near Kilmanagh in Co. Kilkenny, including substation and underground cabling. This report comprises a peer-review of the (revised) Appropriate Assessment screening and Natura Impact Statement prepared by MKO on behalf of the applicant to inform the Competent Authority. Dr Moran holds a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD), a M.Sc. in Geographical Information Systems (UU, Coleraine), a Higher Diploma in Environmental and Planning Law (King's Inn) and a M.Sc. in Environmental and Climate Change Law (UCD). Dr Moran has in excess of 25 years of experience in undertaking ecological surveys on both an academic and a professional basis. Dr Moran has peer-reviewed EIAR and NIS for a multitude of both public (for example An Bord Pleanála, Office of Public Works and Co. Councils) and private clients regarding a wide variety of planning proposals.

2 Brief Outline of proposed development

Briskalagh Ltd. has submitted a planning appeal to An Coimisiún Pleanála regarding planning permission to construct the Briskalagh Wind Farm, County Kilkenny (An Coimisiún Pleanála - Case reference: PL10.322154 Planning Authority Case Reference: 2560003). The proposed development (for a period of 10 years) will consist of the provision of 7 no. wind turbines, and all ancillary works and apparatus.

It must be noted that while renewable energy projects are vital for the achievement of climate goals, the provision of sufficient data to inform the potential environmental impacts of renewable energy projects to ensure that these projects are developed in appropriate locations is nevertheless required.

3 Grounds for objection

Given the current Climate and Biodiversity Emergency, and the inextricable link between the two issues, this objection is not concerned with the necessity for renewable energy. Rather, this objection concerns inadequacies within the information prepared by the applicant to inform the Competent Authority with regard to findings of the Appropriate Assessment Screening and Natura Impact Statement (NIS) prepared on behalf of the applicant. These inadequacies have:

- Precluded the identification of potentially significant likely impacts of the proposed development on Natura 2000 sites proximate to the development;
- Precluded the implementation of sufficient measures to mitigate against potential adverse impacts of the proposed development on the Conservation Objectives of Qualifying Interests of proximate Natura 2000 sites; and
- Precluded the determination that the proposed development will not alone, or in combination with other plans and projects, adversely affect the integrity of the Natura 2000 sites examined in view of the Conservation Objectives of Qualifying Interests.

The legal tests for Appropriate Assessment screening and the preparation of a Natura Impact Statement have not, thus, been met.

4 Examples of omissions/lacunae impacting conclusions of Appropriate Assessment process

The granting of development consent by the Relevant Authority following appropriate assessment (AA) is conditional on the removal of all scientific doubt regarding potential adverse impacts on any Natura 2000 sites concerned, and the Relevant Authority must establish that specific scientific findings exist that permit this removal of doubt¹. The appropriate assessment screening and Natura Impact Statement provided in support of the planning application are inadequately informed and are wholly inadequate and fatally flawed, containing numerous gaps, omissions and *lacunae*. Granting of development consent would, therefore, be unlawful². Examples of gaps, omissions and *lacunae* are presented in the following sections.

4.1 Inadequate methodology with regard to establishing vantage points, undertaking viewsheds, collision risk modelling and establishing zone of influence

The methodology utilised to undertake winter bird surveys informing the collision risk modelling, critical to any assessment of potential impact on avifauna is wholly insufficient. Critical to the calculations utilised in the Collision Risk Modelling, which is crucial in informing the Appropriate Assessment process, is the use of vantage points from which observers can determine if birds pass through key areas of the proposed development. The validation of the scientific accuracy of data gathered at vantage points is entirely dependent on area visible from that vantage point, or "Viewshed". It is noted that viewsheds were generated utilising Geographic Information Systems, presenting information on several variables upon which the outcome of viewshed analysis (and thus the scientific accuracy of the data gathered from vantage points) is dependant. These variables include the input surface raster (Digital Elevation Model, DEM or Digital Terrain Model, DTM -both are indicated in methodology, and it is not clear if both were utilised), Input point (vantage point), height of observer, Z-factor (height above the input surface raster to be considered). Key to these is the surface input raster – with DEM not considering vegetation, buildings, etc. but only ground levels. The input raster layers (DEM/DTM) utilised do not take into account hedges, trees, woodlands, buildings, etc. The efficacy of vantage points cannot be determined to be scientifically robust in the absence of detailed information provided by a Digital Surface Model – (DSM). The applicant has stated that

¹ [2014] IEHC 400, [2018] IESC 31

² C-258/11

"...The relative height of any surrounding vegetation and its effects on visibility was recorded during a site visit and is also accounted for in the analysis..."

This method is wholly subjective and not repeatable with the scientific precision required to inform the preparation of viewsheds, in particular where only one vantage point is utilised. A viewshed informed by a DSM, particularly where only one vantage point is utilised to assess a development comprising in excess of three turbines, is integral to collision-risk modelling.

Throughout the survey area are a wide range of objects including forestry, scrub, hedgerows, etc. that would have impacted upon the viewshed from any vantage point to varying degrees.

Although the applicant documents frequently quote Scottish Natural Heritage Guidelines, NatureScot³ (updated SNH) state

"...Birds are often visible when the ground they are flying over is not. Thus, birds can sometimes be seen flying or soaring over hidden valleys and watersheds. Where the key purpose is to estimate the risk of collision with turbines, it is the visibility of the airspace to be occupied by the turbine rotors (the collision risk volume) that is of prime importance. Therefore, it is recommended that visibility be calculated using the least visible part of this airspace, i.e. an imaginary layer suspended at the lowermost height passed through by the rotor blade tips (typically about 20-30m above ground level). Predicting visibility at this level is a simple task using GIS however it should be noted that the baseline should take account of any forestry or other features that will potentially obstruct the view. For example, forestry may be 10-30m high and if viewshed height is taken as 20-30m ground level, the visible area could be overestimated if there is forestry within the viewshed. Being able to view all or most of the site to ground level can be helpful in gauging overall bird activity and usage of the site but is not as important as being able to view the collision risk volume..."

The Nature Scot methodology, as frequently quoted throughout the applicants documents also states

"We recommend scanning an arc of up to 180° from each VP. Larger arcs cannot be scanned efficiently. With proposals for up to three turbines it may be possible to observe the entire survey area from a single VP. In most cases, however, two or more VPs will be required..."

³ <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms>

The applicant has utilised just one Vantage Point, with viewsheds that do not take into account surface terrain with any scientific accuracy or precision. The Collision Risk Modelling, critical with regard to the NIS, is based on results from vantage point surveying gathered using compromised viewshed analysis and cannot be considered scientifically robust, accurate or repeatable. While the NIS considered the River Nore SPA, it is entirely possible that the site is utilised during commuting times by species that are the QI's of more distant SPAs (establishing a S-P-R linkage between the site and Natura 2000 sites beyond the identified zone of influence).

The results of the winter bird surveys, Collision Risk Modelling, identification of an appropriate zone of influence and therefore the conclusions of the Appropriate Assessment screening and the NIS can only be considered to be fatally flawed.

4.2 Inadequate assessment of impacts on diurnally active species

Golden Plover (*Pluvialis apricaria*) is recorded as occurring within/adjacent the development footprint during daylight hours. In their refusal of permission, Kilkenny Co Council highlighted an absence of information pertaining to Lapwing (*Vanellus vanellus*). Both Lapwing and Golden Plover are listed in the Natura 2000 data form for the River Barrow and River Nore SAC in Table 3.2 of the form (Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them). These species typically forage across farmland at night away from roosting sites. The day-time distribution of these species cannot be used to predict post-sunset use of habitats⁴. Golden Plover is an Annex I (Birds Directive⁵) species. Lapwing is Red-listed. Both species are listed as occurring within the proximate SAC. There was no survey effort to identify if habitats occurring are utilised as an *ex situ* foraging site for either species post-sunset. The failure to determine if habitat present is utilised during nocturnal commuting/foraging is a critical flaw in the assessment of the ecological resource occurring, with serious ramifications for the conclusions of the Collision Risk Modelling and NIS prepared in support of the proposed development⁶.

There are records of Whooper Swan (*Cygnus cygnus*) within the flight activity survey area. While Vantage point watches can be utilised to determine regular commuting flights between roosts and foraging areas, the vantage point watches as presented do not satisfy this requirement. It has been established that Whooper Swan move between roosting sites and foraging sites at key times before

⁴ Gillings S, Fullar R and Sutherland W (2005). Diurnal studies do not predict nocturnal habitat choice and site selection of European Golden Plover (*Pluvialis apricaria*) and Northern Lapwing (*Vanellus vanellus*). *The Auk*, 122(4), pp 1249 – 1260.

⁵ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

⁶ [2020] IEHC 622

sunrise dawn and after sunset, and even in darkness⁷. Furthermore, Whooper Swans typically fly at low altitudes (often below 15 metres) when commuting between foraging and roosting sites but can increase flight height during conditions of reduced visibility or when anticipating a longer commute (for example during very cold weather when inland water bodies may be frozen-over). No systematic, vantage point surveys (from which birds flying below 15 m) were undertaken at the key times of an hour before sunrise and an hour after sunset. As such, it cannot be stated that the methodology utilised is based on best scientific practice (for example, the potential use of the site and *environs* by commuting Whooper Swan at key times in near zero lux visibility pre-dawn and post-sunset).

4.3 Inadequate assessment of impacts of proposed development on the Conservation Objectives of White-clawed Crayfish

Within the "Aquatic Baseline Report" it is stated that with regard to additional survey recordings in the vicinity of Survey Location WF-1

"...While undertaking the otter survey at the survey location, Otter (Lutra lutra) spraint and tracks were recorded. The Otter spraint contained some crayfish remains. There were no other otter signs recorded at this survey location..."

Within Irish Wildlife Manual No. 45 the presence of crayfish remains within Otter spraint is considered "surrogate" information. The presence of crayfish remains in otter spraint is limited by time – it can easily be washed away in heavy rain, etc. The presence of crayfish remains in Otter spraint at survey location WF-1 must be taken as evidence of recent presence of White-clawed Crayfish in the immediate vicinity.

Within the Biodiversity Chapter, which informs the Appropriate Assessment screening and NIS, however, with regard White-clawed Crayfish it is stated

"...There was no positive eDNA results for freshwater pearl mussel or white-clawed crayfish at any survey location. There were however strong positive results for crayfish plague. No otter holts were recorded during surveys however otter spraint and prints were recorded showing use of the area by otter. A kingfisher was observed flying upstream on the Tullaroan Stream

⁷ Rees E, Bruce J and White G (2005). Factors affecting the behavioural responses of whooper swans (*Cygnus c. cygnus*) to various human activities. *Biological Conservation*, 121, pp 369 - 382

watercourse however no kingfisher burrows were noted within the vicinity of any survey point..."

There is no reference in the Biodiversity Chapter to the recording of White-clawed Crayfish in otter spraint at WF-1, a surrogate indication of the presence of this species. There are, however, multiple references to the presence of *Aphanomyces astaci*, the organism responsible for crayfish plague. Records of White-clawed Crayfish (Figure 1) and incidences of crayfish plague (Figure 2) as occurring in the vicinity of the proposed development were accessed from the NBDC datacentre on 13/12/25. The potential impacts of the spread of crayfish plague during the construction of the proposed development on the River Barrow and River Nore SAC have not been sufficiently taken into account within the Appropriate assessment. White-clawed Crayfish are a Qualifying Interest of the River Barrow and River Nore SAC. According to the most recent assessments (2025)⁸, the 2025 Overall status and trend for White-clawed Crayfish, population status and habitat for the species is bad and deteriorating. The 2025 future prospects for this species are unfavourable-bad.

Of note, the AA screening and NIS have throughout referred to the 2019 Article 17 reports, which are out of date (this refers to Article 17 reports regarding the conservation status of various habitats and species on a National scale. A review of Article 17 reports is directly addressed in the Desk Study Section of the AA/NIS. The updated information (2025 relative to 2019) regarding conservation status of habitats and species on a National level has not, therefore been taken into account in the NIS).

⁸ NPWS (2025). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview.

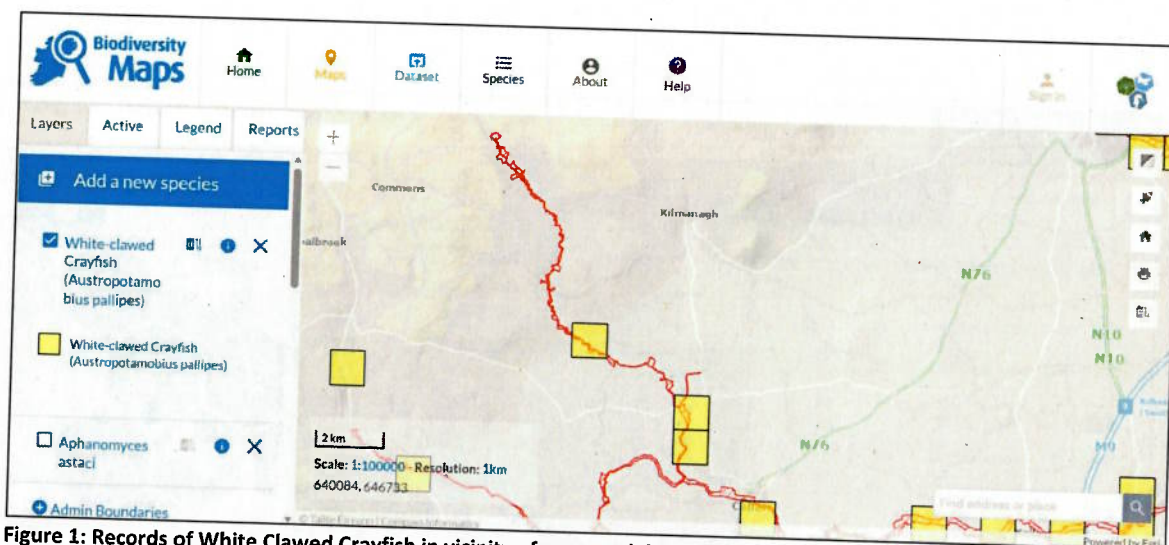


Figure 1: Records of White Clawed Crayfish in vicinity of proposed development

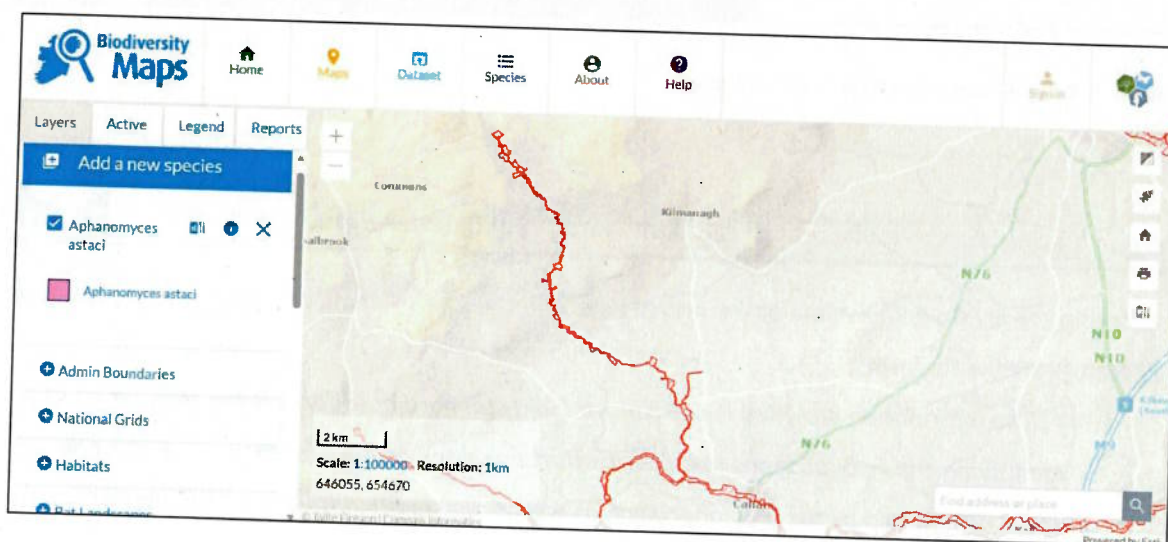


Figure 2: Records of crayfish plague recorded in vicinity of proposed development

The Appropriate Assessment screening has indicated that there will be no spread of the disease owing to a lack of instream works. Notwithstanding the reference to morphological changes to surface watercourses along the proposed grid connection (6.2.1.2.7 of the revised NIS), a query of the Flood Maps online resource indicates that the area of the proposed development is subject to flooding under present day condition. Works in the vicinity of the watercourse do, therefore, have the potential to spread the pathogen responsible for crayfish plague. In the absence of a site-specific Conservation Management Plan for White-clawed Crayfish, and in particular biosecurity measures required to prevent the spread of the pathogen, the potential for the proposed project to undermine the Conservation Objective targets for White-clawed Crayfish cannot be ruled out with any scientific accuracy. This failure of the Appropriate Assessment screening process to identify this potential impact must be seen as a fatal flaw.

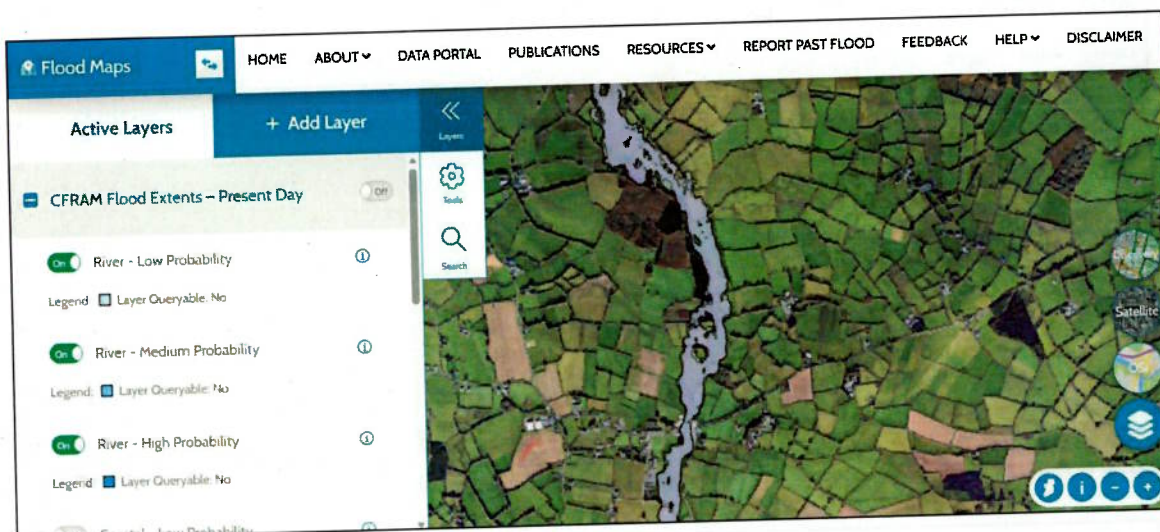


Figure 3: Excerpt from online flood maps resource

4.4 Inadequate consultation of relevant Natura 2000 data forms

According to EU Guidelines⁹ one of the primary steps in the AA screening process is the consultation of Natura 2000 data forms.

"...The information provided in the Natura 2000 standard data form is the starting point for identifying the habitat types and species that are significantly present on the site and that could be affected by the plan or project, as well as any existing pressures and impacts on the site..."

Although this information is readily available online¹⁰, the AA process fails to consult Natura 2000 data forms to consider these threats, pressures and activities (internal and external) with impacts on the sites as comprehensively detailed in the relevant Natura 2000 data-forms. Consultation would have, for example, highlighted the importance of the River Barrow and River Nore SAC with regard to Golden Plover and Lapwing.

⁹ Commission Notice - Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021/C 437/01)

¹⁰ <https://natura2000.eea.europa.eu/>

4.5 Inadequate assessment of risk for bat species as a species integral to the ecological functioning of European sites

Although not a qualifying interest for any adjacent Natura 2000 site, all Irish bat species are listed on Annex IV of the Habitats Directive and must be afforded strict protection wherever they occur. Bats are “keystone” species, integral to the ecological integrity and balance of, in particular, riparian habitats and associated corridors.

The information submitted by the applicant with regard to bats illustrates an incomplete understanding of bat ecology in Ireland as opposed to the UK. In Section 5.1.2.1 of the revised bat assessment, it is stated that

“...Leisler’s bats are classified as a rarer species of a high population vulnerability which have a high collision risk...”

The statement is based on the distribution of Leisler’s Bat throughout the UK. In Ireland, Leisler’s Bat is one of the most commonly encountered species and is virtually ubiquitous throughout the country. Indeed, the 2025¹¹ assessment of this species states

“...Leisler’s Bat (Nyctalus leisleri) has been described as a ‘typically Irish bat’ due to its abundance in Ireland compared to the rest of Europe, where it is uncommon or absent. Its abundance in Ireland has been attributed to the absence of larger competing species, such as the closely related Noctule (N. noctula). On continental Europe, Leisler’s Bat is considered a tree-dwelling species across most of its distribution. The majority of known roosts of this species in Ireland, however, have been found in buildings, although roost records from trees and bat boxes are also known.

Of all the Irish bat species, Leisler’s have the most specific maternity roosting habitat requirements, selecting sites with adjacent woodland and freshwater and avoiding areas of arable land and coniferous woodland. Surveys and modelling of foraging preferences indicate that woodlands, riparian habitats and small amounts of urbanisation are favoured, while peatlands and areas of dense urbanisation are avoided.

Leisler’s bat is widespread across Ireland, but monitoring indicates it is more abundant in the east and south of the country. The most recent estimates for this species suggest a population size of c.100,000-200,000 animals with monitoring over the last 20 years indicating an increasing trend. Two threats/pressures have been identified: threats from wind farms, and the loss of roosts associated with deliberate or accidental exclusion from houses. However, the true impacts of these pressures need to be investigated further...”

¹¹ IBID

Throughout the revised bat assessment, reference is continually made to “*Myotis*” species as a group. In the UK, where there is a greater variety of species, it is very difficult to separate this group of bats based on bioacoustic analysis of calls alone. In Ireland, however, where only three *Myotis* species are known to occur (Daubenton’s Bat, Whiskered Bat and Natterer’s Bat) the species can be determined with scientific precision and accuracy given appropriate quality recording of sufficient length. The grouping of species together is indicative of a lack of appropriate quality recordings of sufficient length, a lack of appropriate knowledge to identify the species or inaccurate knowledge of bats occurring in Ireland relative to the or a combination of these factors. The author of this report is an A-graded technician (BatAbility) in bat bioacoustics.

A further example of the misinterpretation of Irish species distribution is illustrated in Plate 3.2 of the revised bat assessment. The table identifies that Daubenton’s Bat, Brown Long-eared Bat and Lesser Horseshoe Bats are “Rarer” within regard to relative abundance in Ireland, with Natterer’s Bat, Whiskered Bat and Nathusius’ Bat comprising the rarest species. According to the 2025 information

With regard to Lesser Horseshoe Bat

“...Ireland represents the most north-westerly limit of the species’ distribution (in Europe) and here it is largely confined to six west coast counties: Mayo, Galway, Clare, Limerick, Cork and Kerry...”

With regard to Natterer’s Bat

“...It is widely distributed in Ireland, though records are relatively scarce....”

This failure to acknowledge the population vulnerability of bats occurring in Ireland as opposed to parts of the UK is further illustrated in Plate 3.2.

It is stated in 3.6.3 of the revised bat assessment

“..Overall risk assessments were also considered in the context of any potential impacts at the population level, particularly for species identified as having high population vulnerability (Plate 3-2 above)...”

The overall risk assessment is not based on the abundance of these bat species in Ireland and cannot be utilised to accurately inform the Collision Risk posed. The failure to interpret NatureScot guidelines in respect of bat distribution/abundance in Ireland must be seen as a fatal flaw.

5 Summary

The granting of development consent by the Relevant Authority following appropriate assessment (AA) is conditional on the removal of all scientific doubt regarding potential adverse impacts on any Natura 2000 sites concerned, and the Relevant Authority must establish that specific scientific findings exist that permit this removal of doubt¹². The appropriate assessment screening and Natura Impact Statement provided in support of the planning application are wholly inadequate and fatally flawed, containing numerous gaps, emissions and *lacunae*. Presented here are only a selection of these gaps, emissions and *lacunae* owing to time limitations to review all pertinent documentation. Granting of development consent would, therefore, be unlawful¹³.

There are numerous omissions within the AA screening and NIS prepared in association with the proposed development. For example,

- i. Critical to assessing any adverse impacts on the integrity of proximate SPAs is the accuracy and scientific robustness of the Collision Risk Modelling. The applicant has presented Collision Risk Modelling based on inaccurate and subjective viewshed analysis, on which vantage point surveys (using only a single vantage point) were based on subjective information, and cannot be considered to be scientifically robust. The findings of the Collision Risk Modelling as informing the zone of influence and AA screening/NIS must be considered to be fatally flawed and not fit-for-purpose.
- ii. Neither the AA screening, nor the NIS contain any consideration of *ex-situ* impacts on birds commuting/foraging within the flight activity survey area at night. No survey effort of any sort was undertaken to establish if Golden Plover or Lapwing, utilise the development site or *environs* post-sunset for commuting/foraging purposes. Day-time distribution of this species cannot be used to predict post-sunset use of habitats¹⁴. The failure to thoroughly assess *ex-situ* impacts and consider indirect impacts on SPAs outside the identified zone of influence must be considered a fatal flaw in the AA process as relates to the proposed development¹⁵.
- iii. With regard to QIs of potentially impacted Natura 2000 sites, all mobile QIs must be considered potential ecological receptors. Despite the recorded presence of White-clawed Crayfish remains within Otter spraint surveyed on site and the detected presence of crayfish plague, the applicant has deemed that there is no risk of the spread of crayfish plague owing

¹² [2014] IEHC 400, [2018] IESC 31

¹³ C-258/11

¹⁴ Gillings S, Fullar R and Sutherland W (2005). Diurnal studies do not predict nocturnal habitat choice and site selection of European Golden Plover (*Pluvialis apricaria*) and Northern Lapwing (*Vanellus vanellus*). *The Auk*, 122(4), pp 1249 – 1260.

¹⁵ IEHC [2020] 622

to a lack of instream works. No cognisance has been given to the potential impact of flooding of the watercourse or morphological changes to watercourses associated with works for grid connections with regard to the spread of crayfish plague.

- iv. According to EU Guidelines¹⁶ one of the primary steps in the AA screening process is consultation of Natura 2000 data forms for relevant sites. The lack of evidence for significant consultation of the standard Natura 2000 data form for relevant sites must be seen as a fatal flaw in the AA process.
- v. The applicant has prepared a document relating to impact on bat species based on UK guidelines, without taking into account differences in bat distribution and abundance between the UK and Ireland.

¹⁶ Commission Notice - Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021/C 437/01)

6 Conclusion

Despite the nature of the proposed development, it is the opinion of the author of this peer-review report, that the conclusions of the NIS prepared with regard the planning permission application for the Briskalagh Windfarm are fundamentally and critically flawed. The documents as provided cannot sufficiently inform an Appropriate Assessment of the proposed development by the Competent Authority, owing to a combination of factors, including the lack of adequate information to assess the potential impact of the proposed project, alone or in combination with other plans/projects on the environment and/or Natura 2000 network. It is respectfully requested that An Coimisiún Pleanála recognise that there are significant omissions, gaps and *lacunae* occurring within the information as submitted.

It is deemed by the author of this review that the NIS prepared on behalf of Briskalagh Ltd is non-compliant with the Habitats Directive.

Grosvenor Consultancy
Planning & Noise Consultancy Services
Representing Vulnerable Residents & Communities

Review of Proposed Briskalagh Wind Farm
Planning Application – RFI submission to An Comisiún Pleanála

10th December 2025.

Reference: (Case number ABP-322154-25, Planning Authority Reference Number 2560003).

Proposed Briskalagh Renewable Energy Development Co. Kilkenny. Planning Application: **Objection - Operational Wind Turbine Noise & Residential Amenity Impacts.** On behalf of Kilmanagh Community Group. "KBT Responsible Energy".

Introduction.

We draw attention to our previous submission to Kilkenny County Council dated 04 February 2025.

1.1. Grosvenor Consultancy has been commissioned by the Community Group, "*KBT Responsible Energy*" community group to review the Environmental Impact Assessments submitted by the Applicant Briskalagh Ltd (associated with Enerco Energy Ltd), and submit and on their behalf an **objection** to the proposed Briskalagh Renewable Energy Development, which is considered to be large scale industrial Wind Power Plant with associated infrastructure.

1.2. This concerned community group comprises of concerned residents living in the vicinity of the proposed Briskalagh Wind turbine development along with residents in the vicinity of the operational Foyle wind turbines located to the west of the development site.

1.3. This **objection**, is in respect of the significant and material Environmental Impacts to these residents in respect of Operational Wind Turbine Noise, Visual Residential and Recreational Amenity.

1.4. Notably the submission will raise significant material concerns in respect of the Applicant's failure to assess the full spectrum of the Environmental Acoustic Pollution not only from the proposed Briskalagh development, but cumulatively in respect of the operational Foyle wind turbines. We have undertaken a review of the cumulative operational wind turbines and the recently consented Farranrory Wind Farm in County Tipperary located to the south west of Kilmanagh.

1.5 KCC refused the application and an appeal has been made to An Comisiún Pleanála (Case number ABP-322154-25, Planning Authority Reference Number 2560003). MKO, on behalf of Briskalagh Ltd, made a submission to An Comisiún Pleanála (ACP) on 28 October 2025 providing a Response to Further Information Request (RFI) from An Comisiún Pleanála dated 6 October 2025.

1.6. In respect of An Comisiún Pleanála request for 'Further Information' from the Applicant, Briskalagh Ltd (associated with Enerco Energy Ltd), we have reviewed HUSON & ASSOCIATES W Les Huson BSc(Hons) MSc CPhys MInstP MIOA MAAS, subsequent review of the RFI submission from MKO relating to operational noise commissioned by KBT Responsible Energy dated 19th November 2025.

2.

2.1 For ease of reference we have extracted the Further Information operational Wind Turbine Noise Matters raised by ACP and Huson & Associates FI responses below:

REVIEW

The RFI echoes concern over the lack of detail provided in the EIAR that was identified in our peer review. However, our peer review identified additional missing details such as the lack of octave band sound power levels used in the noise model, clarification of whether concave ground profiles had been included, lenient noise limit determinations and the generally optimistic noise modelling.

Issue 1

This and our peer review does not focus on construction activities that is the subject of issue 1.

Issues 2 and 3

The RFI submission (Appendix 6 and Appendix 7) has provided tabled data that addresses the RFI issues 2 and 3 but **has incorrectly tabled the Daytime criteria that requires the correct determination of a low noise environment.**

Assessing a low noise environment

The WEDG 2006 does not specify how to assess a low noise environment.

The test from WEDG 2006 for a low noise environment is not separated into that during the Day or Night.

The determination of whether an area can be described as having a low background sound level (below 30 dB(A)) is best assessed using BS4142 and ISO 1996-1:2016.

It has been incorrectly interpreted in the EIAR that when background sound levels determined from a trend line analysis become greater than 30 dB(A) at higher wind speeds that the lower range of noise limits suggested in WEDG 2006 (35 to 40 dB(A), L90) do not apply and the limit suddenly reverts to 45 dB(A) L90. **This is incorrect.**

The test of a quiet area is made at lower wind speeds (below 5 m/s according to BS4142 where wind-induced noise on a microphone is minimised) and once determined applies at all higher wind speeds where the Background plus 5 dB approach then applies to set target noise limits.

Noise limits

The Daytime noise limits in Appendix 6 and Appendix 7 of the MKO submission **suddenly and incorrectly jump to 45 dB(A) at 7 m/s and above.**

The Daytime noise limits should be based upon Background plus 5 dB, not 45 dB(A).

Furthermore, as explained in our peer review, **the lower target sound level of 35 dB(A) plus 5dB should apply, not 40 dB(A) plus 5 dB.**

The sound levels tabled in Appendix 6 and Appendix 7 of the MKO submission show **non-compliance at 7m/s for H008, H012 and H048, despite the predicted noise levels being overly optimistic and use of the most lenient noise limits.**

With less optimistic noise modelling and more **realistic daytime noise limits many more dwellings are non-compliant.**

Issue 4

Issue 4 appears to have been caused by a **mislabelling of dwellings H270 and H275 on a noise contour map in the EIAR.**

2.2. It is clear from the Huson & Associates Review that the Applicant continues to rely upon over optimistic and non-complaint operational noise limits.

3. Infrasound & Low Frequency Noise (ILFN) and continuing failure of the WEDG 2006 Noise Guidance to protect Residential Amenity.

3.1. Although ACP appears not to have Requested Further Information from the Applicant, we reiterate our conclusions in our Objection dated 4th February 2025.

10.19. It is our firm professional judgement that that this admission by the Applicant, significantly undermines the objectiveness and approach (including methodology) of the submitted Environmental Impact Assessment. Whilst it may be considered this statement is specific to the LVIA, decision makers should not be unduly influenced this statement or by this approach.

It simply should not be the within the gift of any Applicant, to seek to predetermine the outcome of the suitability of any future proposed '*wind energy developments*', within a specific area.

This is particularly relevant in this case, as it is deemed that when the assessed significantly adverse Residential Amenity Impacts and all other material factors are duly considered in the planning balance, as to the benefits of the proposed development, it is our professional judgement that these in combination are not just considered to be significantly adverse but, overwhelmingly adverse.

Final Conclusion.

We repeat, that we consider that consenting the proposed Briskalagh wind farm would create an unacceptable risk of adverse WTN impacts to the local residents and therefore, this unsustainable application should be refused development consent.

3.2. We draw attention to the following evidence:

Mr. Justice Oisin Quinn - High Court Judgement. - Byrne & Moorhead. Extracts:

THE HIGH COURT [2025] IEHC 330 Record No.: 2018/3928P RAYMOND BYRNE AND LORNA MOORHEAD PLAINTIFFS - AND - ABO ENERGY IRELAND LIMITED, ABO ENERGY O&M IRELAND LIMITED AND WEXWIND LIMITED DEFENDANTS.

JUDGMENT of Mr. Justice Oisín Quinn delivered on the 5th day of June 2025.

We have provided the following extracts from the Judgement:

16. Wind turbine noise is a recognised problem from wind farms. Addressing it in a substantial way is seen, according to the expert evidence in this trial, as critical to the future success of wind as a major source of renewable energy. **The evidence adduced at this trial indicates that engineers, acoustic experts and turbine manufacturers are used to engaging with nearby residents and regulatory authorities to assess and address genuine problems.** There are usually many solutions available, short of shutting down the turbines.

3.3. Comment: This Judgement confirms that Wind Turbine Noise is a recognised problem and that there are methods to assess and address genuine problems, however, the reality is, that most complaints are not addressed and was the reason for this High Court Case. Notably the turbines were operating within their consented compliance limits for audible noise.

40. The next feature of importance is the pitch or frequency of the sound. This is measured in Hertz (Hz). WTN from the rotation of the blades of a wind turbine is typically emitted at a mid to high frequency range (500-800 Hz). However, depending on the machine in question and in particular depending on the manufacturing tolerances or operating efficiency of the gearbox, **a wind turbine can also emit low frequency noise. It is now generally recognised that low frequency noise, typically in this scenario between 160 and 200 Hz, is significantly more intrusive to the human ear than mid to high frequency noise.**

29. In 2008 the third named defendant (Wexwind) applied for planning permission for a six turbine wind farm at Gibbet Hill..... The turbines were to have a tower or 'hub' height of 80 meters. They would then consist of a three blade Nordex 90 turbine with a blade length of 45 meters, giving a blade diameter of 90 meters. Five of the turbines were to have a rated energy output of 2.5 megawatts (MW) and one would be limited to 2.3MW giving a total combined output of 14.8 MW which was necessary to comply to the overall Grid Connection Capacity.

87. One of the experts explained how low frequency noise can be more discernible indoors due to the phenomenon of attenuation described above. In other words, there are other masking mid to higher frequency noises from nature that can be heard outside but these noises are less intrusive and are lost indoors, leaving the ear only to detect the mechanical low frequency tonal noise. After a few months accordingly, the plaintiffs moved back to their bedroom at the front of the house. Emphasis's Added.

3.4. Comment: This Wind Turbine Noise Nuisance Case proceedings have been continuing since 2013. Notably, the Moorhead Byrne - High Court case was prosecuted as a Private Nuisance case and not as a Statutory Nuisance case, the award of damages only just covered the Plaintiffs substantial legal costs, as reported below:

Mr Byrne and Ms Moorhead further claim that the nuisance has devalued their property, and thus they had suffered loss and damage. The couple allege they have suffered stress and anxiety allegedly caused by the, permanently unpleasant environment on account of the wind farm, and have suffered sleep disturbances because of the noise emitted.

3.5. The feedback a from reputable source, confirmed:

"Yes, even the case that was won is devastating. They won the case after fighting since 2013. Their case cost 2.3million Euro. Even after being awarded damages and getting an order for the wind developers to pay 95,0000 Euro of their legal fees, it still cost them 93,0000 Euro of their own money... AND the man in this case was a retired barrister.

What ordinary community resident has the knowledge the time or the money to bring a case like this. It's just shocking."

3.6. It is of considerable concern that the separation distances from the Gibbet Hill 3 Wind Turbines is comparable, with that of the proposed Briskalagh Wind turbines.

3.7. However, the comparative size and generation capacity of the Gibbet Hill wind turbines subject to the above High Court Judgement, were 3 Nordex 90 turbines with a hub height of 80 meters and blade tip height of 125m and blade length of 45 meters, giving a blade diameter of 90 meters. Five of the turbines were to have a rated energy output of 2.5 megawatts (MW) and one would be limited to 2.3MW.

These turbines are considerably smaller than the proposed 7 Nordex, Briskalagh Wind Turbines with an overall turbine tip height of 185 metres; a rotor blade diameter of 163 metres; and hub height of 103.5 metres and with a generation capacity between 5-7MW.

3.8. We are receiving a number of reports that there continues to be a systemic failure to protect Residents from adverse impacts from Wind Turbine Noise. **The decision to approve Seskin appeal 320354 is alarming and we are emphatic, that if and when these turbines become operational the adverse impacts on vulnerable residents will be severe.**

3.9 We draw attention to the following:

CEPA Calls on TDs to Support the Wind Turbine Regulation Bill 2025 "It is time to put things right for rural communities."

CEPA — the Communities and Environmental Protection Alliance — today called on TDs to support the Wind Turbine Regulation Bill 2025, warning that after more than a decade of broken promises, Ireland still has no statutory protections for communities living near wind turbines.

The Bill seeks to bring wind-farm development into compliance with Irish case law, ensure clear and enforceable public-health protections, and restore transparency and accountability to a planning system CEPA says is "in crisis." A Bill Designed to Fix Systemic Failures.

CEPA says the Bill would:

Align wind-farm development with recent High Court rulings.

Provide clarity and certainty to developers and planners.

Reduce objections, legal challenges and processing delays.

Restore accountability in a system now routinely bypassing health guidance.

Provide long-overdue statutory protections for public health.

The Alliance emphasised that the Bill is not anti-wind, noting that renewable energy development will continue, but on "a lawful, transparent, and health-protective basis."

Public-Health Concerns Ignored for Over a Decade

Wind-turbine noise was declared a potential public-health issue by the HSE as recently as November 2025. The HSE has stated that turbine size and proximity have changed significantly, and that the outdated 2006 Guidelines require urgent replacement.

CEPA noted that since 2014, successive governments have promised stricter noise limits aligned with WHO standards — promises that remain unfulfilled. A Planning System “No Longer Fit for Purpose” CEPA highlighted repeated instances where:

Local authorities refused wind-farm applications on public-health grounds, only for An Coimisiún Pleanála to approve them (Seskin WF, appeal 320354).

The HSE recommended WHO-based noise standards and elimination of shadow flicker, yet its advice was disregarded (Lackearagh WF, appeal 321285 & Fahybeg WF, appeal 312772)

Developers bypassed the HSE entirely, with no remedy action taken by planning authorities. (Ballykett - Clare Co Co, Kellystown - Louth Co Co, Ballinla - An Coimisiun Pleanala)

“These failures are not minor procedural issues,” CEPA said. “They represent a systemic disregard for public health.”

Government Delays and Broken Commitments

The government has repeatedly postponed publication of new Wind Energy Development Guidelines — now renamed National Planning Statements — despite promising delivery by; yearend 2024, Q1 2025, year end 2025.

CEPA revealed that the required Strategic Environmental Assessment (SEA) for the new guidelines had not even begun, despite public statements suggesting the guidelines were imminent.

Wider Policy Concerns: Cost, Transparency and Oversupply.

The Alliance called out ongoing failures in national energy policy, including:

The refusal to publish annual curtailment and dispatch-down costs, now out of control despite prior warnings (2023) by the ESB, Eirgrid and academics.

Extending subsidies to 15 years for new wind farms despite; evidence of oversupply and market trends in Europe no longer require subsidies. ISIF's €1.5 billion investment in renewable generation since 2021, much of it funding poorly-sited projects that now face community opposition.

Irish households pay one of the highest electricity prices in Europe while supporting the cost of overbuild, grid reinforcements and battery infrastructure.

“This Bill Is a Chance to Put Things Right” CEPA Chairperson (or Spokesperson) said:

“This Bill brings fairness, clarity and public-health protection back into a system that has drifted far off course. It supports renewable energy — but insists that it be delivered lawfully and responsibly.

Rural communities have waited long enough. We are asking TDs to support the Wind Turbine Regulation Bill 2025 and finally put things right.”

Conclusion

We reiterate our objection Conclusion:

We repeat, that we consider that consenting the proposed Briskalagh wind farm would create an unacceptable risk of adverse WTN impacts to the local residents and therefore, this unsustainable application be should be refused development consent.

END.

Con Sheehan
Consulting Land surveyor

11/11/2025

KBT responsible energy
c/o Kilmanagh Community Group,
Kilmanagh,
Co Kilkenny.

I have read over the RFI response of MKO to ABP section 2.7.4.18 titled
Turbine spacing and Site design.

I also have read the submissions you sent me that L Huson and Grosvenor Consultancy submitted to
KCC/ACP.

I find it quite staggering to say the least, that MKO hide behind their "Windpro Software" to such an
extent. This software package allows parameters to be adjusted to fit a desired outcome.

Why do they not use the information provided by the Community expert's submissions to reflect on their
submissions, and then adjust their design using best available information presented to them ?

RFI response of MKO to ABP section 2.7.4.18 titled

Turbine spacing and Site design.

Please refer to my Kilkenny County Council and ACP submissions
and Map 2, attached, as a reminder of this windfarm layout

The only protection we have at present are the WEDG2006 guidelines.

The RFI reply by the developer to ACP has not addressed the following:

The lack of turbine spacing issues pointed out to them.

Why they have deviated so far from the WEDG2006 turbine spacing guidelines of 7 and 3 rotor diameters
apart, particularly in hilly and afforested terrain. (Refer to Map 2)

The mast location issue of being in a very poor location to render it near useless in the West south-west to
Easterly wind directions clockwise. The mast should be southwesterly or westerly of all of the turbines.
(Refer to Map 2)

Their only response is to rely on their "Windpro software" and their design team's collaboration
which in my opinion to date has not worked very well on many existing windfarms.

Yours sincerely,



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HUSON & ASSOCIATES

**Review of Proposed Briskalagh Wind Farm
Planning Application – RFI submission to An
Comisiún Pleanála**

W Les Huson BSc(Hons) MSc CPhys MInstP MloA MAAS

INTRODUCTION

Huson & Associates was commissioned by KBT Responsible Energy to review Chapter 12 'Noise and Vibration' (Report), prepared by MKO, of an EIAR accompanying planning application 2560003 to the Kilkenny County Council from Briskalagh Ltd for a seven-wind turbine wind farm (Briskalagh Wind Farm Application).

A peer review report (Briskalagh Wind Farm Review.docx, 21 January 2025) was prepared that was subsequently submitted to the Kilkenny County Council (KCC) and this document is attached to the end of this report.

KCC refused the application and an appeal has been made to An Comisiún Pleanála (Case number ABP-322154-25, Planning Authority Reference Number 2560003).

MKO, on behalf of Briskalagh Ltd, made a submission to An Comisiún Pleanála on 28 October 2025 providing a Response to Further Information Request (RFI) from An Comisiún Pleanála dated 6 October 2025.

This report details a review of the RFI submission from MKO that relates to operational noise.

This review has been prepared by W Les Huson BSc(Hons) MSc CPhys MInstP MIOA MAAS.

RFI ISSUES

The RFI listed four separate issues under the heading 'Noise'.

- Issue 1 relates to cumulative construction noise detail that was not identified in the EIAR.
- Issue 2 requires noise predictions for the wind farm only (not cumulative) at each NSR in tabular format to be submitted.
- Issue 3 requires tabulated predicted cumulative omni-directional turbine noise levels for each NSR showing the Day and Night criteria and any predicted excesses.
- Issue 4 questions predictions that do not correspond to predicted sound levels shown in a noise contour map in the EIAR for NSL H270 and NSL H275.

REVIEW

The RFI echoes concern over the lack of detail provided in the EIAR that was identified in our peer review. However, our peer review identified additional missing details such as the lack of octave band sound power levels used in the noise model, clarification of whether concave ground profiles had been included, lenient noise limit determinations and the generally optimistic noise modelling.

Issue 1

This and our peer review does not focus on construction activities that is the subject of issue 1.

Issues 2 and 3

The RFI submission (Appendix 6 and Appendix 7) has provided tabled data that addresses the RFI issues 2 and 3 but has incorrectly tabled the Daytime criteria that requires the correct determination of a low noise environment.

HUSON & ASSOCIATES

**Review of Proposed Briskalagh Wind Farm
Planning Application**

W Les Huson BSc(Hons) MSc CPhys MInstP MloA MAAS

Assessing a low noise environment

The WEDG 2006 does not specify how to assess a low noise environment.

The test from WEDG 2006 for a low noise environment is not separated into that during the Day or Night.

The determination of whether an area can be described as having a low background sound level (below 30 dB(A)) is best assessed using BS4142 and ISO 1996-1:2016

It has been incorrectly interpreted in the EIAR that when background sound levels determined from a trend line analysis become greater than 30 dB(A) at higher wind speeds that the lower range of noise limits suggested in WEDG 2006 (35 to 40 dB(A), L90) do not apply and the limit suddenly reverts to 45 dB(A) L90. This is incorrect.

The test of a quiet area is made at lower wind speeds (below 5 m/s according to BS4142 where wind-induced noise on a microphone is minimised) and once determined applies at all higher wind speeds where the Background plus 5 dB approach then applies to set target noise limits.

Noise limits

The Daytime noise limits in Appendix 6 and Appendix 7 of the MKO submission suddenly and incorrectly jump to 45 dB(A) at 7 m/s and above.

The Daytime noise limits should be based upon Background plus 5 dB, not 45 dB(A).

Furthermore, as explained in our peer review, the lower target sound level of 35 dB(A) plus 5 dB should apply, not 40 dB(A) plus 5 dB.

The sound levels tabled in Appendix 6 and Appendix 7 of the MKO submission show non-compliance at 7m/s for H008, H012 and H048, despite the predicted noise levels being overly optimistic and use of the most lenient noise limits.

With less optimistic noise modelling and more realistic daytime noise limits many more dwellings are non-compliant.

Issue 4

Issue 4 appears to have been caused by a mislabelling of dwellings H270 and H275 on a noise contour map in the EIAR.

There follows the peer review report prepared in January 2025 that expands upon matters raised in this review:

INTRODUCTION

Huson & Associates has been commissioned by KBT Responsible Energy to review Chapter 12 'Noise and Vibration' (Report), prepared by MKO, of an EIAR accompanying planning application 2560003 to the Kilkenny County Council from Briskalagh Ltd for a seven wind turbine wind farm (Briskalagh Wind Farm Application).

This review has been prepared by W Les Huson BSc(Hons) MSc CPhys MInstP MIOA MAAS (brief CV in Appendix A).

Referenced papers can be made available on request if required.

SUMMARY

Kilkenny County Council (KCC) would be justified in refusing the Briskalagh Wind Farm Application. There is a lack of detail provided in the Report and the assessment has been made based upon optimistic noise targets that are currently under review. The noise model used has deficiencies that have not been addressed, yet, despite the optimistic parameters used in the noise model and higher chosen noise limits from the range suggested in WEDG 2006 there remain predicted non-compliance for some dwellings.

The Report relies heavily on ETSU-R-97 and the IoA Good Practice Guide, 2013 when these guidelines are currently under review.

I recommend that current best practice in assessing wind farm noise is reflected in target noise limits set in the Australian States of New South Wales, Tasmania and Germany.

The requirement from WEDG 2006 that '*that there is no significant increase in ambient noise levels at any nearby noise sensitive locations*' has not been addressed in the Report. Ambient sound levels are shown to be well below 17 dBA in wind speeds up to 6 m/s (10m AGL) at some dwellings with predicted sound levels more than 40dBA for several dwellings.

The soundscape in the area will change dramatically if the wind farm is approved.

The Report needs clarification of the sound power levels used in the noise models.

The layout of the seven wind turbines is such that excessive amplitude modulation will arise.

Low frequency noise impact has not been addressed.

PLANNING GUIDANCE ON NOISE FROM WIND FARMS

The Irish Government Department of Environment Heritage and Local Government document '*Wind Energy Development Guidelines, 2006*' (WEDG 2006) list the current guidelines to set noise limits for wind energy developments. However, WEDG 2006 is considered to require updating and a DRAFT WEDG 2019 has been prepared but not formally adopted as it remains under review. The Report has adopted the principles of WEDG 2006 but has added interpretations contained in UK wind farm noise guidance using ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms' with further guidance from the Institute of Acoustics in 2013; 'A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise' (IoA, GPG). It should be recognised that the scope of the GPG was not to examine noise limits described in ETSU-R-97. The GPG states that "The approval of this

guide by the IoA Council should not be seen as an endorsement of the noise limits within the ETSU-R-97 document since the setting of these limits is a policy matter for Government.”

Furthermore, the GPG is only applicable for those involved in the assessment and rating of wind turbine noise using ETSU-R-97.

The limits proposed in the WEDG 2006 broadly align with the UK guidance found in ETSU-R-97 that reflects WHO guidance in 1997. However, noise limits to protect sleep were reduced by 5 dB in subsequent WHO guidance in 1999.

WEDG 2006 does not require that ETSU-R-97 be used to assess wind turbine noise.

WEDG 2006 states “*Good acoustical design and carefully considered siting of turbines is essential to ensure that there is no significant increase in ambient noise levels at any nearby noise sensitive locations.*” WEDG 2006 has been drafted to balance the objectives of providing renewable power with acoustic amenity and for quiet areas states; “*in low noise environments where background noise is less than 30 dB(A), it is recommended that the daytime level of the LA90, 10min of the wind energy development noise be limited to an absolute level within the range of 35-40 dB(A).*”

The Report, section 12.4.2, has generally chosen to set lenient target noise limits in the daytime at 40 dB(A) L90, where background noise levels were <30 dB, and 45 dB(A) L90 or background plus 5 dB, whichever is the greater, where background noise levels were >30 dB.

The night time noise limit has been set in the Report at 43 dB(A) L90 or background plus 5 dB, whichever is the greater.

The justification for proposing these operational noise limits is based on ‘Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)’ and several planning approvals in recent years. However, the appropriate document to refer to is ‘Guidance Note for Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3)’ that provides compliance limits in the daytime between 35 dBA and 40 dBA for quiet daytime environments of less than 30 dBA.

NG3 references ‘DOEHLG wind farm planning guidelines’ for the daytime compliance limit.

The proposed daytime compliance noise limit in the Report has been chosen to be 5 dB above that which could be applied.

I do not believe that permit conditions for other wind farms have any relevance to this development application.

With the suggested noise limits in the Report there is a predicted non-compliance for H008, H012, H048, and H260 during the day. The Report suggests that noise reduction measures can be applied to reduce sound levels at H008, H012 and H048 but suggests that H260 is governed by noise from the Foyle Wind Farm. However, the margins of non-compliance are based upon optimistic noise modelling and the highest allowable daytime compliance limit of 40 dBA, rather than 35 dBA.

I consider that target noise limits proposed in the Report during the day and at night are set too high. The background sound level charts in the Report show that the area is a low noise

environment and current WEDG 2006 guidance would set the noise level target at 35 dB or background plus 5dB. EU required Noise Maps (<https://gis.epa.ie/EPAMaps/>) show that the area is unaffected by any industry, aircraft, rail or roads.

Night time sound levels at H009, H013, H049 and H060, for example, show that the sound measurement equipment regularly recorded sound levels at the noise floor of the instruments. Sound monitoring equipment is classified under IEC61672. The sound level meters used have a noise floor of typically 17 dBA. However, the sound level range over which the instrument is linear and compliant with Class 1 generally is some 6 dB higher. Thus, sound levels shown in the background charts between 23 dBA and 17 dBA are compressed. This means that real background sound levels in the area are often much lower than 17 dBA. This phenomenon is explained in Huson (2015)¹

The night time noise targets in ETSU-R-97 are based upon the WHO 1980 guidance. The WHO 1999 Community Noise Guidelines states: *“Sleep disturbance is the critical effect in bedrooms, in dwellings and preschools. Recommended guideline values inside bedrooms are 30 dB LAeq for steady-state continuous noise, and for a noise event 45 dB LMax, preferably even lower, about 40 dB LMax. Lower sound pressure levels may be annoying depending on the nature of the noise source. The maximum level should be measured with the instrument set at “fast”.*

At nighttime outdoors, sound pressure levels should not exceed 45 dB LAeq, so that people may sleep with bedroom windows open. This value has been obtained by assuming that the reduction from outside to inside with the window open is 15 dB; note that the actual reduction may be less in some cases, maybe only 5-7 dB, which then would mean that the sound pressure level outdoors needs to be kept at or below 35-37 dB LAeq.”

Outdoor noise target limits are based on the outdoor to inside attenuation values that are frequency dependent with outdoor sound pressure levels for some properties needing to be kept at or below 35 dBA Leq.

The ETSU-R-97 and WEDG 2006 night time target noise level of 43 dBA L90 should be reduced by at least 5 dB.

With this changed target noise limit many more NSR locations will become non-compliant at night. For example, a night time target set at 38 dBA, Leq would show non-compliance with the cumulative sound levels predicted in the Report at thirty-nine NSRs.

The WHO sleep protection noise target is not based upon wind farm noise and recent recommendations from the WHO recognise that wind farm noise has special audible characteristics that can be more disturbing than similar sound levels set for other noise sources.

The Northern Ireland Assembly’s Committee for the Environment produced a ‘Report on the Committee’s Inquiry into Wind Energy’ in 2015.

https://www.niassembly.gov.uk/globalassets/documents/official-reports/environment/2013-2014/140605_inquiryintowindenergycharteredinstituteofenvironmentalhealth.pdf

¹ Huson, W. Les. “Constraints imposed by and limitations of IEC61672 for the measurement of wind farm sound emissions” 6th International Conference on Wind Turbine Noise, Glasgow 20-23 April 2015

This inquiry recommended that the Department should review the use of the ETSU-97 guidelines on an urgent basis, with a view to adopting more modern and robust guidance for measurement of wind turbine noise, with reference to current guidelines from the World Health Organisation.

Reasons for recommendation that ETSU-R-97 is updated

Modern wind turbines are considerably larger now than those that were in place in 1997, this can result in more lower frequency noise and an increased risk of AM due to high level wind fluctuations.

ETSU - R - 97 The Assessment and Rating of Noise from Wind Farms' is influenced by BS4142 Method for rating industrial noise affecting mixed residential and industrial areas.

BS4142 is currently being updated. The draft revised BS4142 includes further emphasis on the annoyance from tones and fluctuations. The draft proposes that when both characteristics are present the two should individually be taken into account.

The WHO guidance for indoor noise levels at night was 35dB when ETSU-R-97 was published in 1997, it has now been revised to 30dB

ETSU-R-97 advises using the LA90,10min noise index for both turbine and background noise.

Most other relevant standards use LAeq for source noise. LA90 was adopted by ETSU-R-97 as it was assumed at the time of drafting that wind turbine noise was relatively steady and characterless. Evidence and knowledge since 1997 has highlighted that certain wind farms/single wind turbines produce AM and hence the original assumption within ETSU-R-97 that wind turbine noise was relatively steady and characterless no longer holds true. ETSU-R-97 needs to be updated to take account of much greater understanding of the acoustics of large wind turbines and the annoyance/health effects of wind turbine noise.

In particular, consideration of the following content of ETSU-R-97 is recommended:

- The statement that it is not necessary to use a margin above background approach in low noise environments
- The use of LA90 for both the background noise and the wind farm noise
- Night time limit of 43dBA bearing in mind the revised WHO guidelines
- The assumption that background noise rises with increasing wind speed
- The consideration of fluctuations and tones.

BS4142 has now been revised with the latest edition dated 2019 that also has an accompanying Methods Implementation Document.

The UK Department for Energy Security and Net Zero (DESNZ) issued a tender in May 2024 on the following subject: **Update to ETSU-R-97 Onshore Wind Noise Guidance**
Sourcing Reference Number: PS24055

Overview of Scope of Services (PS24055)

Onshore wind is a mature, efficient and cheap technology, with over 15GW of installed capacity in the UK today. To achieve a low-cost net zero system in the future, we will require a sustained increase in locally supported onshore wind to 2030 and beyond, alongside other renewables such as offshore wind and solar.

The Department of Energy Security and Net Zero (DESNZ) owns policy and guidance in relation to noise from onshore wind turbines. The current guidance for the assessment of turbine noise emissions is 'The Assessment and Rating of Noise From Wind Farms', otherwise known as ETSU-R-97, or ETSU, which dates back to 1996. ETSU uses contemporary evidence of turbine noise emissions to provide noise thresholds, split between daytime and night-time limits, above which noise from proposed wind turbines would be considered too loud. These thresholds are not absolute: ETSU generally sets these thresholds at a decibel level relative to background noise so turbine noise impacts are not considered in isolation.

ETSU is regularly used by Local Authorities across the UK for appraising planning applications for onshore wind developments. ETSU is technical guidance, and has no statutory or legal foundation, though it is referenced in several planning policy documents. Planning applications for an onshore wind farm must take the impact of noise into account.

Due to advances in both sound measurement and turbine technology since 1996, in 2021 Government commissioned WSP, an external consultancy, to produce a scoping review into whether the current ETSU guidance could, or should, be updated. The report, published in 2023, recommended that the guidance would benefit from specific, targeted updates. The report also concluded that there are significant gaps in the knowledge base and more research would be required should more substantial revisions to the guidance be desired.

Government considered the recommendations in detail and in November 2023 convened a steering group comprising of policy officials and technical experts from across Government and the Devolved Administrations. The steering group agreed to proceed with undertaking specific, targeted updates to ETSU guidance in the short-term. DESNZ are therefore **seeking an organisation to undertake an update to the ETSU guidance according with the recommendations made in the WSP report.**

The successful bidder of this contract will produce two documents. An informal paper of secondary research to be shared internally with Government, and updated ETSU guidance to be published on gov.uk. The expectations of the contractor are:

- The Supplier will work closely with the Government throughout the duration of the contract to iterate the final product. The updated guidance will be published by, and the intellectual property of, the Government.
- The Supplier should have technical expertise and knowledge of acoustics and noise, specifically in air-borne noise, that can be applied to this contract to ensure quality of outputs when updating technical noise guidance.
- The Supplier should have expertise in evaluating research in a highly technical area, and drafting guidance documents to a high standard.

- The Supplier will peer review the guidance thoroughly and have access to a group of relevant experts to review and iterate the guidance.

This work will be conducted between June 2024 and March 2025. The final product should be ready for publication by early March 2025.

Noise target limits are under review in the UK and the current guidance used in the Report is outdated and subject to change within the next 12 months, but those changes are currently unknown.

Current best practice in wind farm noise guidance is provided in the Australian States of New South Wales and Tasmania where night time target noise limits are set at 35 dBA Leq or background plus 5 dB with additional penalties for special audible characteristics such as tonality, impulsiveness and amplitude modulation. Germany also has a night time noise level limit of 35 dBA Leq. Wind farms have been approved under these target noise limits and a good balance has been struck to provide renewable energy and protect the nearby population.

It is worth noting that in a recent Supreme Court nuisance noise case (Uren v Bald Hills Wind Farm S ECI 2020 00471) 25 March 2022 in Australia Justice Richard observed:

“The generation of renewable energy by the wind farm is a socially valuable activity, and it is in the public interest for it to continue. However, there is not a binary choice to be made between the generation of clean energy by the wind farm, and a good night’s sleep for its neighbours. It should be possible to achieve both.”

Justice Richards also observed that because noise from a wind farm is intermittent a test against a night time noise limit for 10% of any individual night is an appropriate way to protect sleep, rather than average many nights of exposure.

CUMULATIVE NOISE

The Report has produced noise model outputs for the cumulative effects of other nearby wind farms using directivity guidance described in the IoA GPG. This wind farm is located in rolling countryside and it is to be expected that local wind directions may not be uniform across the areas containing the nearest wind farms considered. A CFD wind analysis, that is commonly available to wind farm developers, would assist in showing if the assumptions made in the Report are valid for the directivity effects applied to the noise models.

A CFD wind analysis would also show any site effects that the proposed wind turbine positions might experience. Site effects can significantly alter the sound power of a wind turbine that is generally specified for flat terrain with minimal inflow turbulence.

Despite the wind turbine foundations being located below some of the surrounding NSRs the hubs of the wind turbines will be seen from all the surrounding nearby dwellings.

Manufacturer data was used in the cumulative noise model rather than actual data that could be obtained from compliance testing. It is not known how well the manufacturer’s sound power data compares to the installed situation that can be influenced by site effects.

NOISE MODELS

The Report has used the ‘full’ ISO 9613-2 noise model, implemented in DGMR iNoise Enterprise (Version 2023.02), that includes ground absorption. The Report does not state if a correction for propagation ‘across a valley’ due to ground concave profile effects has been considered, as required in the GPG.

ISO 9613-2 prediction results are sensitive to the value of ground absorption/attenuation effect, G , that can range between 0 and 1. $G=0$ indicates no ground absorption and $G=1$ represents full ground absorption of sound. A paper by Brittain and Charalampous² shows the inadequacy of the ground effect calculations in ISO 9613-2 for a source height of 100m, which conveniently approximates the hub height of the proposed candidate wind turbines in the Report.

The Report has used a value of $G=0.5$ in the ISO 9613-2 noise model for all the ground between the wind turbines and all noise sensitive receivers with an artificial receiver height of 4m (in practice all sound level surveys are completed at a height of approximately 1.5m). The peculiarities of the ground effect calculation in ISO 9613-2 show that predicted sound levels for a receiver height of 4m there is a 2 dB difference in predicted sound levels dependant on whether $G=0$ or $G=0.5$ is used. $G=0$ produces typically 2 dB higher predicted sound levels than when $G=0.5$ is used.

It is best practice to err on the side of conservatism and use $G=0$ when using ISO 9613-2. This point was made by Eric Sloth, one of the authors of the JOULE³ study in his presentation (Appendix B) where he advises that if ISO 9613-2 is to be used for wind farm noise predictions, then $G=0$ should be used with additional corrections to account for site effects such as inflow turbulence. The Report has not accounted for any site effects that can increase wind turbine sound power levels. Furthermore, the Report *assumes* that there will be no special audible characteristics from whatever wind turbine is chosen to be used in the wind farm.

With the slim margins of compliance and the need to provide noise reduction of the candidate wind turbines for some NSRs, any penalty for special audible characteristics will render the project unviable.

The ISO 9613-2 noise model has a stated limitation for its calculations in conditions where the source to receiver average height does not exceed 30m and when average propagation enhancement from vector wind does not exceed 1m/s to 5m/s measured at a height above ground between 3m and 11m. ISO 9613-2 for this wind farm application is being applied well outside of its intended use.

The Report has not commented on the uncertainty associated with the use of ISO 9613-2. The preferred IEA method recommended in the JOULE report suggests a standard deviation uncertainty of 0.004dB/m. For a propagation distance of 1000m this translates to +/-4 dB (+/-

² Brittain, F., Charalampous, P: ‘Assessing Accuracy of ISO 9613-2 for Calculating Ground Effects of Stack Height and Distance Using Olive Tree Labs OTL Suite’. NOISE-CON 2016, Providence, Rhode Island, 13-15 June, 2016

³ Bass, J., Sloth, E., Bullmore ‘Development of a Wind Farm Noise Prediction Model,’ JOULE project JOR3-CT95-0051, 1998

one standard deviation). ISO 9613-2 predictions are estimated in Table 5 of the standard to have an uncertainty of ± 3 dB at 1000m if all inputs are accurate but notes that:

“The estimates of accuracy in table 5 are for downwind conditions averaged over independent situations (as specified in clause 5). They should not necessarily be expected to agree with the variation in measurements made at a given site on a given day. The latter can be expected to be considerably larger than the values in table 5.”

The JOULE study also noted the following:

“As a result of the measurements just described it has been concluded that:

- Noise levels at all distances from the source do vary, even if the source of sound has a constant power level.
- The measured variation in noise levels increases with increasing distance from the source.
- Based on typical wind speed ranges of between 0ms⁻¹ and 10ms⁻¹ encountered during the experimental measurements, the one standard deviation spread of noise levels either side the mean level was found to increase at a rate of approximately 0.004dB(A) per meter increase in the source to receiver separation distance.”

The fact that wind farm sound levels vary with increasing distance (assuming all wind turbines emit a constant sound level) suggests that the use of the L90 statistic underestimates the true impact of noise from a wind farm. Whilst it is advantageous to use an L90 statistic to reduce extraneous noise effects on a measurement it unfortunately underestimates the true higher levels of noise caused by the wind farm. This underestimation can be compensated by the standard deviation of 0.004dB measured in the JOULE study.

A more realistic estimation of the higher sound levels from a wind farm is the predicted sound level using the simple IEA model (cut down ISO 9613-2 with corrections) plus the addition of one standard deviation uncertainty. For a dwelling 1000m away the prediction should be the IEA model output plus 4dB (0.004dB/m at 1000m).

WIND TURBINE LAYOUT

It is customary in the design of a wind farm to take account of the distances between wind turbines to minimise noise emissions and to maximise efficiency. An outline of such design considerations can be found in ‘NSW Wind Energy Handbook 2002’: Sustainable Energy Development Authority of NSW (SEDA).

From page 53 of the SEDA document:

“A wind-farm layout must take into account that turbines have substantial ‘wakes’, which interfere with each other depending on wind direction and spacing. The general rule of thumb for spacing (the ‘5r-8r rule’) is five times rotor diameter abreast and eight times rotor diameter downwind.”

Appendix B of the IEC61400-11 standard indicates that at high wind speeds, wind turbulence becomes the primary source of sound. It suggests that these effects should be minimized during testing and optionally reported.

A general outline of site layout considerations has been provided by Suzlon Energy. A summary of site effects from Suzlon is provided in Appendix C that suggests the *minimum* wind turbine separations to be 3r-5r.

In the current layout of the Briskalagh wind farm, the distance between the wind turbine towers ranges from 381m to 657m.

The candidate wind turbines have rotor diameters, denoted as 'r', of 163 m. The shortest spacing between the turbines is only 2.3 times the rotor diameter (2.3r) and the longest spacing is 4r, which is significantly less than the recommended spacing 8r to reduce wake turbulence effects.

An increase in wake turbulence from the wind turbines can lead to higher noise emissions and lower efficiency of the wind farm. This spacing is also less than the minimum 5r recommended by SEDA.

The Report has not considered the potential increase in sound power caused by wake effects.

WIND TURBINE SOUND POWER LEVEL

The Report suggests that the candidate Nordex N163 was used as it represents the sound power levels typical of the candidate wind turbines under consideration. However, the sound power data for the Nordex N163 is dependent on the particular turbine within the N163 group that Nordex call N163/5x or N163/6x. Sound power of these wind turbines is related to the electrical power generated with higher sound power for higher production capacity. The Nordex website (<https://www.nordex-online.com/en/2022/05/nordex-se-nordex-group-installs-first-n163-6-x-turbine/>) states that the sound power level for the N163/5x is 106.4 dBA at 5.5MW.

Another Nordex link (<https://www.nordex-online.com/en/product/n163-6-x/>) states a sound power of 105.5 dBA for 6.5MW. This link (<https://www.nordex-online.com/en/2022/05/nordex-se-nordex-group-installs-first-n163-6-x-turbine/>) states that the sound power of the N163/6x is 106.4 dBA. These values represent manufacturer data without any addition for uncertainty.

The Report has provided insufficient details of the particular Nordex N163 wind turbine that it has used.

The Report in Table 12.10 lists a sound power level of 106.6 dBA at a wind speed of 7 m/s. However, Appendix 12.4 Table 1 lists the sound power level at 7 m/s to be 106 dBA.

It is not clear if the +2 dB for uncertainty has been added to the sound power levels listed in Table 12.10. If it has been applied then the sound power level in the table is below that which Nordex make available on their website.

I have completed an ISO9613-2 analysis to check the prediction of noise at H013 that is listed to be 41 dBA in Appendix 12.7 at 7 m/s wind speed. This NSR will be unaffected by noise from other wind farms. Using the same input parameters described in Appendix 12.5 and Appendix 12.4 at 7 m/s I calculated a predicted sound level of 40.1 dBA. If account is made for +2 dB uncertainty, then the predicted sound level would become 42.1 dBA, 1.1 dB higher than the Report predicts.

Table 1 sorts the predicted cumulative sound levels from the Report (Appendix 12.7) in ascending order of sound level at a wind speed of 6 m/s. Involved NSRs are highlighted.

Table 1

	Cumulative		
	Predicted dBA	Amount	Amount
	6m/s @10m	>35dBA	>40dBA
H009	43.2	8.2	3.2
H001	42.8	7.8	2.8
H002	41.9	6.9	1.9
H004	41.4	6.4	1.4
H012	40.6	5.6	0.6
H260	40.6	5.6	0.6
H008	40.4	5.4	0.4
H048	40.2	5.2	0.2
H005	40	5	
H075	39.9	4.9	
H013	39.8	4.8	
H060	39.8	4.8	
H061	39.7	4.7	
H266	39.7	4.7	
H035	39.6	4.6	
H038	39.6	4.6	
H056	39.6	4.6	
H089	39.6	4.6	
H046	39.5	4.5	
H106	39.5	4.5	
H030	39.4	4.4	
H043	39.4	4.4	
H054	39.4	4.4	
H062	39.3	4.3	
H044	39.2	4.2	
H083	39.2	4.2	

H258	39.2	4.2
H007	39	4
H080	39	4
H045	38.9	3.9
H037	38.7	3.7
H053	38.6	3.6
H126	38.6	3.6
H034	38.5	3.5
H086	38.5	3.5
H049	38.4	3.4
H064	38.4	3.4
H124	38.2	3.2
H014	38.1	3.1
H135	38.1	3.1
H073	38	3
H127	38	3
H108	37.9	2.9
H109	37.9	2.9
H068	37.8	2.8
H079	37.8	2.8
H093	37.7	2.7
H069	37.6	2.6
H104	37.5	2.5
H261	37.5	2.5
H058	37.2	2.2
H067	37.2	2.2
H107	37	2
H140	37	2
H208	36.9	1.9
H264	36.9	1.9

H051	36.8	1.8
H117	36.8	1.8
H196	36.8	1.8
H206	36.8	1.8
H230	36.7	1.7
H256	36.7	1.7
H265	36.5	1.5
H085	36.4	1.4
H110	36.4	1.4
H136	36.4	1.4
H165	36.4	1.4
H116	36.3	1.3
H138	36.3	1.3
H267	36.3	1.3
H003	36.2	1.2
H119	36.2	1.2
H161	36.2	1.2
H272	36.2	1.2
H131	36.1	1.1
H156	36.1	1.1
H055	36	1
H137	36	1
H257	35.9	0.9
H065	35.8	0.8
H121	35.7	0.7
H154	35.6	0.6
H263	35.6	0.6
H130	35.5	0.5
H036	35.4	0.4
H132	35.4	0.4

H178	35.3	0.3
H033	35.2	0.2
H042	35.2	0.2
H153	35.2	0.2
H031	35.1	0.1

The daytime background noise level adopted in the Report for all NSRs at which background noise monitoring was not completed is 28.7 dBA at a 10m high wind speed of 6m/s.

If the predicted sound levels are 1.1 dB higher then an additional twenty-one (21) dwellings would be deemed non-compliant with the upper noise limit of 40 dBA suggested in the Report.

If the lower recommended sound level limit of 35 dBA was applied from current guidelines (NG3), and the predictions were assumed to be correct, then none of the NSRs would comply.

The Kilkenny County Council should only consider planning applications that have complete sound power specifications for candidate wind turbines. The Report is deficient in this regard and inconsistent in the sound power levels presented.

The ISO9613-2 predictions appear to be too low.

AMPLITUDE MODULATION (AM)

The Report discusses AM at length in section 12.3.2.2 but reaches no conclusion on a penalty scheme to account for this special audible characteristic. However, NG3 describes AM under the heading of 'Temporal Characteristics' and states for AM that:

“The mechanism behind this is not clearly understood. However, features which are thought to enhance this effect are:

- ☐ *close spacing of turbines in linear rows*
- ☐ *tower height to rotor diameter ratio less than approximately 0.75*
- ☐ *stable atmospheric conditions*
- ☐ *topography leading to different wind directions being seen by the blades at different points in their rotation”*

Note that the tower height (103.5m) to rotor diameter (163m) ratio is 0.635.

It can safely be assumed that AM will be an observable effect at NSLs because the turbine spacing is too close, the tower height to rotor diameter ratio is 0.635 (less than 0.75), and stable atmospheric conditions will occur from time to time.

Kilkenny County Council should consider AM to be likely for this wind farm configuration that would warrant an additional penalty to predicted sound levels.

ETSU-R-97 incorrectly addressed amplitude modulation and made a sweeping assumption that such a characteristic was rare in modern wind farms. This is not the case and it is now

recognised that amplitude modulation is the most significantly intrusive sound characteristic of wind turbines.

The GPG refers in section 7.2 to ongoing research. Since the publication of the GPG in 2013 there has been much ongoing research and amplitude modulation is known to be a significant concern for residents near modern wind farms.

The following figures illustrate A-weighted sound levels over a 10-minute period that were recorded at a rate of ten samples per second 800 m from two MM82 2MW wind turbines outside a dwelling.

The measurement was taken when the wind turbines were operating in the early hours of the morning when there was no extraneous insect, bird or animal sound but there was sound from wind in trees and foliage. This was confirmed by listening to the audio recordings taken at the same time.

Figure 1 shows the 100ms 'short' LAeq values and a single LA95,10min level for the data. LA95 was calculated for this figure because the limit for this wind farm is in terms of LA95. However, the LA90 would only be slightly higher at approximately 38 dBA.

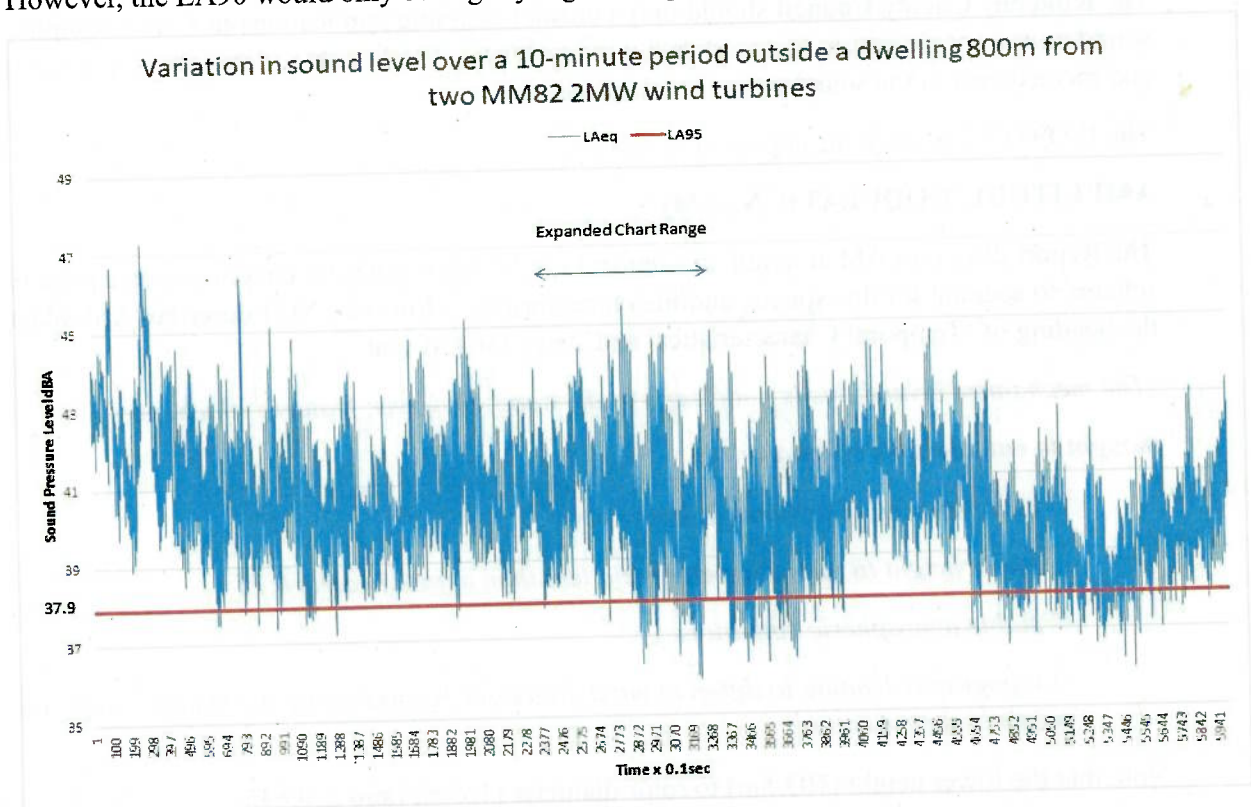


Figure 1

An expanded range from Figure 1 is shown in Figure 2 to provide more detail.

The repetitive variation in sound level is caused by sound from the two wind turbines as the blades rotate.

Sound caused by wind in trees and foliage is random, not repetitive as shown in these two charts.

Each peak and trough repetition can be linked to each time a blade passes through a part of the swept area.

As each wind turbine operates independently of others the small difference in rotation speed between these two wind turbines is causing the peak and trough repetitions to combine yielding a trace that can appear to synchronise at blade passing repetition to the time when the blades are out of synchronisation yielding an apparent doubling of the blade passing repetition.

For a wind farm containing many wind turbines the peak and trough level and repetitions vary randomly.

However, when synchronised the sound levels add together to produce an overall higher sound level compared to when the individual turbine blades lose synchronisation.

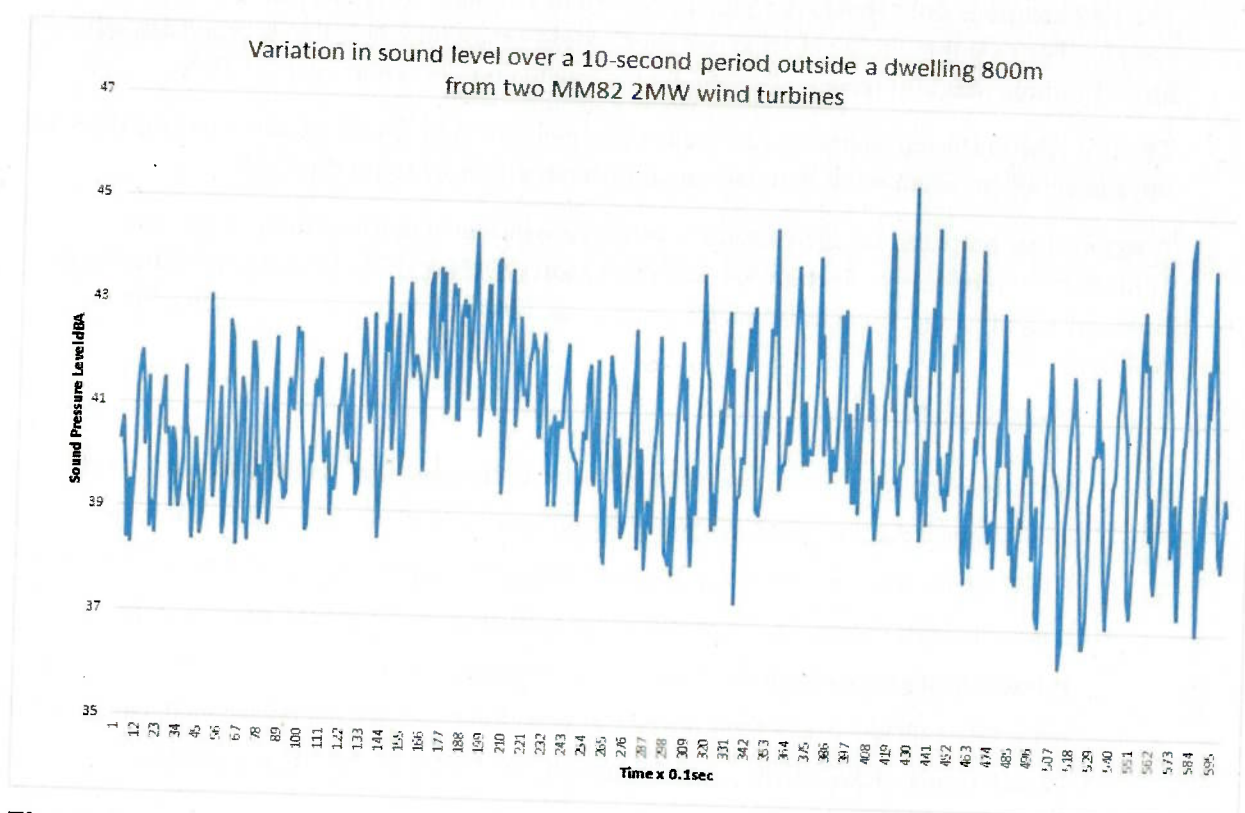


Figure 2

Figure 2 clearly shows the interacting effect for two wind turbines where the first part of the 10-second chart shows the turbines to be out of synchronisation with a generally lower sound level variation peak to trough compared to later in the chart where the turbine blade rotations synchronise causing higher overall peak to trough sound level changes.

An unfortunate disadvantage in using the L90 statistic is that the character of sound level changes during any 10-minute measurement are lost and sound level variations are greatly underestimated.

A common observation of unusual sound level change occurs when 'whump' or 'thump' is described by observers.

Whump and thump are thought to originate from the aerodynamic sound of wind turbine blades when they encounter wind turbulence or are incorrectly adjusted for the incoming wind that causes a blade to stall temporarily. Placing wind turbines too close to each other will increase wind turbulence and increase AM and the instances of ‘whump and thump’ sounds..

The occasional whump and thump sounds are much louder than normal wind turbine sounds and the fact that they would not occur for more than 9 minutes in any 10-minute recording means that the LA90 centile would not identify such events.

Sound levels vary throughout the measurement period in the 10-minute duration of the chart above (Figure 1) ranging from a maximum level of just over 47 dBA to a minimum level of about 36 dBA. From the 6000 sound level samples the single statistical L95 parameter obtained from this chart is 37.9 dBA, shown as a red line across the chart.

The L90 centile is only sensitive to the lowest 10 % of sound levels within any 10-minute sample. For example, in the chart above there could be sound levels that reached 100 dBA for up to 1 minute that will have no bearing on the calculated L90 value of 37.9 dBA.

The IoA AM Preferred Method fails to correctly evaluate AM from just two wind turbines and fares even worse when more than two wind turbines combine to produce AM.

A report⁴ was prepared for DEFRA that outlines a wind farm noise statutory nuisance complaint methodology. Section 5.4.5 of this report (NAN-R-277) explains the difference between a centile statistical noise metric such as an L90 and the energy averaging Leq as follows:

“5.4.5 Noise Indices

By convention wind farm noise in the UK is measured using the LA90,10 minute noise index, as it is argued that this index minimises the influence of extraneous noise. However, excepting ETSU –R-97, there are few if any standards that set noise limits using this index. Additionally, it is argued that because the LA90,10min index focuses on the quietest periods in the measurement period it is relatively insensitive to rapid fluctuations in noise level where the noise varies rapidly over a short period e.g. as with aerodynamic/amplitude modulation, and the impact of such characteristics can be underestimated using the LA90,t noise index.

However, elsewhere in the world the LAeq,t index is preferred for wind turbine noise. Use of the LAeq,t or derivatives for environmental noise measurement is recommended by international standards and bodies e.g. ISO 1996 and the WHO, and British Standards such as BS 4142, BS 7445 and BS 8223. Additionally, there are a range of standards and guidance that offer guideline and recommended values of LAeq,T noise levels against which to weigh any measurement. The energy averaging nature of this index means it tends to be biased towards the highest noise levels that occur during a measurement. The figure below shows an indicative

⁴ NANR277 “Wind farm noise statutory nuisance complaint methodology DEFRA (2011)

sound pressure level trace of a time varying noise signal (SPL) and the approximate LAeq,t and LA90,t values.

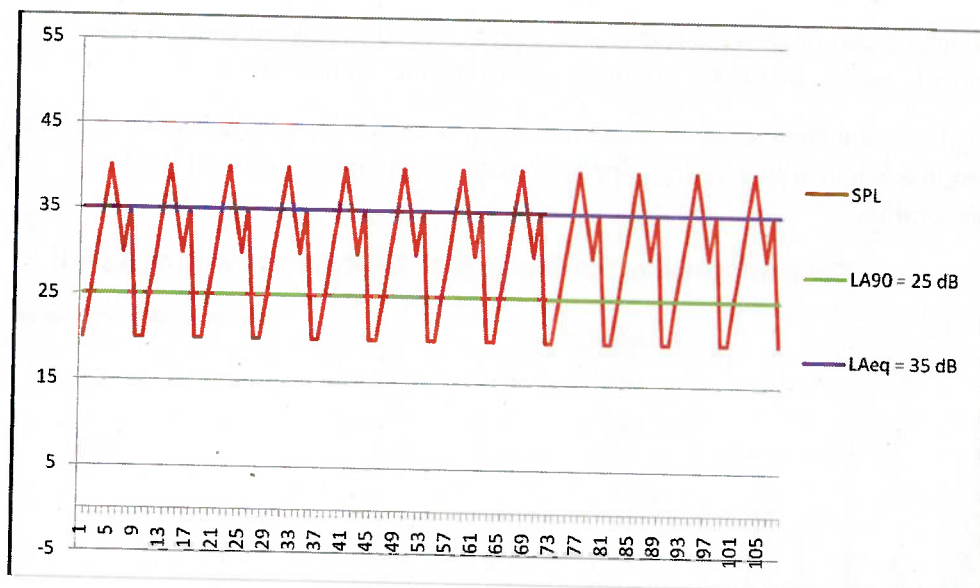


Figure 13 LAeq,t and LA90,t values of an indicative time varying noise signal"

The GPG also explains in section 7.1 that the guide cannot provide a definitive set of conditions for a wind farm, despite suggesting some options.

There is a current noise condition in force for the Denbrook wind farm that addresses AM limits, which has been accepted by the High Court in the UK, as follows:

"Condition 20

At the request of the local planning authority following receipt of a complaint the wind farm operator shall, at its expense, employ a consultant approved by the local planning authority, to assess whether noise immissions at the complainant's dwelling are characterised by greater than expected amplitude modulation. Amplitude modulation is the modulation of the level of broadband noise emitted by a turbine at blade passing frequency. These will be deemed greater than expected if the following characteristics apply:

- (a) A change in the measured LAeq, 125 milliseconds turbine noise level of more than 3 dB (represented as a rise and fall in sound energy levels each of more than 3 dB) occurring within a 2 second period.
- (b) The change identified in (a) above shall not occur less than 5 times in any one minute period providing the LAeq, 1 minute turbine sound energy level for that minute is not below 28 dB.
- (c) The changes identified in (a) and (b) above shall not occur for fewer than 6 minutes in any hour.

Noise immissions at the complainant's dwelling shall be measured not further than 35 m from the relevant building, and not closer than within 3.5 m of any reflecting building or surface, or within 1.2 m of the ground."

Kilkenny County Council may wish to consider Condition 20 of the Denbrook Wind Farm as an AM condition for any future wind farm that they may approve.

Conditions referencing the IoA AM Preferred Method should be avoided for wind farms.

INFRASOUND AND LOW FREQUENCY NOISE (ILFN)

It is recognised that infrasound and low frequency sound is emitted from wind turbines and that the infrasonic pulses are unlike any other environmental sound source.

Figure 3 shows the change in infrasound levels near to the Cape Bridgewater wind farm measured inside a nearby dwelling during changes in operation from stopped to 15% and 45% power generation.

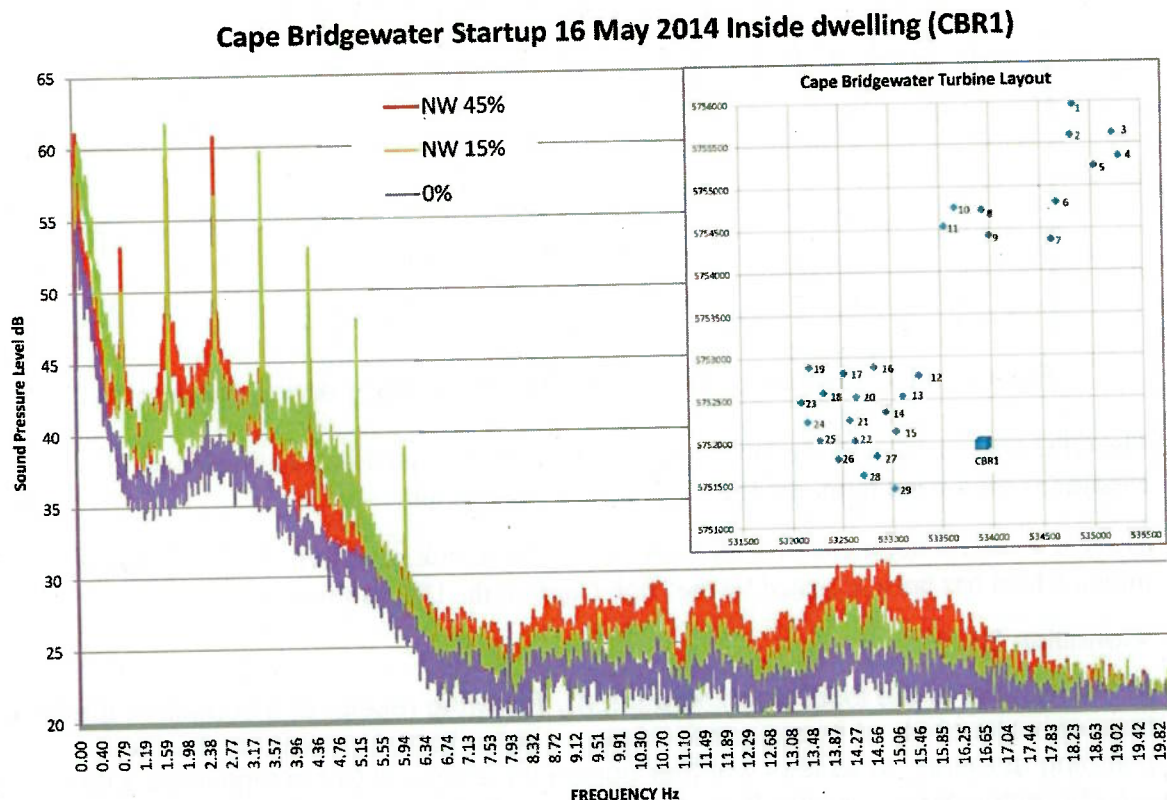


Figure 3

The references in the Report to opinions on ILFN do not hold weight. The Report references several studies in section 12.3.2.1 that have used the dBG filter to assess wind farm ILFN. However, the G-weighting filter attenuates the blade pass pulses and the harmonics associated with those pulses.

Section 12.3.4.4 of the Report references an Australian position statement from 2014. However, in 2019 the Australian National Health and Medical Research Council (NHMRC) recognised that there was enough evidence to justify funding further research into the health effects of infrasound from wind turbines. The study was to the value of AU\$3,000,000.

The Australian NHMRC study was awarded to two Australian universities, one in South Australia and the other in New South Wales.

This research is ongoing and one of the published papers in 2019 by researchers at Flinders University (Nguyen, D. P., Hansen, K. et al. Wind farm infrasound detectability and its effects

on the perception of wind farm noise amplitude modulation, Acoustics 2019) stated in its conclusions that: “Overall these preliminary results suggest that WF noise complaints could potentially be governed to some degree by the presence of infrasound” and that “We found that self-reported noise sensitive individuals can detect the presence of low-level infrasound (48 ± 2 dB(G)) above chance.”

The finding that infrasound at levels of 48 ± 2 dB(G) can be observed by individuals is in stark contrast to the generally used limit of perception, which suggest that a conservative human perception threshold of 85 dB(G) might be appropriate to account for variations in sensitivity of human hearing.

Much of the recent research into human response to wind farm generated infrasound has been based on synthesised wind farm sound played to subjects in a laboratory.

A paper by Cooper, S. (“The use of synthesised or actual wind turbine noise for subjective evaluation purposes” PROCEEDINGS of the 23rd International Congress on Acoustics 2019) is critical of the use of synthesised wind farm infrasound signals and has noted that it was the change in amplitude of the infrasound signal that was observed to be a significant factor in subject disquiet.

Unfortunately, the issue of adverse health effects from wind farm generated infrasound remains contentious and authorities may wish to consider an appropriate condition when approving future wind farm developments if ongoing Australian, or other relevant international research, finds adverse health effects from infrasound.

My own measurements at the Cape Bridgewater Wind Farm, also confirmed by S Cooper in his 2014 study⁵, showed that low frequency sound from the output shaft of the gearboxes to the generators exceeded DEFRA NAN-R45 indoor recommended guideline values at 32 Hz. Furthermore, the 32 Hz tones were modulated in frequency and random in level.

The Report has not considered low frequency noise impacts. The A-weighting filter significantly attenuates low frequency noise, which is why DEFRA NAN-R45 uses unweighted one third octave sound levels in the frequency range from 10 Hz through to 200 Hz.

Low frequency sound is an important issue that should be reported in an EIAR.

I have recently measured low frequency sound outside a dwelling during on/off testing near to a recently constructed wind farm. Figure 4 shows the results of measurements at the dwelling that is approximately 2 km from the nearest 3.6 MW wind turbine.

Measurements of the 40 Hz, 50 Hz, 63 Hz and 80 Hz one third octave unweighted sound levels before, and after the shutdown period, just prior to midnight, show that the threshold values of DEFRA NAN-R-45 were exceeded. Outside measurements were corrected for typical building façade attenuation according to Downey and Parnell (2017).

The occupants of the dwelling had complained about low frequency noise nuisance from the nearby wind farm and in this instance, it would appear that the complaints were justified.

⁵ Cooper, S. “The results of an acoustic testing program - Cape Bridgewater Wind Farm” The Acoustic Group Report 44.5100.R7MSC, Nov 2014

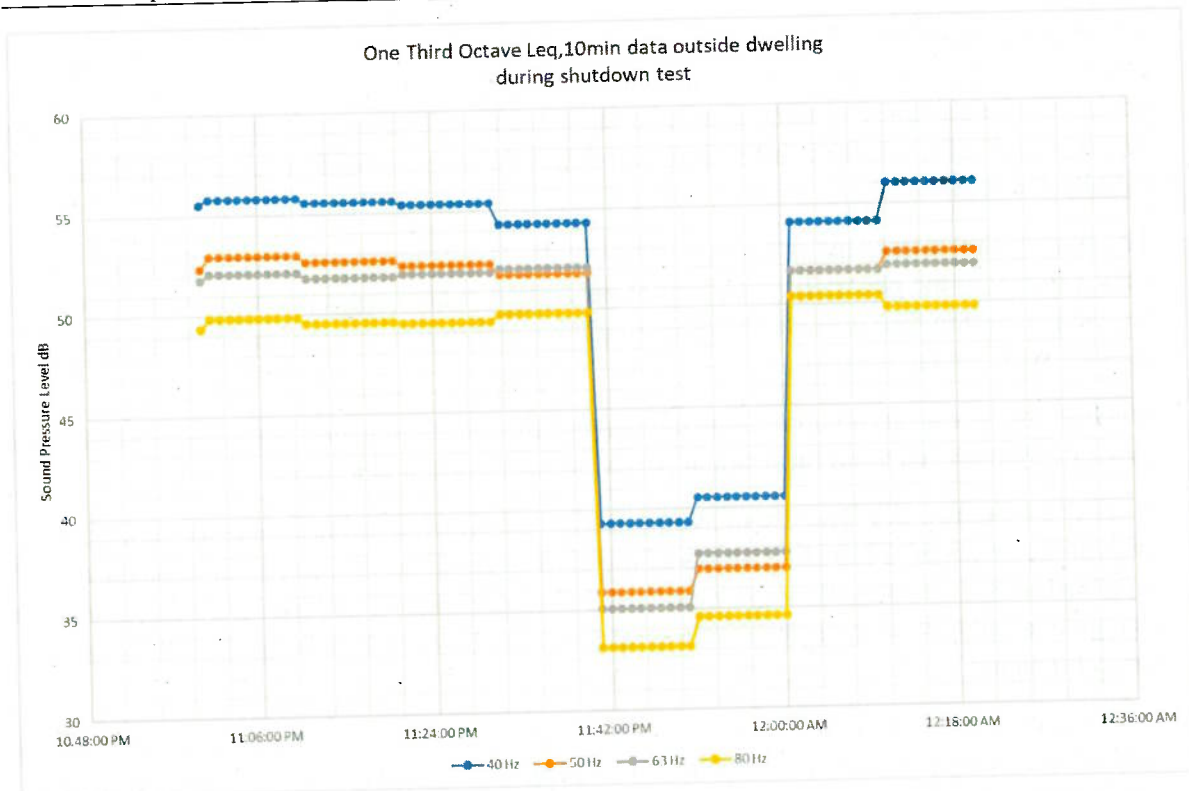


Figure 4

The Report has dismissed ILFN completely. At the very least, there should have been some baseline measurements covering ILFN at the NSRs. Low frequency noise predictions should also be completed in frequencies below that which ISO9613-2 allows. ISO9613-2 is only applicable for the octave bands from 63 Hz through to 8 kHz.

The Report is deficient in its assessment of ILFN.

CONCLUSION

The Kilkenny County Council should refuse the Briskalagh Wind Farm Application.

The Report within the EIAR lacks detail, offers different sound power levels and does not consider site effects or audible characteristics such as ILFN, tonality or amplitude modulation.

The assessment methodology adopted in the Report follows guidelines that have been shown to be deficient and are currently under review. These guidelines recommend a range of acceptable sound levels during the day but the Report has elected to choose the most lenient noise limit in the range that could be used.

The report has demonstrated that the proposed wind farm will not meet the most lenient recommended day time noise limits and noise reduction measures are required.

Predicted cumulative sound levels for the project have been checked using input data that has been described in the Report for one dwelling. My calculations show that the Report has predicted sound levels that are too low by 1.1 dB. With an alternative ground absorption factor of $G=0$ the predicted sound levels are 3.1 dB too low.

Appendix A

CV of William Leslie Huson

QUALIFICATIONS

BSc (Hons) Applied Physics, UK 1975

MSc Sound and Vibration Studies, Institute of Sound and Vibration Research, Southampton,
UK 1977

PROFESSIONAL AFFILIATIONS

Chartered Physicist, UK

Member of the Institute of Physics, UK

Member of the Institute of Acoustics, UK

Member of the Australian Acoustical Society

Member of the AV0001 acoustics working group for Standards Australia

Australian representative for the International Institute of Noise Control Engineers (I-INCE)

Technical Study Group 5 *A GLOBAL APPROACH TO NOISE CONTROL POLICY* (Now
disbanded after completion of the scope of work defining this group – see <http://www.i-ince.org/data/iince061.pdf>)

EXPERIENCE

Since graduating I have been involved in several scientific areas of research and development. My early experience was in constructing a microwave device to measure the temperature of plasma inside a nuclear fusion experimentation device at the UKAEA, Culham Laboratory in the UK. I then worked in research and development of thermal imaging devices prior to completing my Masters in Sound and Vibration Studies. My work since then (1977) has been primarily associated with acoustics and vibration both terrestrial and underwater.

Prior to 1991 I worked as a Sound and Vibration consultant in the UK for 12 years with involvement in a wide range of industries.

For the past 34 years I have worked in Australia as a noise and vibration consultant and have operated through my own consultancy firm for the past 28 years. I am experienced in modelling acoustic propagation from a variety of sources such as railways, roads, aircraft, underwater ordnance, wind farms, pile driving, blasting and numerous types of industry.

Of relevance to the evidence provided here is the work I completed for the Toora Wind Farm in 2002 which involved detailed analysis of pre and post construction noise data using NZS6808

1998 to check compliance with license conditions. NZS6808 is based upon ETSU-R-97. My experiences in the analysis of wind farm noise data led to a paper that was presented at the joint Australia and New Zealand Acoustics conference in 2006 titled “Review of the Application of NZS6808 to wind farms in Australia.” This paper highlighted the sources of error that were implicit and allowed in the NZS6808, 1998 standard and ETSU-R-97. The latest version of the NZS6808 standard (2010) addresses a number, but not all, of the data analysis error concerns described in my paper. ETSU-R-97 and the Institute of Acoustics Good Practice Guide to the Assessment and Rating of Wind Turbine Noise is regularly referenced when interpreting parts of NZS6808 in Australia and I am familiar with this document and the supporting Supplementary Guidance Notes (GPG).

Over the past ten years I have been independently gathering sound data in the audible and infrasound parts of the acoustic spectrum at numerous wind farms in Australia, the UK and Ireland. A summary of some of this research work on infrasound was presented in a peer reviewed paper: Huson, W. Les. “Stationary wind turbine infrasound emissions and propagation loss measurements.” 6th International Conference on Wind Turbine Noise, Glasgow 20-23 April 2015.

I have investigated the Preferred IoA Method for the assessment of amplitude modulation (AM) in detail and applied it to several wind farm measurements taken outside dwellings near to numerous wind farms in Australia. The findings of this work are the realisation that the Preferred IoA Method is only suitable for assessing a single wind turbine, that the resulting AM values greatly underestimate short term peak to trough amplitude modulation levels observed and that the Method is wholly unsuitable to assess AM (peak to trough amplitude modulation) from multiple wind turbines.

Detailed analysis of AM from wind farms has revealed that many AM events also exhibit impulsiveness when evaluated according to BS 4142:2014+A1:2019.

Appendix B

Presentation by E Sloth



Problems related to the use of the existing noise measurement standards when predicting noise from wind turbines and wind farms.

Erik Sloth Vestas

Niels Christian Møller Nielsen VESTAS
Ejler Kristensen BONUS Energy
Bo Søndergaard DELTA



Noise Measurements (IEC 61400-11:2002)

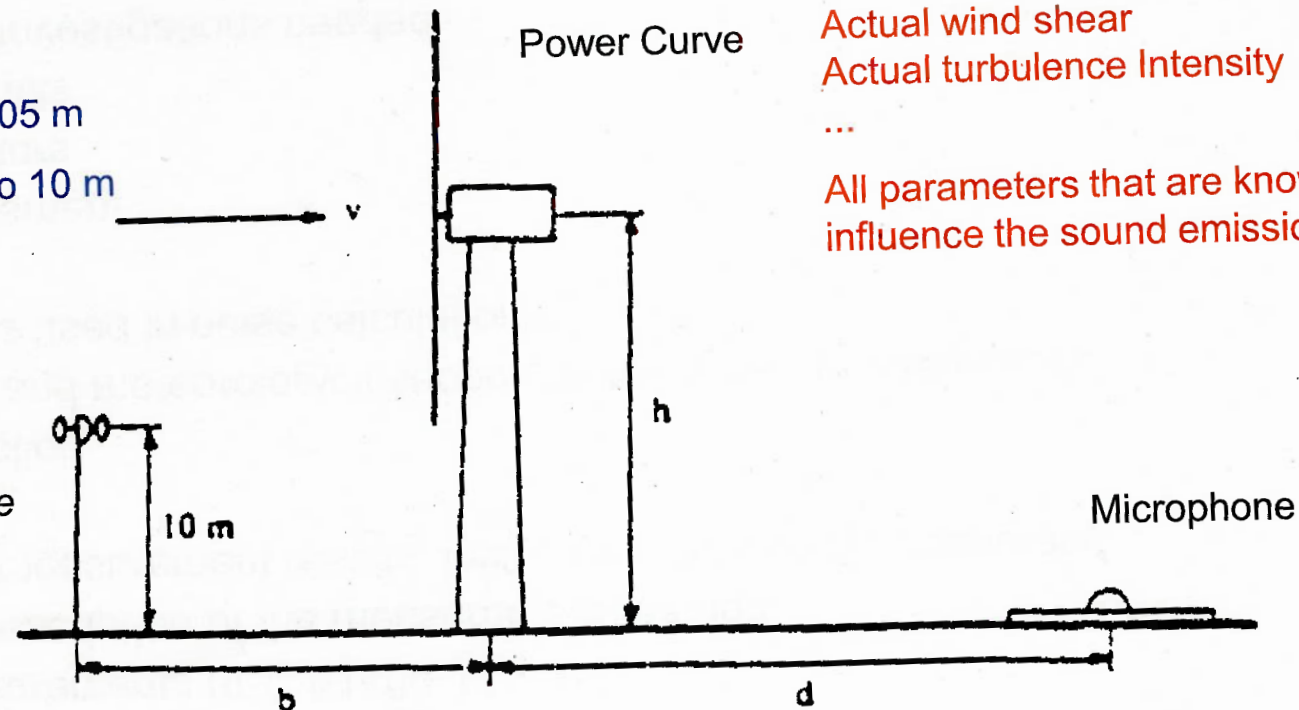
We correct for:

Air pressure
Air temperature

Standard terrain
roughness $z = 0.05$ m

All recalculated to 10 m
wind speed

Anemometer
*For background noise
only*



We do not correct for

Actual inflow angles

Actual air density, except in the power curve

Actual wind shear

Actual turbulence intensity

...

All parameters that are known to
influence the sound emission

Overview

- Noise Measurements (IEC 61400-11:2002)
 - Short description of the measurement method
 - Use of measurement results, including influence on inaccuracy.
- Noise prediction
 - Terrain and meteorology influence on the actual emitted sound
 - Methods used in noise calculations
- Noise assessment
 - Descriptors
 - Noise limits
 - Further investigations needed

Noise Measurement

- The results are standardized noise levels, which are fairly comparable from measurement to measurement on a given turbine type.
 - The wind turbine is used as a wind speed meter through a power curve measured on an ideal site (IEC 61400-12) OBS impossible if actual terrain does not fulfill conditions
 - Other parameters influence the noise level: relative humidity, turbulence, inflow angle, wind shear, turbine pitching are not accounted for.
 - The result is a fairly good tool for verification of warranties, but not a good tool for predicting noise at imission points where people actually can get annoyed.
-
- The Sound Power Level related to the produced power or at least the sound power level as a function of hub height wind speed could be a more basic relationship

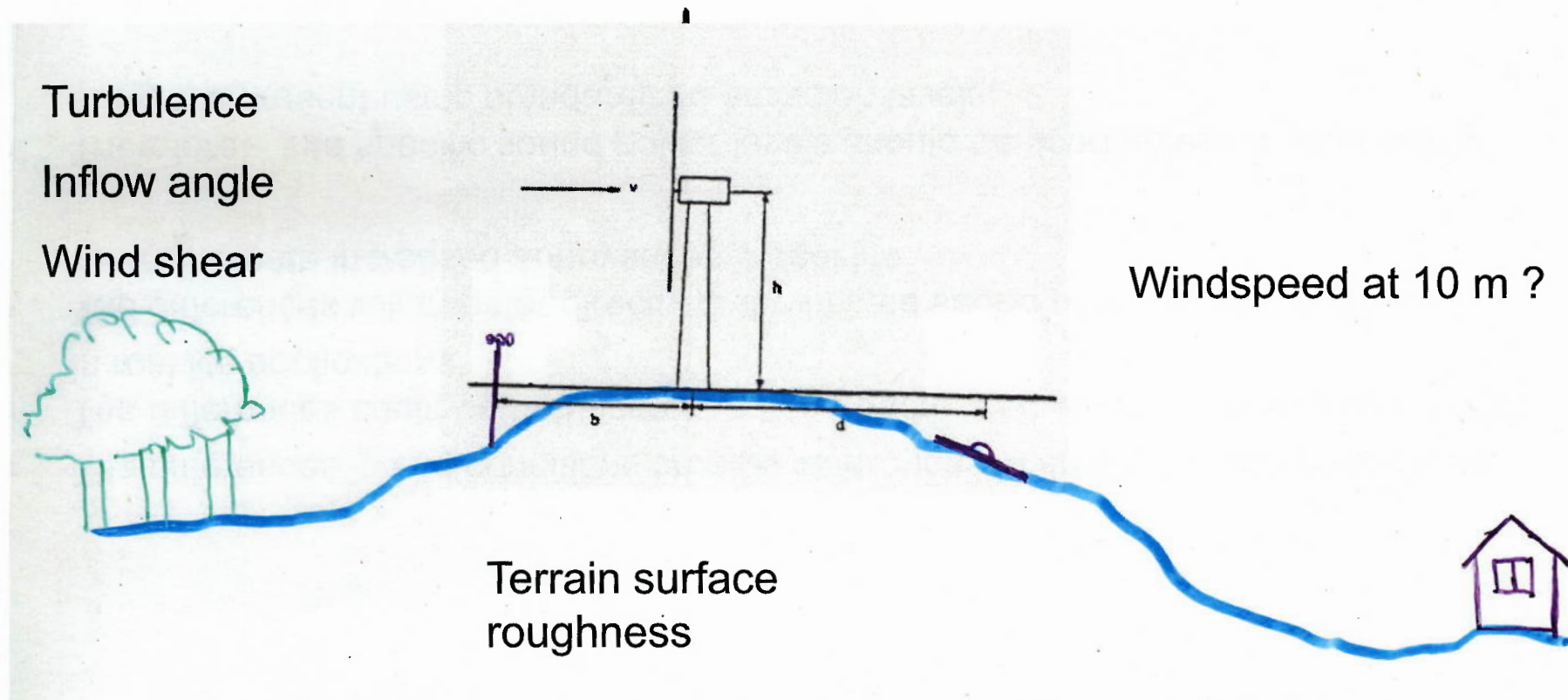
Typical problems in using the measurement results

- Where do we see the major deviations from standardized conditions during actual use of measurement results
- The wind turbines are almost always raised at sites where roughness differ from the standardized completely flat measurement site.
- Further we see different air density
- different wind shear
- different turbulence in inflow air
- different inflow angles
- Finally we often see other hub heights than used during documentation

Use of measurement results

For noise control measurements

For noise level calculations



Conclusion on measurement results

- The differences in site conditions creates differences in emitted sound power level.
- The differences could be both increased and decreased emitted sound power levels in real life applications
- The differences will transfer directly to the imitted sound power levels, and may thereby create increased annoyances in real life
- Therefore – site specific sound power levels should be used unless a good safety margin is present using standardized emission levels.

Uncertainty

- According to IEC 61400-11:2002 the standard deviation of a measurement results is app. 0.9 – 1.5 for an ideal site
- If the measurements are made at a site with considerable turbulence intensity or wind shear the standard deviation can be app. 2.0 dB
- The result is that when used for calculating the noise from a wind farm at an imission point, some WTG will be higher than the expected level and some will be lower.
- To correct for this, the measured inaccuracy cannot be placed upon the total calculated level, but must be included in the calculations.
- The result is that the higher the number of WTG's in the project is, the smaller the resulting inaccuracy.
- If the results are used for calculating the noise from a wind farm the standard deviation should be calculated as the weighted standard deviation

$$\sigma_{res} = \sigma_{method} + \sigma_{source} = \sigma_{method} + \frac{\sqrt{\sum (\sigma_i \cdot 10^{L_i/10})^2}}{\sum 10^{L_i/10}}$$

Solution to the outlined problems

- Accept that different sound power levels should be used in predictions and warranties.
- Avoid using sound power levels that include inaccuracy in predictions unless there is a good safety margin.
- The inaccuracy should be included in the calculation – the higher the number of WTG's the less the probability that all are in the high end of the uncertainty interval
- Use sound power levels that at least are corrected for: hub height, wind shear, air density, turbulence, inflow angle
- Be careful to make sure that the background noise measurements and wind conditions at the turbine positions uses the same reference position.

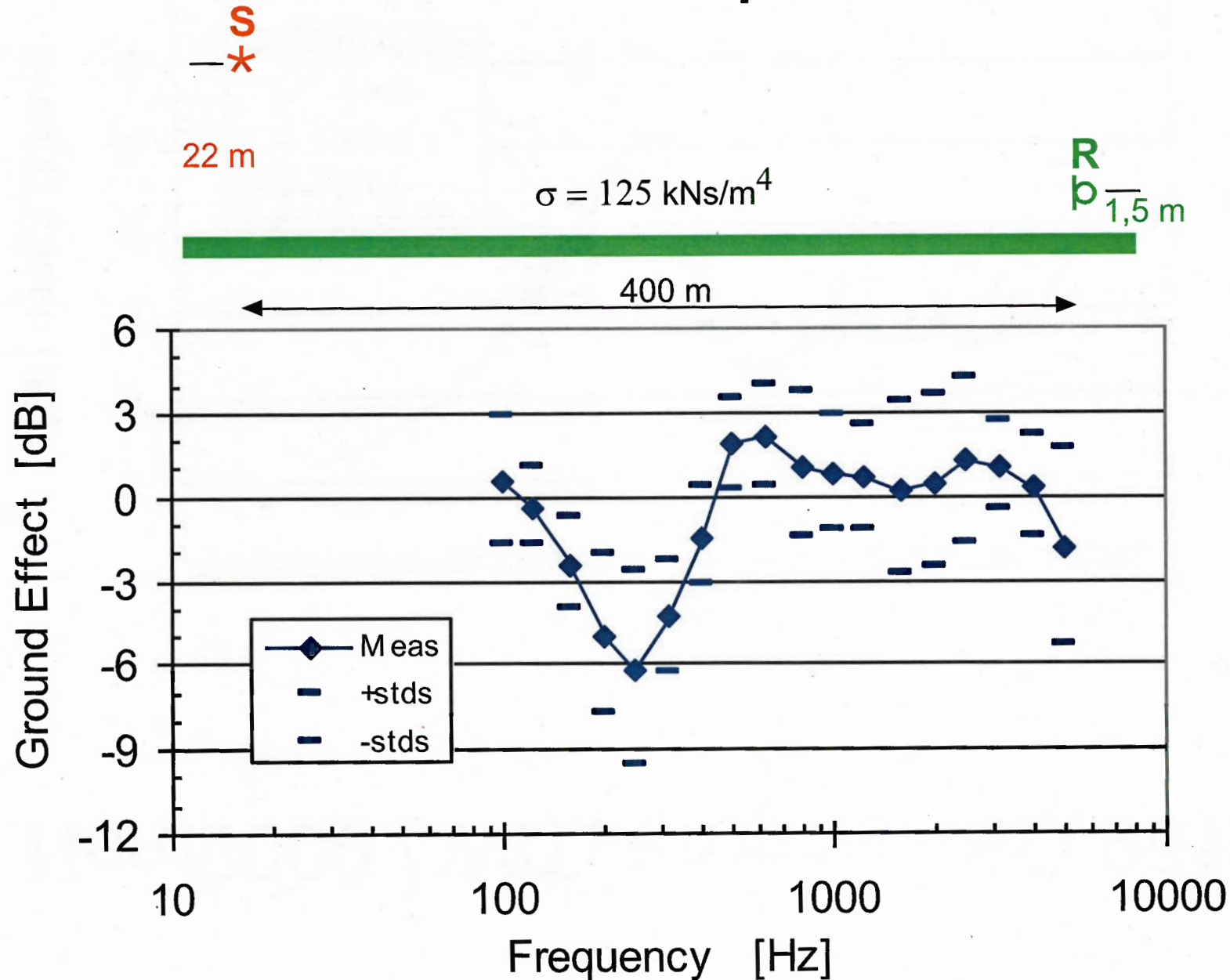
Noise level calculation models

- There are lots of different noise level calculation models:
 - ISO 9613-2 which is the model that we see the most
 - VDI 2714
 - Concawe
 - BS 5228
 - General Prediction Method (Danish)
 - Danish EPA Guidelines
 - Netherlands Guidelines 1999
 - Swedish method (land/sea)
 -
- Most of the methods are developed for noise from Industry, wind speeds below 5 m/s and standard meteorological conditions and must be suspected to give poor results at larger distances.
- ISO 9613-2 is known sometimes to overestimate the terrain effects if soft ground is used
- Manufacturers, developers, consultants and authorities have an interest in a noise level calculation model developed specifically for wind turbine noise

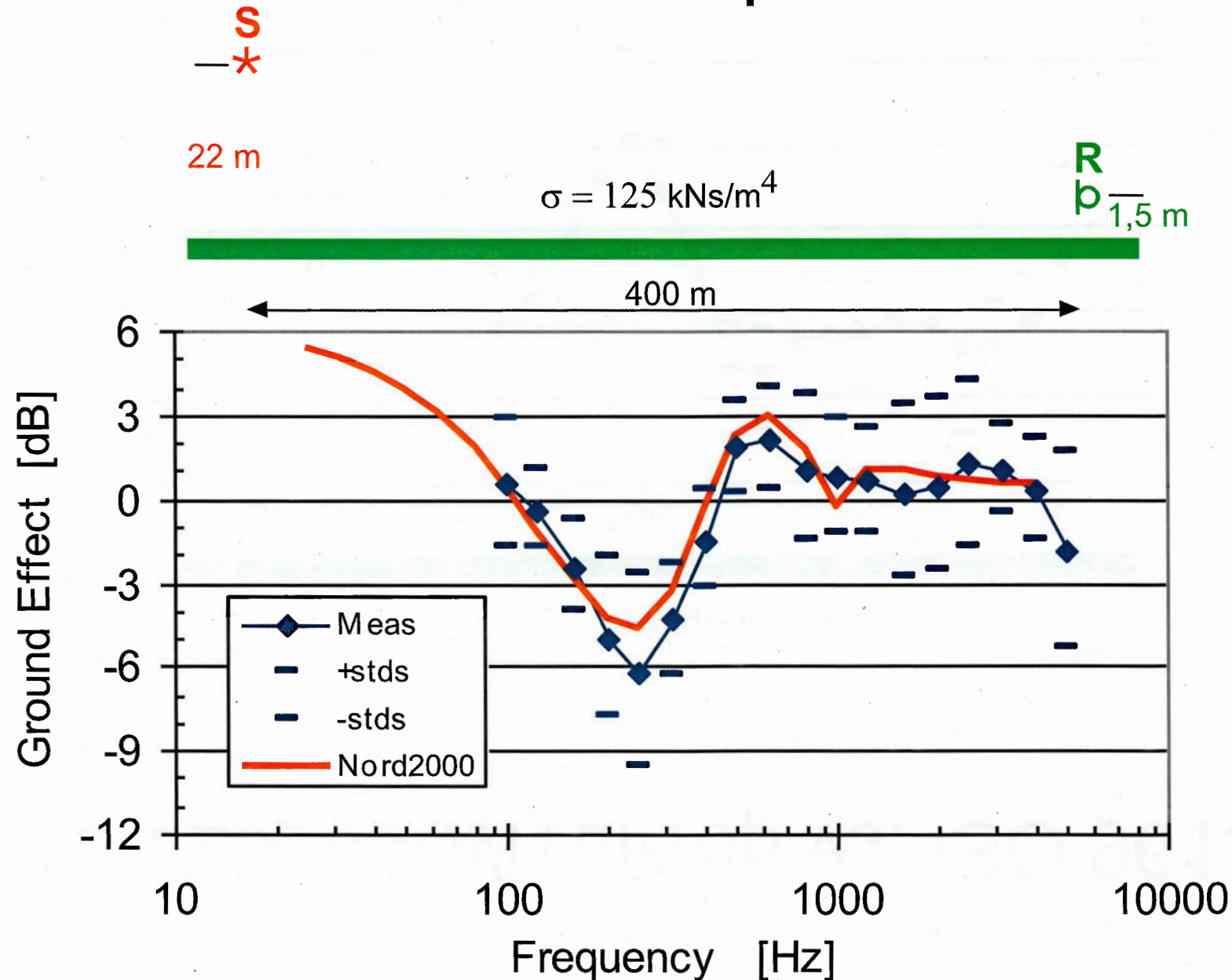
Noise calculation models

- In an EU project JOR3-CT95-0065 a model for wind turbine noise propagation (WiTuProp) was developed giving good results
- The WiTuProp model takes into account
 - meteorological conditions:
 - Wind speed / terrain surface roughness and direction
 - Air temperature and air temperature gradient
 - Relative air humidity
 - The ground type
 - Flow resistivity for grassland and harder surfaces
 - Screening (by terrain or screens / barriers)
- WiTuProp is a special case of a more comprehensive model developed later:
NORD2000

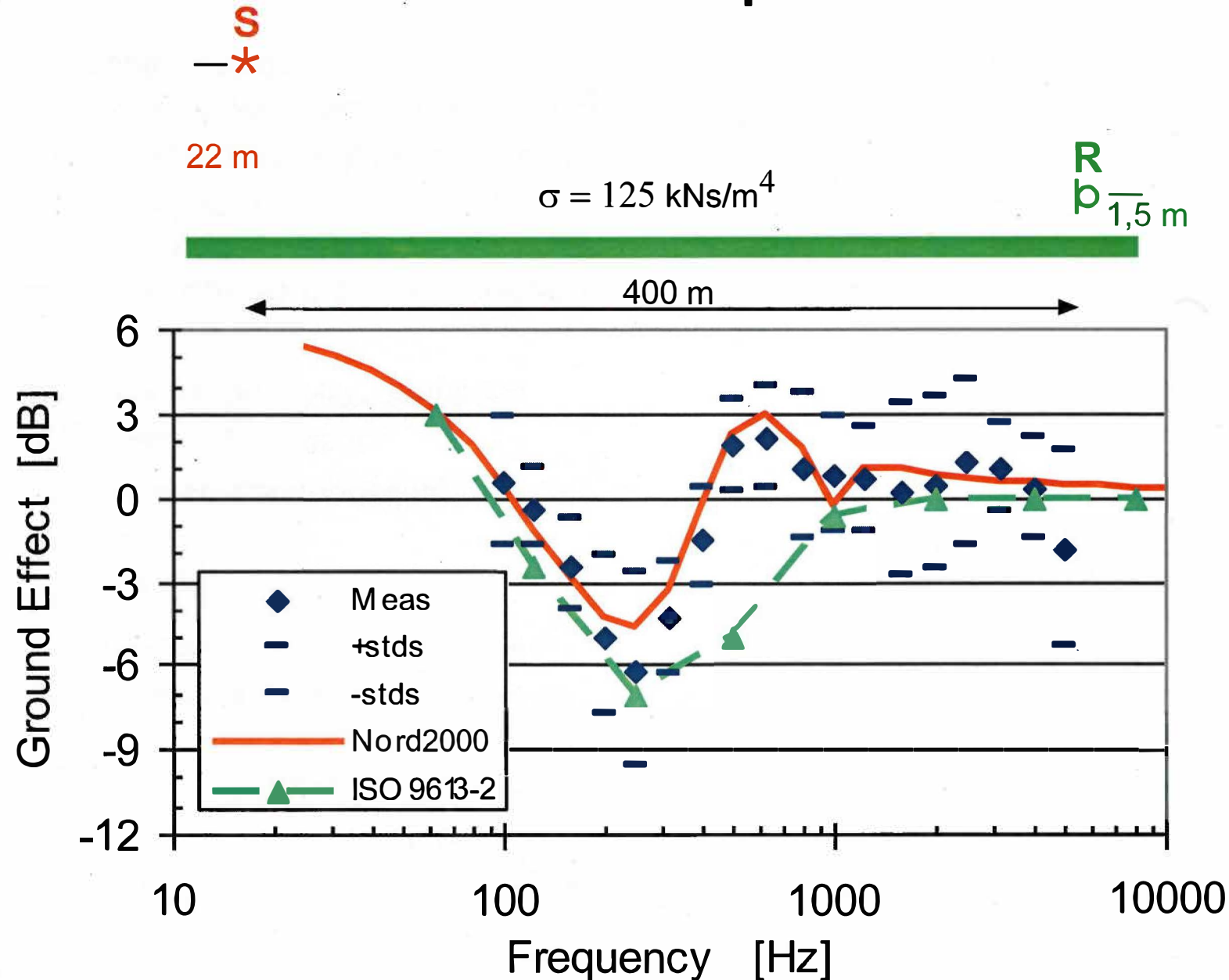
Nord2000 / WiTuProp vs. ISO 9613-2



Nord2000 / WiTuProp vs. ISO 9613-2



Nord2000 / WiTuProp vs. ISO 9613-2



Nord2000 model

- Meteorological conditions are better covered
- Complex terrain profiles (hill/valley)
- Mixed ground
- Terrain roughness
- Improved screen modelling
- 1/3 octave-band results
- Physical model – NOT empirical

Recommendation if the advanced model is not used:

- Use ISO 9613-2
- Make sure that hard terrain is used
- Be careful when defining screening effects from terrain - specially edge effects can be difficult to model

Noise Assessment

- The noise level at the imission points are normally given as an A-weighted noise level at different wind speeds.
- A tonality evaluation is normally included for the receiving points.

What do we know of the annoyance of the noise:

- We know that noise from wind turbines sometimes annoys people even if the noise is below the noise limits.
- Often people complaints on low frequency noise which many investigations often show in not present
- The noise limits are usually adapted from industrial noise limits and are based upon the principle that a given percentage of the population will feel annoyed when the limit is exactly fulfilled.
- Evaluation of tonality in the turbine noise is more based on the reproducibility of the results than on pure knowledge on what is actually annoying

Noise assessment

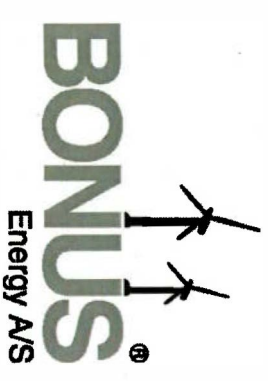
- Other descriptors need to be investigated to understand the annoyance caused by wind turbines
 - Low frequency noise and Infrasound – we cannot see it in our measurements
 - Modulation – may be the parameter that is heard as low frequency noise
 - Masking – which noise can mask noise from wind turbines
 - Other characteristics
 - ..
- This mean that tape recordings should me made on all sites in order to enable later analysis of up till now unrecognized parameters.
- In order to enable listener tests, artificial head investigations should be made
- We as a producer cannot cover this alone, since the local rules always need to be followed

Our recommended research program

- Artificial head measurements on real turbines of different sizes
- Background noise measurements on real sites
- Listener tests on obtained results
- These measurements are being made on a test basis during our Danish measurements
- General Research that is needed in this area includes
 - Psychoacoustic experiments
 - Listener test
 - Measurements at low frequencies
 - Analysis for other characteristics
 - ..



Questions ?



Appendix C

Suzlon Energy – Site effects

Siting of Wind Farms: Basic Aspects

When searching the internet for the definition of the word "layout" I came across following:

Layout in word processing and desktop publishing refers to the arrangement of text and graphics. The layout of a document can determine which points are emphasised and whether the document is aesthetically pleasing. While no computer program can substitute for a professional layout artist, a powerful desktop publishing tool can make it easier to lay out professional looking documents (source: www.webopedia.com)

In principle the same is valid for wind farm planning: The term layout in wind industry is used for choosing optimal locations for wind turbines. Tools like flow models help to identify the best positions, but cannot replace the engineer making the final decision by balancing interests.

So what is that engineering experience, what factors influence the decision?



Jessica Rautenstrauch, wind energy consultant from Anemos, Germany, at work.
© Paul Langrock (www.unendlich-viel-energie.de)

Wind resource

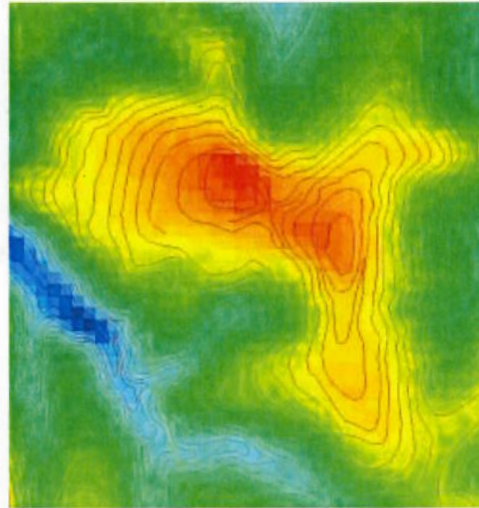
The wind resource is the most obvious factor to concentrate on when choosing a wind turbine location. We have a wide range of options to determine the wind resource of the site. The quality of the tools varies significantly and so does their price.

Common sense is a good starting point. Nature itself helps to guide us to suitable sites. Flagging of trees – permanent flagging and not the temporary bending in the wind – shows us the prevailing wind direction and is a good indicator for the strength of the wind.

However because of the uncertainty involved, using common sense as the only tool is of course insufficient. For any bankable estimate of the energy yield on-site wind speed measurements are required. The number of measurement masts required for a specific site depends next to the size of the project mainly on the complexity of the terrain. The measurement height should be minimum 2/3 of the expected future hub height. An increase in measurement height beyond this leads to a reduction of the uncertainty in the energy estimate. The measurement period must be one year or more to avoid any seasonal bias. Since the wind speed varies also inter-annually typically up to +/-12% a long-term correction is highly recommended.

The measured wind regime is extrapolated across the site to derive a resource map of the site using different flow models /4, 5/. A wind map like the one in Graph 1 can then be used to identify the windiest locations.

However additionally technical constraints should be taken into account when developing a layout /3/. A number of site specific wind load parameters can be extracted from the wind speed measurement. They are used to optimize the technical suitability of the chosen layout and the wind turbine type for the site specific wind regime.



Graph 1: Example Wind Resource Map. The colours denote the energy content of the wind, red high and blue low energy content.

Technical restrictions

Wind turbines are designed for specific conditions. During the construction and design phase assumptions are made about the wind climate that the wind turbines will be exposed to. In rough terms: For very complex sites with high wind speeds "heavy-duty" versions of wind turbines are available, which are sturdier but also more costly. Low wind speed sites in flat terrain do not put so high demands on the on the wind turbine structure, hence the construction can be more light-weight and hence cheaper. The different turbines have been classified by the IEC, class 1 being the highest wind speed class. The following table is a simplified summary of the IEC classification /1/.

IEC class	I	II	III	IV
V_{ave} (m/s) annual average wind speed at hub height	10	8.5	7.5	5
V_{ref} (m/s) 50-year maximum 10-minute wind speed	50	42.5	37.5	30

Table 1: IEC classes

But not only the wind speed but also other parameters play a role and have to be checked, when developing a layout for a specific turbine.

One of the most important parameters is the turbulence intensity. Turbulence intensity quantifies how much the wind varies typically within 10 minutes. Because the fatigue loads of a number of major components in a wind turbine are mainly caused by turbulence, the knowledge of how turbulent a site is of crucial importance.

We have to distinguish between two different sources of turbulence. Turbulence is generated by terrain features – which is referred to as ambient turbulence intensity - as well as by neighbouring wind turbines – which referred to as induced turbulence (Figure 1). Sources of ambient turbulence are for example forests, hills, cliffs or thermal effects. Thus ambient turbulence can be reduced by avoiding critical terrain features. But the wake-induced turbulence has far more impact than the ambient turbulence intensity /2/. Decreasing the spacing increases the turbulence induced by the wakes of neighbouring wind turbines meaning that there are limits to how close you can space the turbines. As a general rule the distance between wind turbines in prevailing wind direction should be a minimum of the equivalent of five rotor diameters. The spacing inside a row perpendicular to the main wind direction should be a minimum of three rotor diameters.

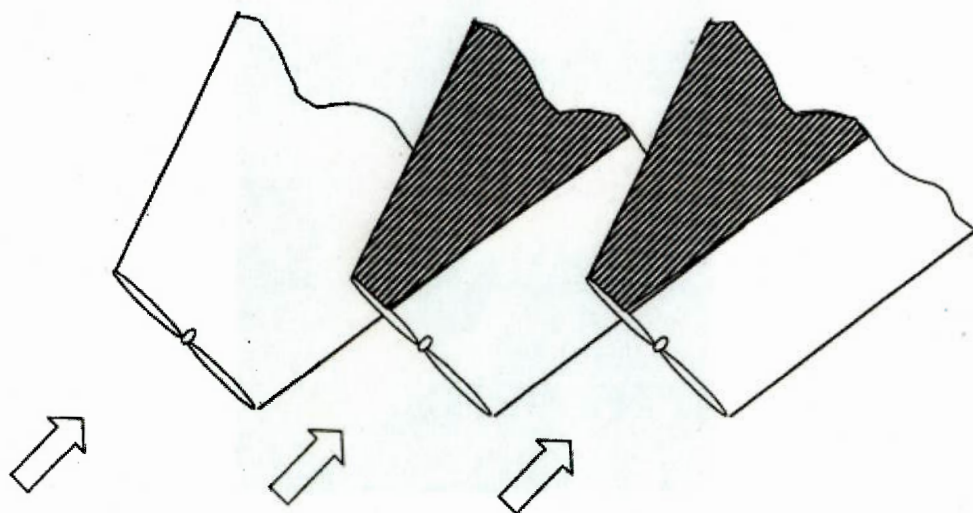


Figure 1: Shadowing in wind farm

If a layout is too close the resulting fatigue loads might be too high. In order to then ensure the lifetime of the main components wind sector management might have to be applied, meaning that some wind turbines might have to be switched off when they are operating in the wake of the neighbouring wind turbine.

Another parameter which has to be checked when developing a layout is the flow inclination, velocity tilt or in-flow angle. When wind turbines are to be placed on steep slopes or cliffs the wind might hit the rotor not perpendicular but at an angle. This angle is related to the terrain slope. With increasing height above ground level the effect of the terrain slope is normally reduced such that the terrain slope is only of indicative use to estimate the velocity tilt. A large in-flow angle will not only reduce the energy production but will also lead to an increased level of fatigue of some of the major components.

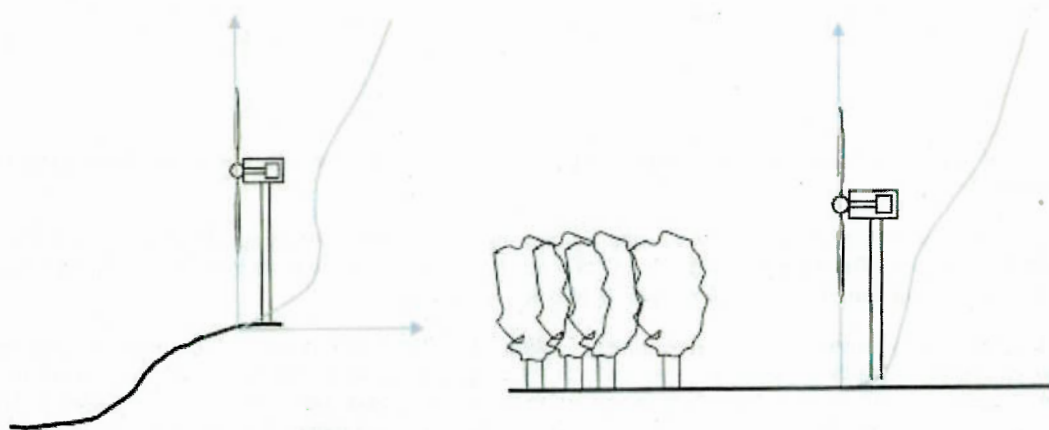


Figure 2: Distorted wind profile at steep slope (left) and behind a forest (right)

Furthermore a steep slope might cause a negative gradient across some parts of the rotor (Figure 2).

Normally the wind speed increases with increasing height. In flat terrain the wind speed increases logarithmically with height. In complex terrain the wind profile is not a simple increase and additionally a separation of the flow might occur, leading to heavily increased turbulence. The resulting wind speed gradients across the rotor lead to high fatigue loads particularly on the yaw system.

Obstacles like forest can have a similar effect on the wind profile and should be thus avoided.

Planning constraints

Next to the wind resource and technical considerations a good layout should also take planning constraints into account. The visual impact is course the most obvious. A layout that follows the shape of the terrain rather than straight rows of wind turbines appears to be less intrusive. Noise is another important parameter to take into account. Next to noise also the impact due to flicker at the nearest inhabited houses should be estimated. The accepted levels vary from country to country.

Electro-magnetic interference can cause problems. Hence placing wind turbines in a transmission corridor should be avoided.

Some areas on site might have to be excluded from development due to other factors related to fauna, flora and archaeology.



Jessica Rautenstrauch, wind energy consultant
from Anemos, Germany, at work.
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Summary

A large number of parameters have to be taken into account when developing a layout. Some work can be done using tools, but in the end the balance between financial, technical and planning constraints can be best done by an experienced engineer.

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