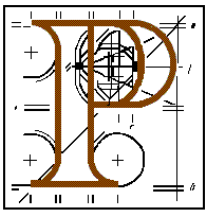
An Bord Pleanála



Inspector's Report

Site Address: Derrygowna, Knockavaddra, Monanveel, Co. Cork.

Proposal: Windfarm comprising 14* no. wind turbines, new access roads, access junctions
[*reduced to 6 turbines by way of further information]

Planning Application

Planning Authority: Cork County Council

Planning Authority Reg. Ref.: 14/05602

Applicants: Esk Windfarm Ltd.

Type of Application: Permission

Planning Authority Decision: Grant

Planning Appeal

Appellants: Esk Windfarm Ltd.
Michelle Duggan and Others
Bweeng Turbine Objection Committee

Type of Appeal: 1st Party –v- Refusal
And 3rd Party –v- Grant

Observers: Steve and Vicki O'Donoghue and Others.

Date of Site Inspection: 9th and 10th October 2015

Inspector: **G. Ryan**

Contents

1.0 INTRODUCTION

1.1 This is an upland area in north/central County Cork. The applicants applied for planning permission for 12 turbines and were granted 8 on appeal to the board under PL04.240281 in March 2013. This permission has not been implemented.

1.2 Under the current application, the applicants sought to increase the height of these permitted turbines and to move 5 of them. The applicant also sought to construct 6 additional turbines to the east of the permitted turbines. As such, 14 turbines were proposed.

1.3 During the course of the application, while the application was 'out on further information' the board issued a decision in respect of a referral on point of dispute under PL04.RP2104 in October 2014. The effect of this decision was that the applicants determined they could pursue the desired modifications to the 8 permitted turbines without the need for the subject application. As such, the further information submitted by the applicants sought to modify the subject proposal such that it covered only the 6 'new' turbines that were before the planning authority for consideration.

1.4 The planning authority issued a grant of permission on this basis. There are now 3 appeals before the board, 2 from or on behalf of local residents and 1 from the applicants, who are appealing conditions.

2.0 SITE

2.1 CONTEXT AND TOPOGRAPHY

2.1.1 The site is located approximately 11km to the southwest of Mallow. Nad, which is designated as a Village Nucleus in the LAP 2011, is located approximately 800m to the to the west of the site. Lyre settlement lies approximately 2.5km to the west, and Banteer is approximately 7.2km to the northwest, Lombardstown is approximately 4.7km to the northeast, Glantane lies approximately 4.5km to the northeast, Bweeng is approximately 1.7km to the east/southeast, with Dromahane located approximately 8.0km to the northeast of the site.

2.1.2 The site is located in the eastern foothills of the Boggeragh Mountains, which lie between Macroom and Mallow, to the northwest of Cork City. To the west, at higher elevations within the Boggeragh Mountains, are a number of turbines that are operational or under construction.

2.1.3 The site lies between two north-south regional roads, the R579 and the R619 which link the western fringes of Cork city with Kanturk and Mallow respectively.

2.2 SITE CHARACTERISTICS

2.2.1 The overall site of the 14 turbine scheme consists of a patchwork of landuses, predominantly forestry at various stages of maturity, but also including areas of pasture in the vicinity of Turbines 1-4. Figure 2.3 of the EIS provides a good overview in this regard.

2.2.2 In terms of topography, the site consists of a rolling upland massif, focussed on the peak of Bweengduff, on which is located a number of telecommunications lattice masts. The ground slopes relatively steeply to the northeast of Bweengduff, giving way to a low plain that stretches towards Dromahane and Mallow. The Bweeng-Lombardstown local road runs along the toe of this interface between the site's massif and the lower ground to the northeast.

2.2.3 A long subtle ridge extends west of Bweengduff, terminating in a more pronounced hill in the townland of Esk South, at the location of proposed turbines T5-T8. A second hill, also on the east bank of the Glen River, is located to the north in the townland of Esk North, and is the site of proposed turbines T1-T4. These two hills are separated by the Glennagurracat Stream.

2.2.4 'French's Road' runs east-west along the southern fringes of the site, linking the villages of Bweeng and Nad through a low pass. This road is characterised by the surrounding forestry uses, but also has some small clusters of housing.

3.0 PROPOSAL

3.1 BROAD OUTLINE

The initial scheme as submitted to the planning authority consisted of works that can be summarised as follows.

3.1.1 Modifications to permitted scheme

3.1.2 An increase in the overall permitted height from 126m to (up to) 136.5m. The submitted drawings show turbines which can be summarised as follows

	Printed dimension ('up to..')	Dimension Scaled from drawing
Rotor Diameter	105m	105m
Hub height	91.5m	80.5
Height to tip	136.5m	132.5

Table 1

3.1.3 Amendments to 5 of the 8 permitted turbine locations.

3.1.4 The applicant sought a '10 year' permission, which if granted in respect of the 14-turbine scheme would have effectively extended the duration of the extant permission.

3.1.5 Additional works

3.1.6 The expansion of the site area to the east

3.1.7 The construction of 6 additional turbines, bringing the scheme to 14 in total.

3.1.8 Changes to onsite roads, and the increase in the number of on-site borrow pits from 2 (permitted) to 4, and the use of the borrow pits as peat/overburden disposal areas, moving of the permitted anemometer mast, changes to construction access, and other amendments.

3.1.9 As a result of both the modifications to the permitted turbines and the additional turbines, there would be an increase in installed electricity capacity from the permitted 18.4MW to 42MW.

3.1.10 Accompanying documentation

3.1.11 The application was accompanied by letters of consent from 5 private parties (T1-T7) and from Coillte (T8-T14)

3.1.12 Planning application cover report

3.1.13 Some points of note in this report are as follows.

3.1.14 Since the grant of permission under PL04.240281, additional lands have become available to the applicants.

3.1.15 The proposal seeks to increase the height of the permitted turbines in order to maximise the energy yield. The spacing

requirement of the larger turbines requires amendments to be made to their permitted locations. The proposal is being made in order to satisfy the grid connection offer that has been secured by the applicant. On review of the options available, it was considered more appropriate to optimise and extend the site of the permitted windfarm rather than bring forward a new site at another location in the vicinity.

3.1.16 Notes that under PL04.240281, the planning authority and the board omitted 4 turbines to the northwest of the site for visual reasons. The new lands to the east of the site are less visually sensitive, forested, remote lands.

3.1.17 The report identifies a number of 'Assessment Issues', and provides information and commentary on same.

- The Duhallow Way – Access to be maintained.
- Landscape – Refers to ZTV mapping and photomontages.
- Noise – Refers to relevant sections of EIS.
- Health Impacts – Refers to relevant sections of EIS.
- Property Values – Refers to relevant sections of EIS.
- Tourism – Refers to relevant sections of EIS.
- Peat Stability and Management – Refers to relevant sections of EIS.
- Drainage – Refers to relevant sections of EIS.
- Grid Connection – The development as previously permitted and as currently proposed make provision for an underground cable to run from the permitted on-site substation in a northwest direction towards the public road and thereafter to the national grid at the existing 110kV substation on the site of the Boggeragh Windfarm grated under PA Ref. 01/1248 / PL04.130546

3.1.18 Modifications to basic scheme at further information stage

3.1.19 Due to the board's decision under PL04.RP2104 the applicant omitted the 8 westernmost turbines.

3.2 ENVIRONMENTAL IMPACT STATEMENT

3.2.1 The scheme is described predominantly within Chapter 3 of the Applicants' EIS – 'Description of the Proposed Development' - as well as throughout the EIS. The Chapters, main subheadings, and appendices covered in the EIS are as follows.

1 Introduction
2 Background to the Proposed Development
- 2.1 Site of the Proposed Development
- 2.2 Planning History
- 2.3 Selection of the Optimum Site
- 2.4 Site Design, Constraints and Facilitators Methodology
- 2.5 Energy Policy and Targets
- 2.6 Climate Change
- 2.7 Strategic Planning Context
- 2.8 Alternatives
- 2.9 Scoping & Consultation

3 Description of the Proposed Development
- 3.1 Introduction
- 3.2 Community Gain Proposal
- 3.3 Development Layout
- 3.4 Development Components
- 3.5 Access & Transportation
- 3.6 Site Drainage
- 3.7 Construction Management
- 3.8 Construction Methodologies
- 3.9 Operation
- 3.10 Decommissioning

4 Human Beings
- 4.1 Introduction
- 4.2 Receiving Environment
- 4.3 Tourism
- 4.4 Public Perception of Wind Energy
- 4.5 Health Effects of Wind Farms
- 4.6 Property Values
- 4.7 Shadow Flicker
- 4.8 Likely and Significant Impacts and Associated Mitigation Measures

5 Flora and fauna
- 5.1 Introduction
- 5.2 Published Information
- 5.3 Flora in the Existing Environment
- 5.4 Fauna in the Existing Environment
- 5.5 Likely and Significant Impacts on Flora and Fauna and Associated Mitigation Measures

6 Soils & Geology
- 6.1 Introduction
- 6.2 Schedule of Works
- 6.3 Soils and Geology Environment

APPENDIX 3 Declaration of Exempted Development
APPENDIX 4 Preliminary Construction and Environmental Management Plan
APPENDIX 5 Health Study References
APPENDIX 6 NPWS Site Synopsis
APPENDIX 7 Natura Impact Statement
APPENDIX 8 Vascular Species List
APPENDIX 9 Turbine Base Botanical Surveys
APPENDIX 10 Cork Ecology Bird Report
APPENDIX 11 Species Distribution Maps
APPENDIX 12 Peat Stability Assessment
APPENDIX 12a PSD Analysis Report
APPENDIX 12b Trial Pit Log
APPENDIX 13 Recharge Co-efficients
APPENDIX 14 Certificates of Analysis
APPENDIX 15 Carbon Calculations
APPENDIX 16 Glossary of Noise Terms
APPENDIX 17 Calibration Certificates
APPENDIX 18 Modelling Parameters
APPENDIX 19 Preliminary Noise Contour
APPENDIX 20 Predicted Noise Results vs Adopted Noise Criteria at Various Wind Speeds
APPENDIX 21 ZTV and Photo Locations Map (A0 size)
APPENDIX 22 Photographic Records

3.2.2 My assessment at Section 11.0 below draws on the contents of the EIS where relevant to the issues raised in the appeal.

3.3 FURTHER INFORMATION SUBMISSION (UNSOLICITED)

3.3.1 Initial unsolicited further information

3.3.2 Prior to the planning authority's request for further information, the applicant submitted unsolicited further information rebutting assertions made in the 3rd party submissions. This rebuttal covers the issues of noise, visual/landscape impact, shadow flicker, health risks, local wildlife, communications signal, devaluation of property, and effects on tourism.

3.3.3 The report largely confines itself to highlighting relevant sections of the EIS under each topic rather than introducing new information. The exception to this is in relation to communications signals. The applicant states that following the submission from Tetra Ireland, they have liaised with them and have provided them with the required information. In relation to the submission from Towercom, the applicant refers to previous consultations and asserts that the requirements of network operators have been taken into account.

3.3.4 Second submission of unsolicited further information

3.3.5 Following the submission of the substantive response to the further information request (see below), the applicant submitted unsolicited further information rebutting the 2nd set of 3rd party submissions received by the planning authority.

3.3.6 In addition to matters raised previously in submissions by the applicant, this submission makes the following points of note.

3.3.7 In relation to the NRA's submission, no works are required to be carried out to any National Routes to facilitate turbine delivery. In addition, on the issue of licenses for heavy loads, while turbine delivery vehicles are large, they do not and will not exceed the axle loading weights that are permissible under the 2003 regulations. Licenses are required, but these are due to the size of the vehicles, not the weight. The road authority's 'no go' routes do no conflict with the proposed delivery routes.

3.3.8 In relation to the submission from the DoAHG, the applicant has no objection to the suggested archaeological conditions or the suggested additional powers to be conferred on the supervising clerk of works. On the issue of Hen Harrier, the planning authority will be aware of the detailed discussions held with the NPWS in relation to the provision of an appropriate and detailed foraging habitat mitigation plan.

3.4 FURTHER INFORMATION SUBMISSION (SUBSTANTIVE)

3.4.1 The planning authority requested further information of the applicant on 11 points, and the substantive response to this request was submitted by the applicant on 16th April 2015, and comprised the following documents.

- Further information response report
- Addendum to the EIS
- Updated photomontage Booklet
- Updated Planning Layout Drawings
- Report on the location of known Hen Harrier breeding sites (not to be placed on public file)
- Revised NIS

3.4.2 The submission was readvertised by way of revised public notices stating that significant further information had been furnished to

the planning authority, and that further submissions would be accepted.

3.4.3 As stated previously, the applicant sought at further information stage to reduce the proposed development from 14 to 6 turbines. The entirety of the further information response is framed in terms of a 6 turbine scheme, unless otherwise stated. The applicant also sought to amend the scheme to include the grid connection within the EIS, on foot of the ruling in the Ó Grianna case (see section 11.6.11 below

3.4.4 The further information request is replicated in its entirety below, indicated with vertical lines along the left of the text. The Applicants' response is summarised below each item.

3.4.5 Item 1 – Roads

- *While it is noted the EIS assesses the traffic implications in terms of equivalent pcus on the roads along the proposed Western and Eastern Routes and trips generated for delivery of turbines and other construction materials and staff, there appears to be no consideration of associated traffic in terms of movements connected to servicing, maintenance and fuelling of construction plant and machinery. Additionally significant accommodation works have been identified at bends and other locations along the delivery routes – the traffic generated to give effect to these works has not been considered. The EIS does not consider the impact of traffic diverted from the proposed Routes onto adjoining local roads to avoid congestion, delays etc. during construction. As such you are requested to provide this detail.*

Applicants' Response: Provides additional details in this regard. Servicing and maintenance would be minimal. No additional junction improvements would be required.

- *It appears from the submitted documents that it is proposed that all construction traffic and deliveries will utilise the proposed Western and Eastern Routes. The Municipal Roads Office determines that in order to give effect to same that only these Eastern and Western routes should be used and specifically that the following roads are listed as no-go routes for all construction, delivery and service traffic:*

  [lists 11 roads or road sections]

  You should respond to this point.

Applicants' response: 'No go' routes are identified and mapped. An enforcement and signage regime is set out.

- *The EIS does not address the impact of the traffic in terms of structural loading and wear and tear on roads that typically are narrow, normally lightly trafficked and unsuited to repeated significant loads. These roads serve as key linkages sustaining rural livelihoods and businesses and the proposed development must take account of this. In this regard you should provide an assessment of the potential impact to these local roads by way of heavy/abnormal and general construction vehicles moving to and from the site for the period of construction. You are advised to consult with the Area Office in relation to the above points.*

Applicants' Response: proposals for road maintenance before, during, and after construction are set out. The use of a roads bond is standard practice.

3.4.6 Item 2 – Telecommunications

It is not clear from the information provided in the EIS that the location and scale of turbines proposed will not have a negative impact on telecommunication networks operating from the masts adjacent to the proposed site. You are requested to provide further details of consultation with the neighbouring Telecommunications providers, (including Towercom & Tetra) to satisfy that the turbines will not negatively impact on networks citing any specific mitigation measures if necessary.

Applicants' Response: The applicants have consulted with the telecoms providers in question, and previous concerns have been resolved. Appendix 2-1 consists of copies of emails between the applicants' agent and both Tetra Ireland and Towercom on this issue.

3.4.7 Item 3 – Shadow Flicker

On reviewing chapter 4 of the EIS it is considered that the worst case scenario figures on the basis of 100% sunshine during daylight hours should be used to measure the potential for shadow flicker. On the basis of this a number of houses will potentially be affected by shadow flicker. In this regard you should provide a detailed map which clearly indicates all affected properties, details the location of all turbines and provides distances between the turbines and affected dwellings. In addition you should provide specific mitigation measures for all dwellings which are affected by excessive shadow flicker and if necessary consider repositioning/omitting turbines from the scheme where excessive flicker cannot be ruled out.

Applicants' Response: Revised modelling based on 100% sunshine during daylight hours is submitted in respect of the 6 proposed turbines, along with any cumulative impacts from permitted turbines, where relevant. A total of 10 houses fall within the 10x turbine diameter buffer outlined in the WEG, and are therefore brought forward for detailed modelling.

8 of the 10 houses are shown as experiencing zero annual shadow flicker. Two houses to the east of T14 (H134, H137) are shown as receiving 10.5 and 14.5 hours per year, which is within the 30 hour annual limit set out in the WEG. In terms of maximum daily Shadow Flicker, the modelling shows the same 2 houses receiving a maximum of 0.44 and 0.46 hours each, both within the 0.5 hour (30 min) limits set out in the WEG.

Houses 54-58 are within 10 rotor diameters of both T11 and T1 from the permitted scheme. However, no shadow flicker arises from the proposed development due to orientation. Therefore, no cumulative impacts arise.

No mitigation is required. In the unlikely event that shadow flicker does arise, mitigation measures and strategies set out in 4.7.6 of the EIS will be applied.

3.4.8 Item 4 – Visual Impact Photomontages

> *It should be noted that a further turbine has been granted west of Bweeng (12/6636) at Lackendarragh upper and would be visible from certain views from the east and south. As such affected photomontages should be amended include this turbine.*
>
> - *Viewpoint 8 Beenamweel West (Bweeng Village) 7 turbines visible*
>
> *This shot should be retaken so as the house to the east obscures the view. The current view with the house in the picture does not portray an accurate cumulative impact.*
>
> - *View point 17 Townland: Glen South of Lyre village*
>
> *This shot needs to be taken from as the hedge/shrub currently obscures the true view and does not portray an accurate cumulative impact.*

Applicants' Response: The complete set of photomontages previously submitted have been re-developed with the following amendments:

- Turbines 1-8 of the permitted scheme have been detailed as per the permitted dimensions
- The subject 6 turbines have been presented as turbines 9-14.
- The additional permitted turbine at Knockavaddra/Lackendarragh Upper has been included.
- Viewpoints 8 and 17 have been retaken at appropriate locations and are presented as viewpoints 19 and 20 respectively, as requested by the planning authority.

Figure 4.1 provides a useful overview of the viewpoint locations along with all existing, permitted, and proposed turbines in the area.

3.4.9 Item 5 – Hen Harrier

> *The applicants are requested to submit detailed information regarding the location of all known Hen Harrier breeding sites (historic, attempted and active), and pair territories within 5km of the proposed development site. For reasons relating to the protection of this species, this data should not be put on the public file. The applicants should also provide additional information relating to patterns of movement over the site observed during the 2014 breeding season.*
>
> I*n addition, the applicants are requested to provide an estimate of the area of foraging habitat which will be lost to each breeding pair taking up territory within the proposed development, to estimate what proportion of a pairs breeding success this is likely to represent (with the scientific basis for these estimates), and to assess the significance of such loss, taking into account the overall size of their territories, the cumulative impact on each pair arising from loss of available foraging habitat within these territories as a result of other developments or land uses (i.e. other wind farms and forestry). The age class of forestry stands within the territory of each breeding pair should be taken into account in this assessment. Should such losses be found to be significant, it may be appropriate to consider the omission of some turbines, and/or the setting aside of compensatory areas outside the development boundary which would be actively managed as foraging habitat for this species. It is advised that any such options be explored and agreed with the NPWS in advance of submitting additional information. The cumulative impact assessment should take account of any habitat which will be lost arising from new planting which may take place within the vicinity of the proposed development site to compensate for the areas to be clearfelled to provide for the windfarm infrastructure. This assessment should be completed by a suitably qualified person.*

Applicants' Response: The applicant submitted a lengthy response on this issue that can be summarised as follows

Breeding sites and recorded sightings– Detailed information regarding the location of all known Hen Harrier breeding sites (historic, attempted, and active) have not been submitted as part of the further information request, but rather have been submitted as a separate document so as not to form part of the public file. During the 2014 breeding season, a total of 14 flight records were made. These are documented in Figure 5.2.1 and Table 5.1 of the submission. 13 of the 14 cover the eastern half of the EIS study area, which is the area in which the proposed 6 turbines would be located.

Habitat loss – Section 5.2.3 sets out the methodology for calculating habitat loss due to avoidance for each of the proposed turbines, which is presented in tables 5.2-5.7. Due to the differing stages in growth cycles for the area of forestry, the required mitigation area for each turbine is presented in terms of both 2016 only, and 2016-2041. Table 5.9 shows that a minimum of 0.38ha and a maximum of 43.79ha may be affected per annum during the lifetime of

the proposed development, with an average annual of 15.57ha per annum. By taking an average area over the lifetime of the windfarm, allows a fixed area to be proposed and actively managed as a mitigation foraging area. A similar approach was adopted under PA Ref 13/05885 by DP Energy Ireland Ltd. for the proposed Buttevant Wind Farm.

On the issue of potential cumulative impacts, the permitted Boggeragh windfarm is the subject of a suite of mitigation and habitat management/compensation measures that have been agreed. The permitted turbine at Knockavaddra is also considered.

Habitat mitigation plan – A detailed Hen Harrier foraging habitat mitigation plan has been prepared, taking account of the detailed forestry management plans already in place for the on-site and adjacent commercial forestry plantation owned and managed by Coillte. This plan would be implemented during the construction phase and operation phase. The plan was prepared in consultation with the NPWS. The plan sets out a range of management prescriptions across the topics of pre-mature felling of closed canopy forestry, brash windrowing, extended fallow periods, planting varieties, no fertiliser application, monitoring, and re-felling and re-planting. These prescriptions would be imposed on the selected foraging habitat mitigation areas.

These FHMAs have been selected with reference to a number of selection criteria, and have been approved by the landowners prior to inclusion in the plan. Areas A and B have a combined area of 15.729ha and are shown in Figure 5.2.2 and 5.2.3. They are located a distance to the north of the subject site, within the same upland area. Figure 5.2.4 sets out the proposed forestry cycle for managing this habitat. The plan would be monitored during its lifetime.

3.4.10 Item 6 – Other Bird Species

> *It is recommended that the applicants be requested to submit more detail relating to the results of winter (2013-2014) and summer bird survey work (2014) completed over the whole site for this application. The information should include details of numbers of records of individuals of each species recorded at each site visit, information relating to any species which has been identified to be breeding or likely to be breeding within the site, and any other data collected relating to individual species which might indicate how the site is used by that species, or where the species were recorded. The location of the Red Grouse breeding site identified in 2014 should be provided (not for the public file). Particular attention should be paid to species that have been identified to be potentially at risk from the development of windfarms. The FI should include an assessment of the potential for the proposed development to affect each such species. This assessment should be completed by a suitably qualified person. Where appropriate, measures should be proposed to mitigate any impacts identified, and an assessment of the likely success of any such measures should be provided. Full species lists for each completed survey should be provided.*

Additional survey work may be required, if this data is not available. Survey work should be completed in by a suitably qualified person, in accordance with SNH Guidance – Recommended bird survey methods to inform impact assessment of onshore windfarms, May 2014.

Applicants' Response: The submission refers to previous surveys on the site. Table 6.2 provides a useful summary in this regard. The submission goes on to identify sensitive species that have been recorded in the study area, potential impacts at construction (disturbance) and operational (collision, avoidance) phase. Mitigation measures include timing of felling operations and construction works, the creation of compensatory habitat (Hen Harrier), and the provision of nesting boxes (Kestrel).

3.4.11 Item 7 – Bats

It is recommended that the applicants be requested to provide additional information in relation to potential for impacts on bats. It is standard best practise to retain a minimum 50m buffer between turbines, woodland/forest edges, treelines and hedgerows known or likely to be used as commuting routes for bats, in order to minimise collision risk. The applicants should be requested to identify all flight paths/commuting routes within the site and to clarify whether any of the turbines are located within 50m of these. Consideration should be given to relocating turbines where these are located within 50m of bat commuting routes. If this is not possible, tree or hedgerow clearance may be required around some of the turbines, to minimise potential for impacts on bats. Mitigation should be proposed to compensate for the clearance of hedgerows, mature native trees, or semi-natural woodland within the site to prevent impacts on bats.

Applicants' Response: Flight paths and commuting routes within the study area have been identified. In the interest of clarity, all linear features were included, and are mapped on Figure 7.1, along with 50m buffers in each instance. The submission states that none of the 6 proposed turbines are located within a 50m buffer of any natural linear features such as hedgerows/treelines. All turbines bar T14 are within 50m of existing tracks/firebreaks/roads, which may potentially be utilised for commuting. Newly created forestry edge habitats will be located at a distance of greater than 50m from the base of the proposed turbines. No additional mitigation is deemed necessary for bats.

3.4.12 Item 8 – CEMP

Submit a revised CEMP which provides for:

- measures to be implemented to provide for the protection/maintenance of freshwater *buffer zones and for the protection of habitats of conservation value within and adjacent to the site during the construction phase;*

- pre-construction baseline water quality/hydrology survey and data collection;
- pre-construction Hen Harrier monitoring;
- daily supervision of works by an on-site clerk- of works;
- a daily water quality/hydrology monitoring programme (including monitoring of *suspended sediments) to be developed in accordance with CIRIA guidelines and implemented during the construction phase*
- daily post construction Hen Harrier monitoring;
- post construction water quality monitoring;
- programme for ongoing maintenance of the drainage scheme to be installed on site.
- monitoring of suspended sediments;

Applicants' Response: An amended CEMP is included as appendix 8-1 of the submission. Updated text is shown in green for ease of reference. Table 8.1 of the primary submission details where each item of the further information request is covered in the revised CEMP.

3.4.13 Item 9 – Noise

It is stated that the noise monitoring locations were identified following a noise contour at an early stage of the assessment and any locations that fell inside the predicted 35dB La90, 10min noise contour were considered for noise monitoring. In this regard the selection process for such locations should be clearly outlined, explained and demonstrated and an explanation of the preliminary noise contour assessment.

Applicants' Response: This issue is addressed in Appendix 9-1 of the submission, as prepared by AWN consulting. It states that he lowest baseline noise levels across the site are applied to all assessment locations.

AWN have also carried out an updated noise assessment to consider the operational impacts of the 6-turbine scheme, the results of which are included in the EIS addendum. The overall findings are not altered; there are no locations highlighted in the document where the proposed development exceeds the adopted day or night time noise criteria. Therefore, no mitigation measures are required.

3.4.14 Item 10 – Removal of redundant cables

> *Provide a method statement in relation to all cables to be laid on site. This should confirm that all cabling is laid in such a way that it can be removed from site at the end of life of the development in a sustainable manner.*

Applicants' Response: Underground electricity and fibreoptic cables would connect each turbine to the control building. These would be 1m below ground level, and routed along the sides of roadways across the majority of the site. Cross sections to be used are shown in Figure 10.1, and the construction methodology is outlined. In terms of decommissioning, it is not proposed to remove the ducting, but the cabling can be removed by pulling them through the ducts.

3.4.15 Item 11 – Drainage

> *The application is deficient in details to fully assess from a surface water and ground water perspective*
>
> *The applicant should submit the following information*
>
> - *In relation to the any water crossings submit detailed method statement showing how construction will be carried out and if the crossing is temporary or permanent*

Applicants' Response: Locations and details shown in Figures 11.2.1 and 11.2.2 respectively. Piped culverts to be used. Construction methodology given. All culverts to be permanent.

> - *Calculations to demonstrate controls (e.g. stilling ponds and drains) are of sufficient capacity. It is noted that Run-off calculations as presented in Section 7.3.16 of the EIS should be revised to reflect the increased run-off rates likely to be generated by the development. An assessment should be undertaken to determine if increasing the runoff by 1.09% rather than 0.03% as indicated in the EIS will result in a significant impact on downstream water courses in particular the storm water attenuation capacity.*

Applicants' Response: Refers to detailed response from HES (Hydro-Environmental Services) contained in Appendix 11-1. Following correspondence between HES and the planning authority, it transpired that the 1.09% cited in the further information request was an error, and should have read 1.036%. Furthermore, the applicant can confirm that the 0.03% increase reported in Table 7.11 was an error, and should have read 1.036%. The calculated net volumetric increases shown in Table 7.11 remain current.

These volumes are negligible and there will be no potential to impact on downstream watercourses in terms of flooding. Furthermore, the 1.036% increase relates to the site area itself. As a percentage increase in baseline runoff in the wider river catchments, the impacts would be negligible.

There are no impacts for the design and sizings of proposed drainage infrastructure on site.

- *A review of the site layout plan indicates that water course buffers have not been maintained as stated in the text in all cases. Please provide reasons for this.*

Applicants' Response: The response concerns itself with the 6 additional turbines only. There are 3 areas which encroach on the 50m buffer distance from natural watercourses, where site roads are to cross watercourses. Additional water protection measures are proposed at these locations.

- *Clarify if stilling ponds are to be left in place upon completion of the development and provide a drainage layout which indicates all measures to be left in place following construction.*

Applicants' Response: It is intended to leave the stilling ponds and other drainage measures (aside from silt fences) in place during the operational phase of the development.

- *An assessment of the need to dewater the Borrow Pit is required, given the proposed depth of excavation of 6-9m below ground level. If dewatering is required, confirmation that this water can be managed without impacting on downstream surface water courses.*

Applicants' Response: There will be 2 borrow pits under the permitted 8 turbine scheme (pits 1 and 2) and 2 borrow pits under the revised proposal (pits 3 and 4). No significant groundwater dewatering is anticipated, largely due to the elevation and topography of these locations. Any minor water inputs would be pumped to a dedicated borrow pit water management network. The submission goes on to outline a range of measures in this regard. The borrow pits will be backfilled once extraction is complete.

3.4.16 It should be noted that the further information was deemed to be 'significant' by the planning authority, and was therefore re-advertised.

3.5 EIS ADDENDUM

3.5.1 Submitted as part of the response to the further information request, the chapters, and subheadings shadow those of the initial EIS, incorporating the reduction from 14 to 6 turbines, and the incorporation of the grid connection into the EIS. I will refer to this document in this report as the EISA.

3.6 REVISED NIS

3.6.1 Submitted as part of the response to the further information request, this stand-alone document substitutes for Appendix 7 of the original EIS.

4.0 SUMMARY OF REPORTS AND SUBMISSIONS TO THE PLANNING AUTHORITY

4.1.1 At the outset, it is worth noting that the planning authority's internal reports follow an unusual page numbering system whereby all reports produced form part of a continuous and contiguous 172 page document. In the interests of clarity, this body of reports can be summarised as per the table below. The differing shades of grey depict the reports before and after the further information request/response. The contents of these reports are summarised in sections 4.2 and 4.7 below.

Department	Pages	Report title	author	Date	ABP File ID
Roads	1-7	Area Engineer's Report	Jim Moloney	22/08/14	11
Environment	8	Environment Report	Kevin Murphy	03/09/14	4
Archaeology	9-13	Archaeologist's Report	Mary Sleeman	11/09/14	3
Area Planner	14-52	Planner's Report - Primary	Chris Kenyon	15/09/14	59
Ecologist	53-60	Ecologist – Primary Report	Sharon Casey	15/09/14	1
Senior Planner	61-63	Planner's Report - Primary	Kevin Lynch	15/09/14	58
Environment	64-66	Environment Report - Primary	Miriam Kiely	16/09/14	56
Environment	67-71	Environment Report – Further Information	Miriam Kiely	05/06/15	40
Ecologist	72-90	Ecologist – Further Information Response	Sharon Casey	23/06/15	36
Roads	91-97	Engineering Report – Further Information	Jim Moloney	24/06/15	35
Roads	98-104	Engineering Report – Further Information[1]	Jim Moloney	25/06/15	33

[1] It would appear that this report and the roads report above are identical, the only difference being that they are dated one day apart (they are signed by the same person)

Area Planner	105-146	Planner's Report – Further Information Assessment	Chris Kenyon	25/06/15	32
Senior Planner	147-172	Planner's Report – Further Information Assessment	Ronnie Barry	29/06/15	31

Table 2

4.2 INITIAL DEPARTMENTAL REPORTS

4.2.1 Roads (pages 1-7)

4.2.2 Raises a number of issues that are subsequently reflected in Item 1 of the further information request.

4.2.3 The overall recommendation is to grant subject to 10 recommended conditions.

4.2.4 Environment (page 8, 64-66)

4.2.5 An initial report/memo on file relates to file allocation. The substantive report recommends further information on matters that are reflected in Items 9, 10 and 11 of the further information request.

4.2.6 Archaeology (pages 9-13)

4.2.7 Notes Chapter 11 of the EIS, which satisfactorily identified all known archaeological sites within the development, a poorly persevered stone row, and a redundant record. The author concurs with the recommendation to establish a 30m buffer zone around monument CO041-114.

4.2.8 Notes that the turbines would be visible from many of the archaeological monuments in the area, but agrees that the impacts would be slight.

4.2.9 Recommends a number of conditions that are reflected verbatim in Conditions 9, 10, 11, 12, 13 of the planning authority's ultimate decision.

4.2.10 Ecologist (pages 53-60)

4.2.11 Notes the applicants proposals that are intended to provide for the management and protection of surface water on site. These have been reviewed by the Environment Officer and by an independent reviewer on behalf of the planning authority. Notes that the applicant is to be required to submit further information.

4.2.12 The applicants may have underestimated the potential for the development to give rise to significant negative impacts on Hen

Harrier from the perspective of habitat displacement and disturbance, particularly with regard to the potential for cumulative impacts from habitat displacement due to other permitted windfarms in the area. Further information is required [reflected in item 5 of the further information request].

4.2.13 The appellants have not provided sufficient information to establish the general distribution or abundance of breeding or wintering birds using the site. Further information is required [reflected in item 6 of the further information request].

4.2.14 Additional information is required on the potential for impacts on bats [reflected in item 7 of the further information request].

4.2.15 The CEMP should provide for a programme of pre-construction monitoring of Hen Harrier and post construction monitoring of water quality and maintenance of the drainage scheme [reflected in item 8 of the further information request].

4.3 SUBMISSIONS FROM EXTERNAL CONSULTEES

4.3.1 The following submissions were made prior to the planning authority's requires for further information, unless otherwise stated.

4.3.2 Geological Survey of Ireland

4.3.3 No objections (provides details regarding GSI datasets).

4.3.4 An Taisce (2)

4.3.5 The first submission from An Taisce notes issues raised by Bird Watch Ireland during the consultation process of the EIS, regarding Hen Harrier. Evaluation is required in this area.

4.3.6 A second submission, received after the further information submission from the applicant, note that 14 flight records of Hen Harrier were made during the 2014 breeding season. The site is clearly an important foraging site for Hen Harriers. The surrounding area already has a significant amount of wind farm development and afforestation, both of which can negatively impact on the conservation of Hen Harriers.

4.3.7 Issues arising from extensive windfarms in an area include mortality of Hen Harriers resulting from collisions, and a decrease in foraging success rates and breeding production as a result of disturbance. Wind farm developments may displace Hen Harrier nesting up to 500m.

4.3.8 The site falls within Article 4 and 5 of the Bird Directive. Although it is not an SPA, under Article 4(4), all member states must 'avoid

pollution or deterioration of habitats' of all wild birds, including all species listed in Annex I of the Directive.

4.3.9 The provision of compensatory habitat is inadequate. Hen Harriers require that open habitat be maintained, and therefore felling and afforestation of non-native conifer or native forestry would not be suitable for the long-term conservation of Hen Harriers.

4.3.10 National Roads Authority (2)

4.3.11 The first submission from the NRA states that they will rely on the planning authority to abide by official policy in relation to development on/affecting national roads as outlined in the DoECLG Spatial Planning and National Roads Guidelines for Planning Authorities (2012).

4.3.12 A second submission, received after the Applicants' submission of further information, requires that any works to the national road network to facilitate turbine deliver shall comply with NRA DMRB (Design Manual for Roads and Bridges) and be subject to a Road Safety Audit.

4.3.13 The NRA state that any operator who wants to transport a vehicle/load outside specified limits must obtain a permit for the local authority.

4.3.14 All structures on the proposed haul route should be checked.

4.3.15 The NRA require that all agreements between the road authority and the applicant be forwarded to the NRA for record purposes. The NRA also request the forwarding of any licenses for cabling/trenching that would affect the national road network.

4.3.16 Irish Water

4.3.17 No objections subject to conditions.

4.3.18 Irish Aviation Authority

4.3.19 No objections subject to conditions.

4.3.20 Tetra

4.3.21 A request was made to the agents to be furnished with details of turbine heights, blade specifications, and turbine locations. No such information was received. Tetra Ireland is objecting to the proposed development as they have not been provided with full details in a timely manner to allow a complete appraisal of the development and any impact it may have on their Emergency Services Network. If these details are provided, Tetra Ireland will consider the development and give it a full appraisal.

4.3.22 Health Service Executive

4.3.23 It is recommended that the applicant test the well water of the one dwelling down gradient of the development during both the construction and operational phases.

4.3.24 It is not considered appropriate to change the impact evaluation criteria based on financial interest, as per the EIS in respect of locations H034 and H036. Quotes from WHO guidelines. The same principle should apply to shadow flicker. It is recommended that the board require the applicant to implement mitigation measures in the event of a shadow flicker impact, such as turning off a particular turbine at certain times.

4.3.25 Health Service Executive (Emergency Management Officer)

4.3.26 Makes a number of recommendations in terms of surface finishes, and the provision of an 'alias' Eircode and additional signage.

4.3.27 Department of Arts Heritage and the Gaeltacht (archaeology)

4.3.28 It is noted that the proposed development is in close proximity to, and may directly impact upon a Recorded Monument RMP No. Co 041-114 Stone row. It is also possible given the extent and nature of the groundworks required, that hitherto previously unrecorded features/deposits may be impacted upon.

4.3.29 The department concurs with the mitigation strategy outlined in Section 11.6 of the EIS, and recommends that these measures by included as a condition of planning permission.

4.3.30 Department of Arts Heritage and the Gaeltacht (archaeology and nature conservation)

4.3.31 Submitted after the submission of further information by the applicant.

4.3.32 Reiterates the recommendations of the previous submission in respect of archaeology.

4.3.33 On the issue of nature conservation, the submission notes that the site is upstream of the Glen River, which is part of the Blackwater River SAC, which is designed for, among other habitats and species, the freshwater pearl mussel, several subpopulations of which occur downstream of the Glen River in the main channel of the River Blackwater.

4.3.34 The inclusion of stilling ponds and the empowerment of the supervising clerk of works to stop works is noted. However, it is recommended that the clerk of works have the power to stop works when a siltation event is likely, in addition to after its occurrence.

4.3.35 For AA, it is important that any conditions are assessed in the assessment, and matters requiring further approval are not left over to the post-planning stage. Any condition that requires further approval by, agreement with, or consultation with the NPWS in relation to the CEMP may indicate an incomplete AA, and staff may not be in a positon to respond to such post-planning requests for further consultation on this basis.

4.3.36 In relation to hen harriers, the department note the objective under the EU Birds Directive to strive to avoid deterioration of habitats of bird species listed in Annex I. This particular applies to species which have declined in nearby SPAs, as Hen Harriers have in the nearby SPA.

4.3.37 Department of Arts Heritage and the Gaeltacht (nature conservation)

4.3.38 Submitted as a follow-up to the submission above, the Department state that a sentence had been omitted from the end of the section on Hen Harrier to the fact that the department is not aware of any reason to disagree with the calculations of the mitigation habitat required, or the mitigation acreage, locations, or management proposed, as described in the further information submission.

4.3.39 This submission also states that because the data on the location of the Hen Harrier breeding sites was not available, this aspect of the submission was not commented upon.

4.4 REPRESENTATIONS

4.4.1 A total of 47 3rd party submissions were received by the planning authority during the initial period for observations.

4.4.2 A further 51 3rd party submissions were received by the planning authority following the submission by the application of further information, which was deemed to be 'significant' and was therefore re-advertised.

4.4.3 These submissions are summarised in the planning officer's two reports. See Appendix 1 of this report at Section 16.0 below for an account of these summaries.

4.4.4 The issues raised are largely are reflected in the grounds of the 3rd party appeals summarised in section 10.0 below.

4.5 AREA PLANNING OFFICERS' FIRST REPORT (PAGES 14-52)

4.5.1 General

4.5.2 An initial report describes the development footprint as follows.

Turbine location	land cover
T1	Very degraded wet heath
T2	Wet grassland
T3	
T4	Former dry heath, now improved grassland
T5	Improved grassland
T6	
T7	Improved grassland
T8	Semi mature forest
T9	Young, dense forest
T10	
T11	Young, dense forest
T12	Recent clear-fell area
T13	Young, dense forest
T14	Young, dense forest

Table 3

4.5.3 Notes that the layout of this and the previously permitted wind farm has been constraints led, in order to avoid environmentally sensitive areas.

4.5.4 Notes that the proposed turbines 1, 4, 5, 6, 7 have been moved from their permitted locations, but are in close proximity.

4.5.5 Policy considerations

4.5.6 The site would appear to lie adjacent to and within the Strategic Search Areas for Wind Farm Development as outlined in the 2009 County Development Plan.

4.5.7 Having regard to policy INF 7-4 [relates to Strategic Search Areas of the CDP] and the fact that a wind farm development has already been granted on part of the site, it is considered that the development can be further considered.

4.5.8 There are a number of scenic routes in the general area (listed).

4.5.9 The Blackwater Valley cSAC is located to the west, adjacent to the site.

4.5.10 Notes that the [at time of writing] Draft Development Plan indicates the area as 'Open to Consideration'. In light of this draft policy, the development can be further considered.

4.5.11 Visual impact

4.5.12 When reviewed against the ZTV from 11/5276, it is clear that visibility would increase at the southeast/south, with a greater visual impact predicted from both Bweeng and Donoghmore. A similar pattern is seen when considering the cumulative impacts, inclusive of other permitted windfarms.

4.5.13 The report provides an itemised assessment of each of the 18 photomontage viewpoints submitted, and concludes that the proposed development would only have a low/moderate to minor/negligible visual impact on the surrounding landscape to the north, with a slightly greater impact to the east and south.

4.5.14 Ecology, hydrology, and peat stability

4.5.15 Notes the planning authority's Heritage Unit's report on the issue of impacts on Hen Harrier, and agrees with the recommendation that the applicants should be instructed to consult with the NPWS prior to any resubmission. The EIS contains very little information and no impact assessment on other bird species. Further information is also required in relation to bats.

4.5.16 Notes the recurring reports of flooding 4km downstream of the Glen River. As such, there is potential for impacts downstream from increased surface water runoff from the proposed development.

4.5.17 Notes the Environment report and also the consultant hydrology report. Further information is required on a number of items.

4.5.18 On the issue of peat stability, and given the information contained in the EIS, the residual risks to the geology and hydrology associated with the construction, operation, and decommissioning of the site are considered to be very low and generally acceptable.

4.5.19 The Construction and Environmental Management Plan (CEMP) does not make sufficient provision for monitoring of ecology or hydrology during the pre-construction and construction phase.

4.5.20 Further information is required in relation to the borrow pits.

4.5.21 Shadow flicker

4.5.22 The closest dwellings to the turbines are all stated as being in the family ownership of landowners involved in the project. The next closest house is Dwelling #35 which is approximately 750m from the closest turbine.

4.5.23 In terms of methodology for shadow flicker assessment, the worst case scenario has to be applied, and the Applicants' rationale - the application of a 32% regional sunshine average – should be discounted. Applying a 100% figure, 14 houses would experience exceedances of the annual limit [30 hours], with #35 receiving 70 hours.

4.5.24 In terms of daily exposure, 18 properties would experience levels of shadow flicker in excess of the WEG threshold of 30 minutes per day, of which 3 are connected with the proposal. Notes the proposal to turn off turbines to achieve compliance. However given the number of dwellings affected and the notable exceedance of limits, further information should be requested in order to further assess these limits.

4.5.25 Figure 4.7 indicates the locations of the dwellings, but does not indicate the turbines. As such, a new layout should be submitted to show locations of all turbines in relation to the affected houses, indicating distances between each of the turbines predicted to cause shadow flicker and the affected houses.

4.5.26 Noise

4.5.27 The proposed development would appear to be compliant with the current requirements of the WEG. Notes that the current WEG review consultation document indicates absolute noise limits of 40dB(A). While this is currently at consultation, it is noted that this limit would be exceeded at 9 properties. However, the EIS states that once due consideration is given to wind directivity, the levels drop to or below 40dB(A).

4.5.28 Further information is required on the issue of noise from the perspective of baseline monitoring.

4.5.29 Other issues

4.5.30 Further information is required on the issue of additional traffic loading, as per the Road Engineer's report.

4.5.31 Further information is required on a number of additional matters, which are reflected in the planning authority's further information request.

4.5.32 Subject to condition, there would be no adverse impact on archaeology.

4.5.33 Public submissions on cumulative impacts are noted. On the issue of alternatives, extending the permitted windfarm to the south-west would contain the cumulative visual impact, reducing the impact to the east. This would however result in turbines being located in closer proximity to the Boggeragh Mountains, which are designated as an SPA for Hen Harrier.

4.5.34 Environmental Impact Assessment

4.5.35 The report incorporates an EIA of the scheme which concludes that there are shortcomings in the information available, but not such that would render the EIA deficient in legal terms.

4.5.36 Recommendation

4.5.37 Recommends further information on a number of issues, as reflected in the further information request. See Section 3.4 above.

4.6 SENIOR PLANNER'S FIRST REPORT (PAGES 61-63)

4.6.1 Notes the reports and consultations on file. Refers to the Area Planner's report [see above] for a comprehensive overview of issues, submissions, policy, and assessment.

4.6.2 Concludes that the proposed development is associated within and adjacent to a Strategic Search Area, and as such is considered acceptable in principle. Significant issues have been identified. The EIS cannot be determined without further information.

4.6.3 Recommends that the application be deferred.

4.7 DEPARTMENTAL REPORTS FOLLOWING FURTHER INFORMATION SUBMISSION

4.7.1 Environment (pages 67-71)

4.7.2 The report individually addresses the 6 areas identified by the previous Environment Report as requiring further information. In all instances, the report comes to a favourable assessment.

4.7.3 No objections subject to conditions. Recommends conditions relating to noise levels and construction management.

4.7.4 OCM drainage report (separate report)

4.7.5 The planning authority requested O'Callaghan Moran & Associates Environmental Consultants (OCM) to review and assess the additional information response.

4.7.6 The report infers that OCM had previously reported to the planning authority, recommending further information on a number of matters which are reflected in Item 11 of the further information request.

4.7.7 Further information item 11.2 acknowledges that there was an error in the EIS on the issue of run off calculations, and states that this was a typographical error. Having reviewed Appendix 11-1, OCM are satisfied that the matter has been fully addressed and that the response is satisfactory.

4.7.8 On the issue of groundwater infiltration of the borrow pits – Item 11.5 of the further information response – OCM are satisfied with the proposed arrangements; controlled pumping of accumulated groundwater via sediment attenuation ponds.

4.7.9 Potential issues in relation to hydromorphology and construction impacts have been mitigated either by design or the application of best practice.

4.7.10 The report notes the environmental monitoring programme. In conclusion, OCM consider that the issues in relation to Geology, Hydrology, and Hydrogeology have been satisfactorily addressed in the NIS.

4.7.11 Ecologist (Pages 72-90)

4.7.12 *General issues*

4.7.13 In a general sense, the Ecologist states that the development is proposed to be located over a modified landscape comprising primarily of mature conifer plantation which is a habitat type of relatively low ecological value. The ecologist is satisfied that the loss of habitat which could arise would not constitute a significant negative impact on the environment.

4.7.14 The report notes the 4 points raised in the initial Ecologist report (see Section 4.2.10 above), which were reflected in items 5-8 of the further information request, and the responses to these issues from the applicant (See Section 3.4 above). The ecologist provides a detailed response to the submission on each point.

4.7.15 *EIS addendum*

4.7.16 The Ecologist notes the EIS Addendum which describes the proposed route for the laying of an underground grid connection, and notes that this element of the project was previously assessed by the planning authority as part of a Section 5 declaration. The ecologist is satisfied that no potential for significant impacts on habitats, flora, fauna, or water quality would arise.

4.7.17 *Revised NIS*

4.7.18 Section 1 of the report consists of a Habitats Directive Assessment, which effectively shadows the structure of the NIS and concurs with its conclusions. The ecologist concurs with the decision to 'screen in' the Blackwater River SAC and Mullaghanish to Musheramore SPA for Stage 2 AA. The ecologist explicitly states that they are satisfied that the proposed development would not give rise to adverse effects on the integrity of the SAC.

4.7.19 The report notes that potential for the development to give rise to significant negative impacts on the Mullaghanish to Musheramore SPA are 'screened in' on the basis of collision, disturbance, and displacement risks, but that the NIS concludes that adverse effects on the integrity of the SPA can be ruled out when mitigation measures are taken into consideration.

4.7.20 *Hen Harrier and consideration of SPA*

4.7.21 The ecologist discusses the response to Item 5 of the further information request. Hen Harrier are known to display significant avoidance behaviour around windfarms, and it is generally accepted that suitable foraging habitat within 250m of any turbine will become unavailable to this species for the lifetime of the windfarm. As requested, the applicant has assessed the extent of suitable foraging habitat available to hen harrier within 250m of the turbines. The loss amounts to 3.1% of the available habitat of the pair which attempted breeding within the site in 2014 and 1% of the habitat of the only other pair considered to hold territory over the site.

4.7.22 The ecologist concludes that the potential for development to give rise to impacts could be significant when considered cumulatively with 3 other permitted windfarms in the Boggeragh Mountains.

4.7.23 On the issue of the SPA, the ecologist concludes that the construction and operation of turbines 10 and 13 could pose a significant risk of disturbance to breeding hen harrier as this area comprises recently planted conifer plantation, which will close over in coming years, and become unsuitable as a nesting location for Hen Harrier. The ecologist recommends that permission for these turbines be subject to a condition delaying their construction until such time as this canopy closes over. In addition, there should be a requirement for pre-season bird monitoring of the entire site before construction commences and that there be a restriction on construction activity within 500m of any nest site. Post construction monitoring would also be required.

4.7.24 The ecologist notes the proposed mitigation measure of managing alternative areas of otherwise unsuitable habitat within these territories over the life of the windfarm. The applicant states that the relevant approvals from landowners have been secured, although no verification of same has been provided. These areas are outside the development boundary and are privately owned, and in the absence of verification that this land would be in the long term control of the applicants, a Section 47 Management agreement would be required. Subject to these requirements, the ecologist is satisfied that the development would not give rise to adverse effects on the integrity of the SPA.

4.7.25 *Other bird species*

4.7.26 The ecologist discusses Item 6 of the response to the further information request. Information has been provided in respect of other species, such as Red Grouse, Snipe, Kestrel, and Sparrowhawk. The ecologist concurs with the assertions that the risk of collision between Red Grouse and windfarms is not an issue of concern and that this species appears not to be vulnerable to avoidance behaviour.

4.7.27 Collision and avoidance risk for Sparrowhawk and Kestrel is stated as being low. The applicant nevertheless is proposing to erect 3 Kestrel nest boxes to mitigate for the loss of suitable foraging habitat.

4.7.28 The ecologist recommends that a condition should be imposed restricting the timing of all felling works to ensure that these take place outside the bird breeding season.

4.7.29 *Bats*

4.7.30 The ecologist discusses Item 7 of the response to the further information request. No information has been provided identifying known commuting routes, but the applicant has responded by submitting a map identifying 50m buffers on all tracks, treelines, and hedgerows, and have taken a precautionary approach by assuming that any of these features could be used by commuting backs. The further information submission rules out any potential for the development to give rise to significant impacts on bats.

4.7.31 *CEMP*

4.7.32 The ecologist discusses Item 8 of the response to the further information request. The Ecologist notes the contents of the revised draft Construction Environmental Management Plan, and considers that there are anomalies between the commitments listed as set out in the draft CEMP and those listed in Table 7.1 of the draft CEMP Schedule of Monitoring Measures. These

anomalies would need to be corrected by way of submission of a revised CEMP if it is decided to grant permission.

4.7.33 *Freshwater pearl mussel*

4.7.34 The ecologist notes submissions from members of the public about possible implications for a population of Freshwater Pearl Mussel which has been recorded as occurring in a small stream at Ballybogh, within the subcatchment of the Glashaboy River, which is within the Blackwater Catchment. A very minor element of the project (part of the site access) lies within the catchment of this stream. Having regard to the scale of development and to the measures proposed to ensure the protection of water quality, the ecologist is satisfied that the proposed development does not pose a significant treat to this population of FPM

4.7.35 *Conclusion*

4.7.36 Subject to verification that mitigation lands would be under the control of the developers for the lifetime of the windfarm, and an agreement to this effect, there is no objection subject to 5 conditions [which are reflected in the planning authority's ultimate conditions].

4.7.37 Roads (Pages 91-97 and 98-104)

4.7.38 There are two reports on file from the Kanturk Mallow Municipal District Roads Office following the further information response. Both appear to be identical and signed by the same author, albeit that one is dated a day later than the other.

4.7.39 The report notes that the NRA reiterate their original observations, while drawing attention to national road concerns.

4.7.40 The report reiterates concerns regarding the impact of development traffic on roads that are unsuited to such loading. Some repair and remedial measures will be required on elements of the proposed routes prior to and during the construction phase.

4.7.41 Significant post-construction works will be required. In addition, local traffic will reroute to avoid construction activities, putting additional loading on the surrounding road network. For this reason, a special contribution should be paid (calculations given).

4.7.42 The report notes the reference to the grid connection. While it is not part of the current application, the Roads Office feels that the provision under the Road Opening License procedures are adequate to address concerns in this area.

4.7.43 The report recommends a number of additional requirements that should be met by the applicant, which are reflected in 10

recommended conditions. The overall recommendation is to grant subject to conditions.

4.8 AREA PLANNING OFFICERS' SECOND REPORT (PAGES 105-146)

4.8.1 Reduction in turbines sought

4.8.2 The planning officer notes that 'the dynamics of this current application have changed' and that the 8 western turbines are being omitted by the applicants, and that this application is now dealing only with the 6 eastern turbines. Essentially, this is now an extension to an already permitted development.

4.8.3 Freshwater Pearl Mussel

4.8.4 The planning officer notes the submissions from the public on possible implications for a population of FPM which has been recorded as occurring in a small stream at Ballyboght. The planning officer notes that on this issue, the planning authority's ecologist is satisfied that the proposed works to not pose a significant threat.

4.8.5 Grid Connection

4.8.6 Notes the addendum to the EIS on this issue, and states that the approach taken is considered a reasonable one. The addendum details the proposed grid connection route and each of the revised sections have looked at the potential impacts of the route.

4.8.7 This connection has already been granted an exemption certificate under Section 5 of the Planning and Development Acts, although it is unclear what standing this declaration has following the O'Grianna high court ruling.

4.8.8 Further information submission

4.8.9 The planning officer works through the 11 items requested by way of further information, and the responses to these requests. The planning officer provides summaries of the responses and, refers to technical reports on these matters, and provides an assessment, which can be summarised as follows. See Section 3.4 above for information on the further information request itself and the responses from the applicant.

Further information item.	Planning officer assessment
Item 1 – Roads	Notes the report of the Area Engineer.
Item 2 – Tele-communications	There is no further issue subject to standard conditions.
Item 3 – Shadow Flicker	The figures from the Wind Energy Guidelines are only guidelines, and do not form national policy objectives. While it appears highly unlikely that shadow flicker would be an issue (given distance from 3rd party properties), a condition should be attached relating to acceptable limits of flicker. In the event that any breaches occur, the developer would need to take limiting measures.
Item 4 – Visual Impact Photomontages	Revised photomontages considered acceptable.
Item 5 – Hen Harrier	Notes the report of the planning authority's Ecologist, and concurs with the recommendations.
Item 6 – Other Bird Species	Notes the report of the planning authority's Ecologist.
Item 7 – Bats	Notes the report of the planning authority's Ecologist.
Item 8 – CEMP	Notes the report of the planning authority's Ecologist. The applicants will be required to submit a further revision, should permission be granted.
Item 9 – Noise	Notes the further information submission.
Item 10 – Removal of redundant cables	Note that the Environment Officer is satisfied with the approach taken.
Item 11 – Drainage	It is the planning authority's expectation that the borrow pits would be filled to a level so that no permanent scar on the landscape remains, although this can be addressed through a revised CEMP. Notes the report from OCM on the issue of drainage. The proposed pumping of borrow pits is considered to be acceptable mitigation. Impacts on surface water and groundwater are mitigated by both design and avoidance.

Table 4

4.8.10 EIA

4.8.11 The planning officer's report undertakes an EIA of the scheme, working through the various topics of the EIS under the following headings.

- Identification of the likely significant direct and indirect effects of the project on the environment.

- Assessment of the likely significant effects identified, having regard to the mitigation measures proposed.

- Interaction

- Residual Effects

- Adequacy of the Environment Impact Statement

4.8.12 Conclusion and recommendation

4.8.13 The planning officer recommends a grant of permission subject to 39 Conditions.

4.9 SENIOR PLANNER'S SECOND REPORT (PAGES 147-172)

4.9.1 The Senior Planner's report references much that is also contained in the planning officer's report, departmental reports, and in the Applicants' response to the further information request, and concurs with the assessment and recommendation of the planning officer.

4.9.2 Recommends a grant of permission subject to 41 conditions, including an additional special contribution condition, as per the Area Engineer's report.

5.0 PLANNING AUTHORITY DECISION

5.1 FURTHER INFORMATION REQUEST

5.1.1 Prior to deciding the application, the planning authority requested further information on 11 issues, which can be summarised as follows. Many of the items can be traced back to departmental reports or submissions from external consultees. The entirety of the further information request and subsequent response is replicated in section 3.2 above.

Item 1 – Roads
Item 2 – Telecommunications
Item 3 – Shadow Flicker
Item 4 – Visual Impact Photomontages
Item 5 – Hen Harrier
Item 6 – Other Bird Species
Item 7 – Bats
Item 8 – CEMP
Item 9 – Noise
Item 10 – Removal of redundant cables

Item 11 – Drainage

5.2 DECISION

5.2.1 The planning authority granted planning permission subject to 41 conditions. The most significant of these can be summarised as follows.

2 10 years to implement permission

3 25 year operational period.

4 Construction of Turbines T10 and T13 and associated infrastructure and access roads shall not commence until such time as the canopy of conifer plantation in the area between these turbines is closed and this area no longer suitable to be used as breeding habitat by Hen Harrier.

5 Prior to construction works being carried out between mid-March and mid-August, a survey for breeding hen harriers shall be carried out by a competent, experienced ornithologist. The survey will cover the area within a boundary of 500m of the works to be carried out during the above period. It will be the responsibility of the ornithologist, based on his or her experience and/or professional opinion, to ensure that the survey methodology is sufficient to ensure that a hen harrier breeding site will not be overlooked. Taking into account the results of this survey no construction works shall be carried out during the above period within 500m of a pre-nesting breeding site and/or nest.

6 Prior to the commencement of development, the developer shall submit a programme for post construction monitoring of this site, and the mitigation foraging habitat sites for Hen Harrier, which shall be agreed in writing with the Planning Authority. This plan shall be prepared in accordance with Scottish Natural Heritage Guidelines, and shall provide for comparative monitoring at a baseline site, and for carcass searches. This plan should be prepared by a suitably qualified/experienced ornithologist and should provide for monitoring by a suitably qualified/experienced ornithologist.

7 All mitigation measures from the EIS and NIS to be implemented in full.

8 Prior to any development commencing, an agreement shall be entered into committing to the management of the habitat mitigation areas identified on the submitted Hen Harrier Foraging Mitigation areas Map No. Figure 5.2.2 habitat map (received by the Planning Authority on the 16/04/2015) for the operational period of the wind farm. Before the development

herein permitted commences, or, at the discretion of the Planning Authority, within such further period or periods of time as it may nominate in writing provision to this effect shall be embodied in an agreement between the landowner and the Planning Authority pursuant to Section 47 of the Planning and Development Act, 2000.

9 Maintain 10m buffer to the identified limekiln.

9/11/12/13 Relate to archaeology

14-18, 23 Relate to construction management, and the submission of a new CEMP.

19 Relates to decommissioning

20/21 Relate to aeronautical and aviation requirements

22 The BATNEEC principle shall be applied to the selection process for turbines for the site, to ensure that the noise levels are minimised.

24 Sets noise limits for construction phase.

25 Sets noise limits for operational phase. (noise levels emanating from the proposed development when measured at the nearest inhabited house shall not exceed:

(i) 40 dBA (15 minutes Leq) at wind speed of 5 metres/second

and

(ii) 45 dBA (15 minutes Leq) at wind speed in excess of 10 metres/second.)

Item c of this condition requires that within 6 months of commissioning of each phase, the developer undertake noise measurements in the vicinity of the 12 nearest occupied houses and that the results be forwarded to the planning authority. Should any phase of the development fail to meet this limit, that phase shall be stopped until written agreement with the planning authority is reached on design, power output modulation, or operational alterations to be put in place to ensure the reduction in noise output to meet the limits set out in the condition.

27-31,34,35 Relates to construction access routes.

36,37 Relates to impacts on telecommunications.

39 Shadow flicker at surrounding dwellings shall not exceed 30 hours per annum or 30 minutes per day. In the event of this limit being exceeded the operation shall cease until mitigation measures have been agreed in writing with the Planning Authority.

40, 41 Bond and financial contribution.

6.0 HISTORY

6.1 ON THIS SITE

6.1.1 Historic permissions

PA Ref. 02/2553 – Permission granted for 7 turbines (10 sought initially) in the southern portion of the site. Extension of duration granted under PA Ref. 08/6073 until April 2012.

6.1.2 Parent permission

PL04.240281 (PA Ref. 11/05276) – Permission granted by the board for development of a windfarm of 12 turbines subject to condition omitting 4 no. turbines (T7, T8, T11 and T12), resulting in a permitted scheme of 8 turbines.

6.1.3 Referral on modifications to original permission

PL04.RP2104 - Referral to the board on point of dispute in relation to compliance with condition 6(a) of PL04.240281. This referral was taken under Section 34(5) of the Planning and Development Act 2000 (as amended) which makes such provision as follows.

> *(5) The conditions under subsection (1) may provide that points of detail relating to a grant of permission may be agreed between the planning authority and the person carrying out the development; if the planning authority and that person cannot agree on the matter the matter may be referred to the Board for determination.*

Condition 6(a) of the parent permission reads as follows.

> *Details of the permitted turbines and associated structures, including design, height and colour, shall be submitted to, and agreed in writing with, the planning authority. Cables from the turbines to the substation shall be run underground within the site. The wind turbines shall be geared to ensure that the blades rotate in the same direction.*

Two questions were posed namely whether it is permissible to install a different wind turbine other than that envisaged under the terms of the permission. Secondly, the question is posed as to whether two specific turbines types Enercon E92 and Nordex N90 may be installed. Both of

the alternative turbine types differ from that indicated in the application and appeal in terms of blade length and hub height but do not exceed the overall ground to tip height. The differences in hub height and blade length in question were in the order of 5m.

The board determined that the alternative turbine types are within the terms and conditions of the permission. This decision was issued by the board on 16th October 2014. In the context of the current case, this was after the request for further information, but before the submission of the response to that request.

6.1.4 Anemometry mast

PA Ref. 14/4829 - 10 year permission granted for an anemometry mast of 80m to form part of previously approved windfarm development.

6.1.5 Cable route

PA Ref. D/226/13 – 'Section 5' exemption (under Class 1 of Schedule 2 of Part 1 of the Planning and Development Regulations 2000 [sic] (as amended)) for the development of an underground cable connection from the Esk South 38kV station to the Boggeragh. A copy of the order is available in Appendix 3 of the EIS. The orders states that the proposed development is not considered to be affected by the restrictions on exempted development set out in Article 9(1)(a)(vii)/(viib)

6.2 OTHER WINDFARMS IN THE AREA

6.2.1 A comprehensive overview of the complex planning history of the surrounding area can be gleaned from referencing the planning officer's report, the applicant's submissions, and from previous inspectors' reports in the area. The table below provides an overview, and is followed by details, as are available.

6.2.2 In all instances, these histories refer to schemes that were granted permission. There is no evidence of any windfarms having been refused permission.

6.2.3 In considering the details below, it is useful to cross reference this information with Figure 21 of the EIS. I have used Figure 21's colloquial names for the windfarms / windfarm clusters where appropriate.

Known as (as per EIS Fig 21)	PA Ref.	ABP Ref.	# Turbines sought/ permitted	Distance from subject site + status	Referenced by Applicant /PO
Boggeragh Phase 1 (19)	01/1248	130546	20/19	9km W Operational	Yes/No
	08/5944	-	EOT		No/Yes
Boggeragh Phase 2 (11) (SW Cluster[2])	03/4181	-	10/10	8km W Constructed	Yes/No
	10/8067	239775	38/26		Yes/Yes
Boggeragh Phase 2 (5) (N Cluster)				6km W Under construction	
Boggeragh Phase 2 (10) (E Cluster)				2.5km S Under construction	
Carrigcannon (10)	03/4181	-	10/10	9km W Constructed	No/Yes
	09/4564	-	EOT		No/Yes
Carriganimma	07/4102	-	6	18km SW Constructed	Yes/No
Burren	01/6529	-	7	13km SW Constructed	Yes/No
Knockavadra	12/6636	-	1	<1km SE Not built	Yes/Yes

Table 5

6.2.4 Boggeragh Phase 1 (19)

PL04.130546 (PA Ref. 01/1248) - Permission granted on appeal to Green Energy Co. Ltd. for 19 turbines with hub heights of 80m, and tip height of 120m. This wind farm is currently operational.

6.2.5 Boggeragh Phase 2

PA Ref. 03/4181 – Permission granted to Dermot O'Connor for 10 turbines in the Southwest Cluster of the larger permission referred to below

PL04.239775 (PA Ref. 10/8067) – Permission granted to Green Greenway renewable energy/Coillte Teoranta for 26 turbines (38 had been sought) across 3 clusters – southwest, north, and east (as per inspector's convention). The southwest cluster appears to have covered the footprint of the previous

[2] Cluster names for Boggeragh Phase 2 as per the convention used in Section 1.5 of the Inspector's report under PL04.239475.

permission under 03/4181 above. The maximum tip height of the permitted turbines is states as 136.5m. The site incorporates parts of the townlands of Ballynagree East, Carrigagulla, Annagannihy, Knocknagoun, Kilcullen North, Barrahaurin, Commeenaplaw, Meenahony, Gowlane North, Carrigduff, Crinaloo South, Inchamay South, Glenaneatnagh South, Nadanuller Beg and Knock. At the time of my site inspection, it appeared that this scheme was in various stages of construction.

6.2.6 Carrigcannon

PA. Ref 03/4181 – Permission granted for 10 turbines. Extension of duration subsequently granted under 09/4564. This scheme had been constructed at the time of my site inspection.

6.2.7 Carriganimma

PA Ref. 07/4102 – Permission granted to Carriganimma Community Wind Farm Ltd. for 6 turbines. This wind farm has been constructed.

6.2.8 Burren

PA Ref. 01/6529 - Permission granted to Michael Murnane for 7 turbines. An Application for an extension of duration for completion of the wind farm was granted to Burren Energy Ltd. c/o Kevin Brogan in June 2008. This wind farm has been constructed.

6.2.9 Knockavadra

PA Ref. 12/6636 – Permission granted for a single turbine of 88m tip height to the immediate southeast of the site, on the lower slopes of this massif. As such, it would be visible in conjunction with the proposed development when viewed in close proximity from the east and south. Initially, this turbine was not incorporated into the EIS, but on foot of the planning authority's further information request, the EISA and revised photomontages were amended.

6.3 NON-WIND APPLICATIONS IN THE STUDY AREA

The EIS (section 2.2.1) includes details of domestic and agricultural applications in the vicinity, although I do not consider these to be of any specific relevance to the subject case.

7.0 POLICY

7.1 NATIONAL LANDSCAPE STRATEGY

7.1.1 Following a period in draft format, this document was issued by the DoAHG on 26th May 2015. It does not make any reference to windfarms, nor does it have a spatial component. It does include an objective to prepare a national landscape character map, along with other subsequent actions, at a later date.

7.2 WIND FARM DEVELOPMENT: GUIDELINES FOR PLANNING AUTHORITIES, 2006

7.2.1 These Guidelines offer advice to planning authorities, are intended to ensure a consistency of approach throughout the country in the identification of suitable locations for wind energy development and the treatment of planning applications for wind energy developments. Some of the main topics covered are as follows:-

- The need to identify suitable areas in development plans;
- Making and assessment of planning applications, including suggested conditions.
- The siting and design of wind farms including advice for different types of landscapes.
- Visual impact is among the more important considerations and advice is given in chapter 6 on spatial extent, spacing, cumulative effect, layout and height. There is an emphasis on the distinctiveness of landscapes and their sensitivity to absorbing different types of development
- Chapter 5 addresses the environmental implications of wind farm developments and in particular the impact on designated sites, habitat and species. The bird species considered most at risk are raptors, swans, geese, divers, breeding waders and waterfowl, with migratory birds and local bird movements also important. The impact on other species, particularly those listed for protection, needs also to be assessed.
- Other impacts on human beings such as noise and shadow flicker. The guidelines include specific standards on these issues, as discussed in Sections 11.10 and 11.11 below.

7.3 REGIONAL PLANNING GUIDELINES FOR THE SOUTH-WEST REGION 2010-2022

Section RKI-01 sets out Key Issues for the region. Item 10 states that

> *"The South West Region has significant natural resources (renewable energy, primary production), the value and potential of which for economic development have not been fully realised. This provides a major opportunity for the future development of sustainable rural economies and tourism."*

Section 5.6.30 states that

> *"Demand for electricity in the region is expected to rise by 60% by 2025. Wave and wind technologies together with bioenergy*

resources are expected to play a significant part in meeting additional demand with excess renewably generated power being exported through an enhanced transmission grid to other regions within the state."

These principles are also reflected in RTS-09, which further states that the development of wind farms shall be subject to

- the Wind Energy Planning Guidelines
- consistency with proper planning and sustainable development
- criteria such as design and landscape planning, natural heritage, environmental and amenity considerations.

There is no spatial component to the RPGs on the issue of Wind Energy.

7.4 CORK COUNTY DEVELOPMENT PLAN 2009 (SUPERSEDED)

This plan was in place at the time the application was made, and during the first round of planning authority reports.

This plan designated a 3 tier spatial strategy countywide by way of 'Strategic Search Areas', 'Strategically Unsuitable Areas', and areas designated as neither. Figure 6.3 shows the Strategic Search Areas as being located in clusters to the northwest, east, and centre of the county, including a cluster focussed on the Boggeragh Mountains.

It is not clear from the scale and geographic reference points of Figure 6.3 how this designation relates to the subject site, although in note that the planning officer's first report states that the site lies 'lay adjacent to and within' a 'Strategic Search Area' for Wind Farm Development as outlined in the plan. I have performed a crude 'lightbox' exercise, and it would appear that parts of the eastern part of the subject site lie within a 'Strategic Search Area', perhaps an area covering the 3 easternmost turbines.

Objective INF 7-4 of the plan covered Wind Energy Projects, stating (inter alia) that

(a) It is an objective to encourage prospective wind energy businesses and industries….

(c) It is an objective in the strategic search areas (and in those areas that are identified as neither strategic search areas nor strategically unsuitable areas), to consider new, or the expansion of existing, wind energy projects on their merits having regard to normal planning criteria including, in particular, the following [lists criteria].

The policy provides Note on Strategic Search Areas stating (inter alia that these areas 'have both relatively high wind speeds and relatively low landscape sensitivity to wind projects.'

7.5 CORK COUNTY DEVELOPMENT PLAN 2014

The 1st party appeal says the 2014 plan was adopted on 4th March 2015, around 2 weeks before the submission of the further information. As such, it was in place at the time of the planning authority's decision.

The subject site is sited in an area of the county which is identified in Figure 9.3 of the CDP 2014 as an area where wind energy development is "Open to Consideration", which sits in the spatial hierarchy between 'Acceptable in Principle' and 'Normally Discouraged'. As stated in Section 9.3.14, this designation comprises almost 50% of the county.

Section 9.3.6 of the plan notes that wind farms in the county are currently concentrated in 2 main locations, south of Millstreet in the Derrynasaggart Mountains; east of Millstreet in the Boggeragh Mountains and South of Dunmanway

The specific objective ED3-5, which relates to areas of the county where wind energy developments are open to consideration states that:

"Commercial wind energy development is open to consideration in these areas where proposals can avoid adverse impacts on:

- *Residential amenity particularly in respect of noise, shadow flicker, visual impact;*
- *Urban areas and Metropolitan / Town Green Belts; · Natura 2000 Sites (SPA and SAC), Natural Heritage Areas (NHA's) or adjoining areas affecting their integrity;*
- *Architectural and archaeological heritage;*
- *Visual quality of the landscape and the degree to which impacts are highly visible over wider areas."*

7.6 MALLOW ELECTORAL AREA LOCAL AREA PLAN 2011

This plan defines settlement boundaries for the towns and villages in this part of the county, along with 'green belt' designations. The nearest settlements to the subject site are Glantane and Dromahane to the north, Bweeng to the east, and Lyre to the northwest. There are specific objectives for each of these settlements, but none that directly apply to the subject proposal.

7.7 NATURAL HERITAGE DESIGNATIONS

Parts of the site drain into the Glen River which is adjacent to the site and is part of the Blackwater River (Cork/Waterford) Special Area of Conservation (SAC), site code 002170.

The site is also quite close to the Mullaghanish to Musheramore Mountains Special Protection Area (SPA), site code 004162.

Both these sites are considered further in the AA screening section at 12.0 below.

7.8 OTHER POLICY DOCUMENTS

Further to the above, I note that the planning officer's reports cite 'Europe 2020', the EU Climate And Energy Package 2008, the Irish Government Energy White Paper 2007, National Climate Stage Strategy 2007-2012, National Energy Efficiency Action Plan 2009-2020, The National Renewable Energy Action Plan (NREAP) 2010, National Development Plan, and the Strategy For Renewable Energy.

8.0 GROUNDS OF APPEAL

8.1 Two 3rd party and one 1st party appeals were received.

8.2 3RD PARTY APPEAL – BWEENG TURBINE OBJECTION COMMITTEE (BTOC)

8.2.1 This appeal was submitted by Noonan Linehane Carroll Coffey Solicitors on behalf of Bweeng Turbine Objection Committee, c/o Jackie O'Sullivan, with an address at Bweeng. Bweeng is a small village approximately 2.5km southeast of the easternmost turbine. The appeal is accompanied by a petition of 565 signatures. The grounds of the appeal can be summarised as follows. In the interests of clarity, I will refer to this party in my report as 'BTOC'.

8.2.2 Invalid permission – grid connection

8.2.3 Refers to the High Court decision in Ó Gríanna -v- An Bord Pleanála which states that the development of windfarm must include works necessary to make a connection to the grid. The council wrongly believed that such works were exempt, and issued a Section 5 ruling to this effect.

8.2.4 The applicant is attempting to 'backfill' the application by way of the 'Addendum to the EIS'. This is not in order, as to comply with the Planning and Development Regulations, the application must be accompanied by an EIS. It must also be accompanied by a Non-Technical Summary. The application was therefore invalid.

8.2.5 Invalid permission – 14 to 6 turbines

8.2.6 In replying to the request for further information, the applicant sought to make fundamental changes to the application [from 14 to 6 turbines] on the basis that the board had given the applicant comfort in relation to the 8 turbines previously permitted.

8.2.7 This radical change imports a fatal conclusion into the application process. The project should be the subject of a fresh planning application.

8.2.8 Renewable energy policy - general

8.2.9 The planning code reconciles competing interests by, for example, zoning residential and heavy industrial areas separately. Incompatible uses should be kept apart. Such principals should apply here.

8.2.10 National and European policies relating to renewable energy do not negate essential planning principles.

8.2.11 Refers to (and quotes from) the High Court case of People Over Wind -v- An Bord Pleanála where the judge said that the primary objective of the application for a windfarm was that of a commercial enterprise, and that the public benefit to the state would seem secondary. As such, no favourable status should be conferred in the planning process to wind turbine operators or developers.

8.2.12 The National Renewable Energy Action Plan (NREAP) was not subject to SEA. This was the subject of an adverse finding by UN-ECE.

8.2.13 The State's targets on renewable energy can be met through diverse paths, rather than a reliance solely on wind turbines.

8.2.14 County Council planning policy

8.2.15 The board should have regard to a number of policies of the County Development plan [cites RCI1-1, RCI2-2, SC-5-4, SC5-5, EE9-1, TO-1, TO2-1, TO7-1]

8.2.16 Appropriate Assessment

8.2.17 The site is adjacent to – and hydraulically connected with - the Blackwater River cSAC and is within 12km of the Mullaghanish to Musheramore Mountains SPA. There must be no reasonable scientific doubt over whether the integrity of these sites will not be affected. This test cannot be met on the basis of the information presented by the applicant.

8.2.18 EIA – inadequate information

8.2.19 The applicant has provided limited information under the headings of public safety, noise, health, and other topics. For this reason, the board cannot complete an EIA.

8.2.20 Public safety

8.2.21 The appeal cites a number of documents regarding potential scenarios whereby risks to public safety could arise, such as fire, lightening, ice shedding, blade throw, etc.

8.2.22 Impacts on amenity of local residents - Noise

8.2.23 Refers to the inspector's report under PL04.243630 in Ardglass, Co. Cork, which was considered to be a 'low noise area'. The area of the subject appeal is also a low noise area.

8.2.24 The proposed development would destroy the peaceful rural tranquillity in which the appellants live their lives.

8.2.25 There is complete vagueness – see Page 7 of the addendum to the EIS – about which turbines are in fact going to be built. The Applicants' acoustic consultations made noise predictions based on a Nordex N100 2.5MW turbine, but the applicant makes it clear that they regard themselves as free to use a completely different model of turbine if necessary.

8.2.26 The only real turbine parameters to which they are committed relate to matters such as hub height and blade length. Everything else is open, including maximum power output, of which noise is a function. The assurance that whatever may eventually be built will not be significantly different in noise terms would be completely unenforceable. This level of latitude would not be afforded to someone seeking to build a house.

8.2.27 In a recent planning application for the Shehy More area, the planning authority asked the developer to fully document and substantiate the noise predictions for the same model of turbine. The developer declined, saying that its noise consultant is unable to supply noise test reports because of a non-disclosure agreement. As such, information which the planning authority regarded as being necessary for it to review is being withheld, even though it exists. This same difficulty arises in the subject case.

8.2.28 Refers to problems of noise measurement standards due to qualitative aspects of noise profiles from wind turbines, and refers to documents on this topic.

8.2.29 Nosie from windfarms affects sleep patterns.

8.2.30 Impacts on amenity of local residents – health and wellbeing

8.2.31 Nearby residents have abandoned their homes following the commencement of operations of turbines approximately [5km] from the subject site. This has happened in other countries too, with legal cases ensuing.

8.2.32 The Scottish Government commissioned a review into the accuracy of impact predictions made on behalf of wind farm developers to compare them with the reality experienced by neighbours once the wind farms are operating. This study found impacts far greater than predicted, particularly in relation to noise and shadow flicker.

8.2.33 Refers to impacts from low frequency noise, and an American paper on this issue. The applicant has not presented the board with information on low frequency noise. Infrasound is also an issue.

8.2.34 Refers to health impacts of wind turbine noise generally, and papers from Sweden and Australia, and to a technical report from the European Environment Agency.

8.2.35 It is an objective of EU policy to preserve quiet areas such as this, as reflected in the EU Noise Directive.

8.2.36 Draft Wind Energy Guidelines

8.2.37 The public and other stakeholder are waiting for revised guidelines from the Department [of Environment etc.] on issues including noise and shadow flicker for over 18 months. The existing 2006 Guidelines are not fit for purpose. The proposed development should be refused based on the standards set out in the Draft Guidelines.

8.2.38 Impacts on flora and fauna

8.2.39 The site is a breeding ground for Hen Harrier and provides foraging for other protected species such as Kestrel and Sparrowhawk.

8.2.40 The site is upstream of and hydraulically connected to the pristine waters in which some of Ireland's remaining freshwater pearl mussel manage to thrive.

8.2.41 The developer has not shown any legal entitlement to use the proposed alternative habitat.

8.2.42 Enclosures

8.2.43 The appeal is accompanied by 15 separate enclosures, many of which are academic papers and other documents supporting the assertions made in the body of the appeal.

8.3 3RD PARTY APPEAL – GLOUMINANE RESIDENTS

8.3.1 This appeal was submitted by Michelle Duggan and Padraig Cronan, James Duggan, and Joan Duggan, with an address of Glouminane, Lombardstown. I cannot locate Glouminane, but there is a townland shown variously in mapping as Glanminnane and Glounminane to the immediate north of the subject site's north-western turbine cluster. The grounds raised in this appeal can be summarised as follows.

8.3.2 At a local meeting held in Nad regarding the prosed windfarm, there was no photomontage from a nearby view, i.e. the Glouminane/Laharn Road. There were several photomontages from the Nad/Banteer area, but none from the appellant's side of the hill. There should have been views from nearby locations.

8.3.3 The proposed development would mean bigger turbines, which would be more imposing. Queries whether the larger turbines would increase noise and shadow flicker.

8.3.4 Expresses concern over the number of turbines being built in the area. Permission has been granted for 26 turbines in the area southeast to southwest of the subject site, which would mean 40 turbines to be built. There are already 20 turbines in the vicinity.

8.3.5 The appellants run a [horse] training facility, and raise concerns on the effects of turbines on their business. Refers to a joint submission to the DoE's proposed revisions to the 2006 Wind Energy guidelines from the Irish Thoroughbred Breeders' Association, the Irish Jockeys Association, the Irish Racecourse Trainers Association and the Association of Irish Racehorse Owners. The appeal includes enclosures to this effect.

8.3.6 Raises additional concerns about health effects, impacts on groundwater, devaluation of property, and drainage.

8.4 1ST PARTY APPEAL

8.4.1 The first party appal against conditions 3 and 4 of the planning authority's decision was submitted by McCarthy Keville O'Sullivan Planning and Environmental Consultants on behalf of the applicant, Stacks Mountain Windfarm. It can be summarised as follows.

8.4.2 Condition 3 – Operational Period and decommissioning

8.4.3 Condition 3 of the planning authority's decision reads as follows.

> *'The operational period shall be for a period of 25 years from the date of commissioning of the wind farm.*

On full or partial decommissioning of the wind farm or if the wind farm ceases operation for a period of more than one year, the masts and the turbines concerned including foundations and all associated works shall be removed and all decommissioned structures shall be removed within three months of decommissioning and the site restored to the satisfaction of the Planning Authority unless, prior to the end of the period, planning permission shall have been granted for their retention for a further period'

8.4.4 The applicant does not have any issue with the mandated operational period of 25 years, which is a standard condition, but rather with the requirements for decommissioning. The scale of the infrastructure required to be removed is excessive and may in itself give rise to additional unnecessary environmental impacts. The standard wording previously applied by the board refers to the *'towers, turbines and metrological mast'* only. The applicant suggests that this approach would be appropriate.

8.4.5 The decommissioning program proposed is set out in full in Section 3.10 of the EIS, and relates to the above ground turbine components only, not the removal of turbine foundations or roads. Leaving the turbine foundations in situ is considered a more environmentally prudent option. It is proposed to cover them with earth and re-seed as appropriate.

8.4.6 On the issue of roadways, several of these are in use by landowners and for public recreation. The decommissioning program does not envision the removal of these.

8.4.7 Condition 4 – delayed construction of T10 and T13

8.4.8 Condition 4 of the planning authority's decision reads as follows.

'Construction of Turbines T10 and T13 and associated infrastructure and access roads shall not commence until such time as the canopy of conifer plantation in the area between these turbines is closed and this area no longer suitable to be used as breeding habitat by Hen Harrier.'

8.4.9 While it is acknowledged that the site is within an area with traditional breeding grounds for Hen Harrier, that breeding activity was recorded in the central part of the extension area in 2014. The evidence from bird surveys undertaken in 2014 indicate that a next site is located in the area between T10 and T13. It is contended that Condition 4 is excessively prescriptive considering the requirements of Condition 5.

8.4.10 Condition 5 of the planning authority's decision reads as follows.

'Prior to construction works being carried out between mid-March and mid-August, a survey for breeding hen harriers shall be carried out by a competent, experienced ornithologist. The survey will cover the area within a boundary of 500m of the works to be carried out during the above period. It will be the responsibility of the ornithologist, based on his or her experience and/or professional opinion, to ensure that the survey methodology is sufficient to ensure that a hen harrier breeding site will not be overlooked Taking into account the results of this survey no construction works shall be carried out during the above period within 500m of a pre-nesting breeding site and/or nest.'

8.4.11 Condition 5 will ensure that that there is no disturbance of any breeding Hen Harrier during construction. In addition, the 'Hen Harrier Foraging Habitat Mitigation Plan' which was submitted by way of further information would provide alternative foraging habitat to offset any potential impacts with respect to displacement.

8.4.12 Condition 4, by delaying the construction of T10 and T13 could result in a second construction phase some years following the initial construction stage, would give rise to unnecessary disturbance at this later date.

8.4.13 It should be note that the submission on file from the NPWS did not raise any concerns in relation to the timing/phasing of the construction of any element of the 6-turbine development.

9.0 SUMMARY OF RESPONSES

9.1 PLANNING AUTHORITY

9.1.1 The planning authority have not responded to the issues raised in the appeals.

9.2 1ST PARTY RESPONSE TO 3RD PARTY APPEALS

9.2.1 This submission repeats much of the content of previous submissions on file.

9.2.2 Section 5 of the submission provides a rebuttal of the grounds from the two 3rd party appeals across a range of issues, which can be summarised as follows.

Issue	Michelle Duggan and others	BTOC

Visual Impact	x	x
Health Concerns	x	x
Impact on Equestrian Activities / Livestock, Horses, Pets and Wildlife	x	x
Impact on Water Resources and Drainage	x	
Impact on Property Values	x	x
Validity of permission		x
Planning and Environmental Policy Assessment		x
Impact on Ecology		x
Impact on Duhallow Trail and Amenities		x
Noise Impacts		x
Safety Concerns		x
Impact on Telecommunications.		x
Proposed grid connection		x

Table 6

9.2.3 Points of note in this submission that have not been raised elsewhere can be summarised as follows.

9.2.4 Separation distances

9.2.5 The Duggans [appellants] residences – Houses No. 93 and 94 in the EIS – are located 2,900m from the nearest turbine that is the subject of this application, which is substantially outside the 500m buffer zone for non-contributing landowners. The turbines granted under 11/5276 and PL04.240281 are nearer to the appellants'' houses than the turbines proposed under the current application.

9.2.6 Effects on animals

9.2.7 There is no published scientific research known to the applicant that suggests operational wind turbines have any ongoing effect on the bloodstock industry. There is however research into the effect of noise in general on animals (by Marshall Day Acoustics – cited) that found little response.

9.2.8 Validity of application, grid connection, reduction in turbines, SEA, EIA

9.2.9 Section 5.2.1 of the submission defends the validity of the application with reference to grid connection and the Ó Grianna judgement, and the submission of an EIS addendum to address this issue. The applicant asserts that this approach accords with the ruling delivered in the Ó Grianna case.

9.2.10 Appendix 2 of the submission is a set of plans showing the route of the proposed grid connection.

9.2.11 The applicants also refute the assertion that the re-appraisal of the development as a 6 turbine as opposed to a 14 turbine scheme had the effect of "importing fatal confusion into the present planning application". The further information was readvertised and reopened to public submission.

9.2.12 On the issue of the appellants' assertion that the EIS addendum required a new Non-Technical Summary, the appellant refutes this assertion, but nevertheless provides a revised NTS by way of Appendix 4 of the submission.

9.2.13 The applicant rebuts the assertion that the National Renewable Energy Action Plan required SEA, as it does not fall within the definitions set out in the SEA directive.

9.2.14 Landowner consent for Hen Harrier foraging habitat

9.2.15 On this issue, unsolicited further information was submitted to the planning authority by email providing consent from Coillte for the use of its lands for these purposes. A copy of this email is provided in Appendix 5.

9.2.16 Noise

9.2.17 With reference to the noise issues raised by the appellants, Appendix 6 of the submission consists of a response document from AWN Consulting Ltd.

9.2.18 The condition from the planning authority does not reflect the area's status as a 'low noise environment' as identified in the EIS. The appellant suggests a revised wording for the planning authority's Condition 25 on the issue of noise which would apply a flat 43dB ($L_{A90,\ 10min}$) threshold at night time, a 40dB ($L_{A90,\ 10min}$) threshold in the daytime at windspeeds of 6m/s or less, and a 45dB ($L_{A90,\ 10min}$) threshold in the daytime at windspeeds of 7m/s or more.

9.2.19 The request to monitor noise at 12 locations is excessive.

9.2.20 The appellants raise concerns in relation to a perceived vagueness on the turbine types to be provided on site. The model is to be determined by competitive tender. Appropriately worded planning conditions outlining binding noise limits will ensure the potential noise impacts are comparable to that outlined in the EIS, whatever the model chosen.

9.2.21 The applicant refers to issues of commercial sensitivity around the issue of noise profiles. Appendix A consists of a Technical Data Sheet for Nordex N100/2500, which gives octave sound power levels at different hub heights.

9.2.22 The appellant counters the claim that the board should have regard to the flat 40dBA noise limits contained in the 'Proposed Revisions to Wind Energy Development Guidelines 2006 – Targeted Review', as this is merely a consultation document. Nevertheless, it has been demonstrated that the site in question has the potential to comply with these espoused criteria.

9.2.23 Health impacts and safety concerns

9.2.24 The submission discusses the issue of aerodynamic modulation and infrasound, and responds in detail to the material presented by the applicants on this issue.

9.2.25 Appendix 3 of the submission consists of a summary of the main collusions reached in 25 reviews of research literature on wind farms and health.

10.0 OBSERVERS

10.1.1 One observation was submitted from Steve and Vicki O'Donoghue and others. It states that the undersigned are families living in Glounaharee East. [This is a townland which lies within and to the south of the site, by which it can be determined that the observers' houses are in the cluster to the southwest (approximately 900m -950m) of T11. These are shown as houses H54-H58 in the information submitted by the applicant.]

10.1.2 The observers state they will be encircled completely by these industrial machines, and are gravely concerned about the effect on health, the cumulative audible noise, and also infrasound. Refers to international papers on these issues. The 2006 WEGs fail to consider or protect human health.

11.0 ASSESSMENT

11.1 In accordance with the requirements of Article 3 of the European Directive 85/337/EEC, as amended by Council Directives 97/11/EC and 2003/35/EC and Section 171A of the Planning & Development Act 2000-2010, the environmental impact statement submitted by the applicant is required to be assessed by the competent authority, in this case by the Board. In effect, it is the board that undertakes the EIA. In this assessment, the direct and indirect effects of the proposed project need to be identified, described and assessed in an appropriate manner, in accordance with Articles 4 to 11 of the Directive.

11.2 Such an EIA undertaken here in this report will, by virtue of the specific range of issues pertinent to this appeal, cover most of the issues that would in any event have been covered in an inspector's assessment in a non-EIA case.

11.3 Other issues can be addressed under the following headings;

- Principle of Development and policy context
- Legal and Procedural matters

While these fall outside what could be considered relevant to the EIA, it should be noted that they are also addressed as part of the Applicants' submitted EIS.

11.4 In the interests of clarity, I propose that my assessment be structured on the basis of the 2 headings above, followed by a series of headings addressing the EIA of the scheme, mirroring the structure of the Applicants' original EIS (grouped where appropriate), but also drawing on the submissions of other parties to the appeal, on relevant policies, data, and my own observations, analysis, and conclusions. I propose that these subsequent headings be laid out as follows.

- EIS – Compliance with Planning and Development Regulations 2001
- EIA – Alternatives Considered (EIS Chapter 2)
- EIA – Human Beings – Separation Distances (EIS Chapter 4)
- EIA – Human Beings - Noise and Vibration (EIS Chapter 9)
- EIA – Human Beings – Shadow Flicker and other issues(EIS Chapter 4)
- EIA – Flora and Fauna (EIS Chapter 5)
- EIA – Soils and Geology, Water (EIS Chapters 6 and 7)
- EIA – Air and Climate (EIS Chapter 8)
- EIA – Landscape (EIS Chapter 10)
- EIA – Cultural Heritage (EIS Chapter 11)
- EIA – Material Assets (EIS Chapter 12)

- EIA – Interaction of the Foregoing (EIS Chapter 13)

11.5 PRINCIPLE OF DEVELOPMENT AND POLICY CONTEXT

11.5.1 Amendments to scheme at further information stage

11.5.2 At the outset, it is necessary to consider the nature of the scheme currently before the board. In broad terms, it was initially a 14-turbine scheme, which was reduced to 6 at further information stage (see my introduction at Section 1.0 above). The BTOC say that this amendment was not appropriate at this stage in the process, and that it imported a fatal flaw into the process. I note that the Area Planning Officer's 2nd report (see Section 4.8.1 above) considers it acceptable to deal with the scheme as a 6-turbine extension to a permitted windfarm.

11.5.3 I would concur with the planning officer's positon on this matter. The amendments were re-advertised, and the public had appropriate opportunity to comment. The application documentation was amended and updated accordingly. It is important to note that the amendments at further information stage were in all instances a reduction in the proposal, and as such, there were have been no net increases in potential impacts.

11.5.4 I propose to assess the scheme as a 6-turbine extension to a permitted scheme, as did the planning authority. While this puts a focus on the information received post-FI, and requires an amount of re-interpretation of material received prior to this point, it is worth noting that due to the requirement to consider cumulative impacts, both scenarios are largely comparable across a range of metrics. For example, it is reasonable to expect that the noise impacts from the 14 turbine scheme would be similar to the 6-turbine scheme, once the cumulative impacts from the 'original' 8 turbines are considered.

11.5.5 The bulk of relevant information from the applicant is contained in the original EIS. The EIS amendment submitted at further information, which I will refer to in this report as the 'EISA', relates largely to the consequent implications of dropping the scheme from 14 to 6 turbines. I will draw from both these documents, as relevant.

11.5.6 Need for the proposed development

11.5.7 Section 1.4 of the EIS sets out the applicant's position on the need for the proposed development. The BTOC position on the matter is that this is a commercial development, and that no favourable status should be conferred. In my opinion, it is indeed appropriate to consider the proposed development as a speculative commercial development in the first instance. Any

meritorious aspects of the proposal at a local, national, or international scale will be reflected in policy, as applicable.

11.5.8 I note that the planning application cover report submitted with the application states that the proposal is being made in order to 'satisfy' the grid connection offer that has been secured by the applicant. It is worth clarifying however that grid connection allocations do not amount to spatial planning policy, and are not of relevance under this process, in my opinion.

11.5.9 Broad policy context

11.5.10 Sections 2.5 and 2.6 of the EIS set out national energy policy, and Section 2.7 sets out planning policy. Also, the area planning officer refers to a wide range of policy in his reports. It is indeed the case that much of this policy is broadly supportive of renewable energy in general and wind energy developments in particular. I note that several 3rd party submissions criticise wind energy in principle, questioning its economic justification, environmental performance, and broad social impacts. While this is indeed a valid, valuable and worthwhile area for debate, I do not consider it within my remit to enter into an assessment of such issues, nor take a position on the matter. The forum for such matters lies in the formulation of policy at a national, regional, and local level.

11.5.11 I note that the Regional Planning Guidelines also broadly support renewable energy, but that they do not have a spatial component in this regard.

11.5.12 Wind Energy Development Guidelines (Department of Environment, Heritage, and Local Government 2006)

11.5.13 These guidelines, hereafter referred to as the 2006 Guidelines are the primary national policy on wind energy developments. They were issued under Section 28 of the Planning and Development Act, 2000, which requires both planning authorities and An Bord Pleanála to have regard to them in the performance of their functions.

11.5.14 The BTOC assert that these guidelines are no longer fit for purpose. I do note that they are 9 years old, and that they were written at a time when there were significantly fewer windfarms in Ireland, with significantly smaller turbines on average. I also note that the DoECLG engaged in public consultation in respect of a focused review of certain aspects of these guidelines (noise, proximity, and shadow flicker). The public consultation phase of this review closed in February 2014, although nothing has issued since, at the time of writing.

11.5.15 In my opinion, these guidelines remain an important and relevant policy tool, and I will be drawing on their recommendations - particularly in the area of noise, shadow flicker, and visual impact – later in this assessment.

11.5.16 County Development Plan – broad policy context and non-wind policies

11.5.17 It is worth noting – as per Section 7.5 above – that the current 2014 plan was adopted about 2 weeks before the submission of the further information. As such, while the application was made under the 2009 plan, the decision was under the 2014. In any event, it is the 2014 plan that forms the basis for my assessment and the board's decision.

11.5.18 The County Development Plan is broadly supportive of renewable energy developments in general, and wind energy developments in particular, albeit with the caveat that environmental considerations and impacts on residential amenity must be considered against the delivery of such objectives.

11.5.19 I note that the BTOC highlight policies of the 2014 plan regarding rural communities, housing, amenity, rural business, tourism. It is not the case that these policies 'trump' those supporting wind energy development, or vice versa. Rather these sets of policies must be viewed alongside each other, and reconciled should a conflict arise.

11.5.20 On the issue of tourism, I note that Figure 8.1 of the plan does not identify the Boggeragh Mountains as a key tourism asset.

11.5.21 County Development Plan – Wind Energy Strategy

11.5.22 The planning officer states that the proposed development is consistent with both the 2009 and 2014 wind energy strategies. The scale of the mapping for the 2009 plan is difficult to discern, as noted by others, but having performed a 'lightbox' exercise, it would appear that the eastern portion of the site – possibly the 3 easternmost turbines - lay within the top tier 'Strategic Search Area', with the remainder being in the middle tier. Under the 2014 plan, the entirety of the site and surrounding areas is within the middle tier 'Open to Consideration'. As such, the site has gone from being top/middle to middle tier in the county's wind energy strategy.

11.5.23 As set out in Section 7.5 above, Objective ED3-5 sets out specific considerations for wind energy development in 'Open to Consideration' areas. All of these considerations are covered in the course of this assessment.

11.6 LEGAL AND PROCEDURAL MATTERS

11.6.1 Proposal for a permitted turbine 'envelope'

11.6.2 The applicant has not proposed specific dimensions for the turbines, but rather has proposed an 'envelope' of dimensions, as summarised in Table 1 at Section 3.1.1 above. Maximum figures for hub height, rotor diameter, and height to blade tip are given. The figures given for hub height and rotor diameter are such that if these were 'maxed out', the height to blade tip would be exceeded by 7.5m. As such, an amount would need to be trimmed off the maximum hub height and/or rotor diameter figures in order to keep within the maximum height to blade tip.

11.6.3 While the submitted drawings reflect the maximum figures, they actually scale such that the hub height is 11m shy of the maximum, bringing the overall height to tip to 4m shy of the stated maximum. This is reflected in Table 1 at Section 3.1.1 above.

11.6.4 The applicant state, in Section 1.3 of the EIS that within the proposed 'envelope', the worst case scenario is considered under each heading, be it landscape, noise, shadow flicker, etc. The BTOC position is that the latitude sought in relation to the proposed development would not be afforded to a planning application for a house. In the first party response to the appeals, the applicant's defence is that the impacts of the scheme would in any event be regulated by way of 'performance conditions'.

11.6.5 I appreciate the concerns of the BTOC, and their analogy with a domestic application warrants consideration. In my experience, a level of latitude is, however, afforded to all planning applications, as evidenced by many referrals and enforcement cases. The concept of 'substantial compliance' is a feature of the Irish planning system.

11.6.6 I appreciate the applicant's objective is to maximise the options available, given that subsequent stages of the process would be by way of competitive tender, with differing models being available from different suppliers. However, there is a significant difference in visual terms between a tall hub height with small diameter swept path and a short hub height with large diameter swept path. There are also implications for noise, shadow flicker, and impacts on birds and bats.

11.6.7 It is worth noting that it is not necessarily the case that reducing one of the 3 key dimensions will reduce all impacts. For example, dropping the hub height while maintaining rotor diameter could increase noise impacts, and also increase potential bird strike with low-flying species such as the Hen Harrier.

11.6.8 In resolving this matter, I consider it appropriate that there should be a lower bound on the 3 key dimensions, and that the range between the upper and lower bounds should not be significant.

11.6.9 Using Table 1 at Section 3.1.1 above as a basis, I would suggest the following

	Printed dimension ('up to..')	**Dimension Scaled from drawing**	**Proposed 'lower bound' dimension**	**Lower bound as a % of upper**
Rotor Diameter	105m	105m	95	90.5%
Hub height	91.5m	80.5	80	87.5%
Height to tip	136.5m	132.5	125	91.6%

Table 7

11.6.10 On a related issue, I note the planning authority's Condition 22 requiring that BATNEEC principle (Best available techniques not entailing excessive costs) be applied to the selection of the turbine components. I do not consider this to be an appropriate condition in that it is not possible to monitor, assess, or enforce this requirement.

11.6.11 Grid connection

11.6.12 The question of grid connection arises as an issue on foot of a relatively recent court decision under the 'O Grianna' case, which issued in December 2014, between the request for further information and the submission of the response from the applicant. As such, the applicant availed of the opportunity to attempt to remedy any potential infirmities in the case in tandem with that FI response.

11.6.13 In the first instance, it is worth considering the following sections of Peart J's judgement from the Ó Grianna case, which address the issue of 'project splitting'.

> *.. in reality the wind farm and its connection in due course to the national grid is one project, neither being independent of the other*
>
> *… it points to a prematurity in the seeking of permission for the construction of the wind farm ahead of the detailed proposals for its connection to the national grid from ESB Networks. I appreciate that Framore have indicated that it simply is not possessed of the necessary information in this regard and could not include it in its EIS. But that does not*

mean that given more time and further contact with ESB Networks it could not be achieved so that it could be included in an EIS which addressed the impact of the environment of the total project "at the earliest stage".

…

In that way, it is difficult to see any real prejudice to the developer by having to wait until the necessary proposals are finalised by ESB Networks so that an EIS for the entire project can be completed and submitted, and so that a cumulative assessment of the likely impact on the environment can be carried out in order to comply with both the letter and spirit of the Directive.

11.6.14 My interpretation of this judgement is that there should be sufficient detail in a windfarm EIS relating to the grid connection to allow for a cumulative and comprehensive assessment of environmental impacts. In the absence of such information, the EIS is defective, and permission cannot be granted.

11.6.15 The original EIS explicitly states that the application does not include a connection to the grid. As per Section 6.1.5 above, a 'Section 5' exemption was issued by the planning authority for an underground cable extension from the Esk South 38kV station to the Boggeragh substation. On a somewhat contradictory note, the planning report submitted with the application (See Section 3.1.17 above) asserts that the grid connection is 'as per previously permitted' on this site. The Area Planning Officer's second report states that he is unclear as to the implications of the Section 5 exemption on grid connection, considering the O Grianna judgement.

11.6.16 In my opinion, the question of whether planning consent is required, has been given, is in place, or the process by which it might be obtained is irrelevant to the issues arising from Ó Grianna. The question is whether there is sufficient information regarding the proposed grid connection to allow for a comprehensive EIA of the scheme by the board, with the entirety of the scheme encompassing both the windfarm and the grid connection.

11.6.17 To this end, it is worth noting that significant clarity was presented within the original EIS, with the route shown. The EISA provides additional details, which were before the planning authority at the time of their EIA, and are now before the board for the board's EIA. I note that the 1st party response to the appeal defends the use of the EISA on the issue of grid connection.

11.6.18 The route is to be underground, and located either within the subject site, or along public roads. No 3rd party lands are indicated. Some issues arise on the question of whether the grid

connection river crossings are to be attached to the bridge or 'in stream'. However, these are discussed further in the course of the EIA in Section 11.14 below, and do not have a material bearing on this legal question.

11.6.19 In my opinion, there is sufficient information before the board to allow for a complete and lawful EIA of the scheme, consistent with the requirements set out in the O Grianna judgement.

11.6.20 Interest in lands

11.6.21 While the 14-turbine scheme involved a number of different ownerships, the 6-turbine extension is solely within Coillte lands.

11.6.22 10 year permission and 25 year operation

11.6.23 The applicant is seeking a 10 year permission, and the planning authority have allowed for this in Condition 2 of their decision. This is an option afforded by Section 41 of the Planning and Development Act, to allow a deviation from the standard period of 5 years. As such, a condition would indeed be consistent with the legislation. The 2006 Wind Energy Guidelines (DoEHLG) state (Section 7.20) that "Planning authorities may grant permission for a duration longer than 5 years if it is considered appropriate, for example, to ensure that the permission does not expire before a grid connection is granted."

11.6.24 However, I note that no particular extenuating circumstances have been presented by the applicant. As such, I can see no justification for considering a 10-year permission in this instance.

11.6.25 The proposed 25 year operating period is reasonable, and consistent with established principles

11.7 EIS – COMPLIANCE WITH PLANNING AND DEVELOPMENT REGULATIONS 2001

11.7.1 Article 94 and Schedule 6 of the Planning and Development Regulations 2001, as amended, set out the information to be contained in an EIS. The BTOC say the EIS is inadequate and that the EISA is not in order. The Area Planning Officer says there are shortcomings in the EIS, but not such that would render it legally deficient.

11.7.2 In my opinion, the EIS accompanying the application, as supplemented by the legitimately-submitted EIS addendum (EISA) technically accords with the legislative requirements and with the subjects to be addressed set out therein. I note the matters presented by the applicant in their appeal, and the first party response to the 3rd party appeals where relevant. This

material validly supplements the initial EIS, in my opinion, and comes within the terms of the process as outlined by legislation.

11.8 EIA – ALTERNATIVES CONSIDERED (EIS CHAPTER 2)

11.8.1 The EPA guidelines on EIA state that in some instances neither the applicant nor the competent authority can be realistically expected to examine options that have already been previously determined by a higher authority such as a national plan or regional programme for infrastructure. I consider this to be an appropriate standpoint particularly given the nature of wind farm proposals. I consider that the county-level wind energy strategy adequately addresses this issue.

11.8.2 Nevertheless, the applicant does present a significant amount of information on this topic, which is covered in Sections 2.3 of the EIS. EIS Section 2.8 sets out alternative sites and alternatives for this site.

11.8.3 In terms of turbine layout, Figure 2.4 of the EIS shows site-specific constraints, albeit with the turbine locations omitted, which is notably unhelpful. A cross reference with the site layout by way of a 'lightbox' exercise indicates that the turbine layout is effectively dictated by these constraints, and is largely compliant with them. T11 and T13 are on the edge of the Duhallow Way buffer. T10 and T12 are quite close to telecoms buffers. T14 is at the edge of buffer for headwaters of stream (Awnamnamarva). No turbines are near the housing or archaeology buffers.

11.8.4 In considering alternatives, the Area Planning Officer's first report notes that extending the permitted windfarm to the southwest would contain the visual impact, but be closer to the SPA.

11.8.5 In conclusion, I consider that this topic has been adequately explored.

11.9 EIA – HUMAN BEINGS – SEPARATION DISTANCES (EIS CHAPTER 4)

11.9.1 Separation distances between dwellings and proposed turbines is not a planning issue in its own right, but does feed into the considerations of Noise and Vibration and Shadow Flicker below. There are also some related matters to consider

11.9.2 Separation distances - quantitative

11.9.3 It is worth noting that there are no specific requirements for separation distances within the 2006 guidelines. Section 5.6 states *that "In general, noise is unlikely to be a significant problem where the distance from the nearest turbine to any noise sensitive property is more than 500 metres."* While this is merely a

commentary on the principles under consideration, it has been interpreted as de facto policy at times.

11.9.4 The planning officer states that the nearest house not connected to the (original, 14-turbine) scheme is house H35, to the west of T3, which is 750m from the nearest turbine. The applicant states that H34, H36, H37, H38 are all participating landowners or immediate family members. The HSE in their submission to the appeal assert that it is inappropriate to change the impact evaluation based on financial interest. To my knowledge, there is no basis in current policy for such a differentiation. Furthermore, while there might be an argument to be made for such a differentiation from first principles, the applicant has not done so in this instance. However, given that these landowner properties are to the west of the overall 14-turbine site, and removed from the 6-turbine scheme, they are not of direct relevance to this assessment.

11.9.5 I share the concerns expressed in the initial Area Planning Officer's report, that there was no drawing which showed both the turbine locations and the locations of the surrounding houses. The lack of such a drawing was notable, unhelpful, and a misleading presentation of relevant information. Thankfully this was addressed by way of Item 3 of the further information request, and in particular Table 3.1 and Figure 3.1 of the response document.

11.9.6 Considering this information, and restricting consideration to properties in proximity to T9-T14, the nearest properties are in the cluster at Glounaharee East / Glannaharee East. These include those of the observers (see section 10.0 above), who assert that the proposed development would represent an overconcentration of turbines in the area, and that they would be effectively surrounded. Table 3.1 of the FI response document states that H54 is 650m from the nearest turbine, although on scaling from Figure 3.1, it would appear that this refers to a turbine that is outside of the current 6-turbine scheme. The nearest currently-proposed turbine to this cluster is T11, which is around 900m from these houses. Looking elsewhere, there are houses to both the southeast and northeast of T14 (Glandine/Knockavaddra) that come within the nominal 10x turbine diameter buffer shown in Fig 3.1. The nearest to the southeast is H149, which is 720m, and the nearest to the northeast is H134, which is 960m.

11.9.7 I note that the first party response states that the properties of those involved with the Glouminane Residents' 3rd party appeal are 2.9km from the nearest turbine currently proposed, albeit that other proposed turbines are closer to them.

11.9.8 In absolute terms, the separation distances involved in the subject proposal, being at least 720m, compare favourably to many contemporary windfarm proposals that I am aware of, some of

which use a 500m buffer, interpreted from the 2006 guidelines, as a starting point.

11.9.9 Issues relating to proximity

11.9.10 The appeal from BTOC raises a number of issues around public safety, health, and asserts that nearby residents close to other turbines have abandoned their homes. The appeal says that Scottish research has found impacts of constructed windfarms to be greater than predicted, particularly in relation to noise and shadow flicker.

11.9.11 Chapter 4 of the EIS presents information on public opinion, health impacts, property values, and so on, and Appendix 5 of the EIS consists of a range of references from studies into health effects from windfarms.

11.9.12 I note the assertions by the parties on these issues. However, as I am not in a position to reconcile these conflicting assertions, I do not consider that these matters can be validly brought to bear on the planning assessment in this instance.

11.9.13 On a somewhat related matter, Section 3.2 of the EIS sets out a proposal for 'community gain' by way of financial contributions. I note this proposal, but it would not be appropriate to bring this matter to bear on the appeal

11.10 EIA – HUMAN BEINGS - NOISE AND VIBRATION (EIS CHAPTER 9)

11.10.1 Background noise

11.10.2 Section 9.3 of the EIS discusses noise monitoring methodologies and results. 5 locations were used, and the results plotted in figures 9.3-9.12 for both daytime and night time. The BTOC appeal asserts that this is a 'low noise area' as per the 2006 guidelines. The 1st party response agrees, and suggests an amended wording of the planning authority's conditions to reflect this fact.

11.10.3 Noise limits

11.10.4 The recommended noise limits are set out in Section 5.6 of the 2006 guidelines, which can be summarised as follows.

Column:	*1*	*2*	*3*	*4*	*5*
	Prevailing back-ground noise level	**Noise limit**			
Daytime	<30dB	35-40dB	OR	5dB above background	(whichever is higher)
	>30dB	45dB			
Night time	any	43dB			

Table 8

11.10.5 The noise limits proposed by the applicant are set out in Section 9.2.2.1.1 of the EIS. They propose to largely apply the above standards, with the following qualifications:

a) A fixed limit of 45dB for both daytime and night-time is to be applied to landowners with interests in the project. This effectively results in a limit 2dB more permissive at night time at lower wind speeds. There is no basis in current policy for this approach.

b) The highest possible limit value for 'low noise' environments is applied; 40dB

c) A single 'limit curve' is applied to all properties, as set out in Table 9.17 of the EIS.

11.10.6 In relation to point a), this approach, while unfounded in policy, is somewhat moot, as it applies to the properties to the west of the 14-turbine site, and not to any of the houses proximate to the 6-turbine scheme.

11.10.7 In relation to point b), while this is 'stretching' the guidelines' limits, it is nevertheless within them.

11.10.8 As for point c), I have concerns with this approach. Firstly, the applicant has chosen to apply a single curve notwithstanding the availability of survey information from 5 locations. Applying good practice, limit curves for each of these survey locations would have been applied, either directly (i.e. paired with nearest) or by way of interpolation, to each of the identified receptors. Appendix 9-1 of the response to the further information request (the report from AWN consulting) appears to imply this approach, but it does not find its way into the body of the assessment.

11.10.9 However, having examined the background noise plots from Figure 9.3 to 9.12 of the EIS, it would appear that the single limit curve applied by the applicant is more onerous than would have been the case had each of the noise receptors been paired off against the most relevant 'bespoke' curves from the background modelling. The applicant highlights this fact in the response to FI item No. 9 (see Section 3.4.13 above)

11.10.10 Modelled noise levels

11.10.11 Section 9.4.2.3.1 of the EIS gives noise generation profile for turbines, and compares these against the profiles used for other windfarms in the vicinity. The noise profiles used in the subject case would appear to be comparable to the examples cited. Appendix 9-1 of the response to the further information request details the noise prediction methodology.

11.10.12 Appendix 19 of EIS shows preliminary noise contour mapping for wind at 9m/s, and also includes turbines from Boggeragh 1. It is clear that the houses near Glennagurracat Bridge (landowners) and those at Glannaharee East (observers) are the most susceptible to noise impacts. Fig 2 and Fig 3 of Appendix 9-1 to the response to the further information request show that even under a 4-turbine scheme (southwest cluster only, to the west of the 6-turbine scheme currently proposed) on this site, these houses would experience comparable impacts. However, I note that one of the proposed turbines (T11, which is closest to the Glannaharee East houses) is missing from these plots, and therefore any conclusions based on this flawed modelling must be set aside.

11.10.13 Comparisons of modelled noise levels against noise limits

11.10.14 Section 9.4.2.6 of the EIS asserts that cumulative predicted noise levels have been compared against the noise criteria curves, and that there were no exceedances. The planning officer's report finds that the proposed development complies with the current 2006 guidelines.

11.10.15 Table 9.18 of the EIS plots the modelled impacts at the receptors, along with derived noise limit 'curve' discussed above. These comparisons show that house H34 would have breached the night-time 43dB criteria, were it not for the erroneous landowners' dispensation applied by the applicant. Again, this is a moot point in the context of the 6-turinb scheme.

11.10.16 Of some concern is the fact that some of the houses in the Glannaharee East cluster (H54-H58, those of the observers) are modelled as receiving noise at exactly the daytime limit of 40dB for 'low noise' environments. The applicant asserts that due to

wind directionality, the impact would be less, but I have concerns with this approach.

11.10.17 Tracking back to the daytime noise plot for location C, as shown in Figure 9.7 of the EIS, the entirety of the interpolated curve[3] lies above the 30dB $L_{A90,\ 10\ mins}$. Level. As such, the 'low noise' scenario does not arise at this location, and a 'floor' on the noise limit of 45dB would be applicable. As such, the modelled noise impacts at this location would be 5dB within the applicable noise limit.

11.10.18 Section 4.2 of the EISA contains a revised noise assessment. Table 11 is slightly different to 9.18 of the original EIS, with the modelled noise at the Glannaharee East houses being 1dB higher at higher windspeeds, at up to 42dB. This is still within the 45dB limit which I consider acceptable at this location, and also within the flat 43dB limit.

11.10.19 All else being equal, it would be reasonable to assume that the results would have been exactly the same, as Turbines 1-8 were considered directly in the initial modelling, and by way of a cumulative contribution in the EISA. However, on comparing Appendix 19 of the EIS to Appendix C of the EISA it would appear that the locations of the turbines in the original permission (PL04.240281) were slightly different to the locations of turbines 1-8 initially sought by the applicant under the subject application.

11.10.20 Construction noise

11.10.21 Section 9.4 of the EIS presents construction phase impacts. I consider it reasonable that the acceptable levels of noise during construction phase should be higher than during the operational phase. I consider the proposed development to be acceptable in this regard.

11.10.22 Conclusion on the issue of noise and vibration

11.10.23 One of the findings of the Ó Gríanna judgement referred to at Section 11.6.11 above was that the board is not bound by the standards set out in the DoE Guidelines. Nevertheless, it remains the case that it is established practice that these standards are at the very least applied as a 'yardstick' against the modelled performance of windfarms.

11.10.24 On the basis of my assessment above, I consider that the applicant's methodology for assessing noise impacts was largely acceptable, albeit with some questionable aspects, which I have worked through above. On the basis of the modelling presented, it

[3] The 'cloud' of plots in Fig 9.7 of the EIS that is subsequently interpolated is notably unusual in that none of the points are below 29dB. It would be usual to expect statistical 'outliers', as with other plots within this section.

would appear that the noise impacts on sensitive receptors – houses – would be within acceptable limits.

11.10.25 I note item 'c' of Condition 25, as applied in the planning authority's decision (see section 5.2 above). It relates post-construction monitoring to the phasing of development, and this aspect of the condition is worthy of consideration by the board, in my opinion. However, the flat noise limit of 45dB at wind speeds in excess of 10m/s is not consistent with the terms of the 2006 guidelines, which advise that the limit 'shadow' the background noise at +5dB at higher wind speeds[4]. Furthermore, the condition refers to phases of development, whereas no discrete phases have been identified. With just 6 turbines, it would appear likely that there would be a single phase of construction.

11.10.26 On balance, a standardised approach to the issue of noise conditions would be appropriate, in my opinion. I note a recent practice by the board on this issue is to require a +5dB threshold with a 43dB floor for both day and night. The proposed development as modelled would comply with these limits

11.11 EIA – HUMAN BEINGS – SHADOW FLICKER (EIS CHAPTER 4)

11.11.1 Section 4.7 of the EIS deals with this issue. As per the 2006 guidelines, this impact is modelled in terms of maximum minutes per day and maximum hours per year. The guidelines set out limits of 30 in both instances.

11.11.2 Maximum daily shadow flicker

11.11.3 Table 4.10 of EIS shows modelled impacts in maximum minutes per day in 'blue sky' scenario (100% sunshine during daylight hours). The threshold of 30 minutes (0.5hrs) is exceeded for houses to the west and north, and a cluster of 3 houses near the east entrance, to the northeast of T14 (H134-136). It is only this latter cluster that is of specific concern in this instance, given the revision to a 6-turbine scheme. These houses would receive in the order of 37- 40 minutes of potential shadow flicker on the worst affected days.

11.11.4 In response to these modelled exceedances, the applicant points to the proposed mitigation strategy (see Section 11.11.20 below), which targets a reduction to 28 minutes in all instances.

11.11.5 EIS Table 4.12 gives more details of which turbines could produce shadow flicker in excess of the 30 minute threshold on which houses on which days. In the case of houses H134-137, shadow

[4] http://www.seai.ie/Renewables/Wind_Energy/Wind_Energy_2011_Conference/Practical_Application_of_ETSU-R-97.pdf gives advice on this matter. The 2006 guidelines are derived from ETSU-97.

flicker would arise from turbines T13 and T14 on 5 to 9 days on dates spanning February/March and October.

11.11.6 Table 2.3 of Appendix 3-1 of the EISA is of some concern, when compared against Table 4.10 of original EIS. For example, H134 drops from 0.63 to 0.46 hours even though both modelled scenarios are comparable. This is more than could be accounted for by the minor changes to layout of the western turbines pre and post FI. It is also notable that H135 and H136 are no longer considered, even though they were modelled in the EIS has having greater than 30 minutes of maximum shadow flicker. The only reason I could propose for this anomaly is that 0.46 hours corresponds to the 28 minutes target for post-mitigation shadow flicker. However, the column heading on the table explicitly states 'Pre-Mitigation'. At best this is careless and inconsistent from the applicant. At worst, it is misleading.

11.11.7 In conclusion, it is apparent that in the absence of mitigation, shadow flicker would arise at houses H134-137 at levels in excess of the maximum 30 minute per day threshold set out in the 2006 guidelines. Turbine T13 would also contribute to exceedances at House 58.

11.11.8 Maximum annual shadow flicker

11.11.9 Table 4.11 presents modelled impacts in maximum hours per year. As noted in the Area Planning Officer's Report, there would be 14 exceedances of the 30 hour threshold, with 'notable exceedances' of up to 95 hours, three times the recommended limit.

11.11.10 This table also presents figures on the basis of a 'write down' to 32% of potential sunshine to account for meteorological conditions. Under this scenario, just 1 house (H36) would experience an exceedance of the 30 hour limit. The applicant presents conclusions on the matter in the context of this '32% sunshine' scenario, and the fact that H36 belongs to a participating landowner.

11.11.11 Item 3 of the planning authority's further information request asks the applicant to rely solely on the 100% figures. In my opinion, the planning authority's approach on this matter is entirely correct. The 2006 guidelines are somewhat ambiguous on this issue, but contain at footnote 11 a reference to the fact that "*the shadow flicker recommendations are based on research by Predac, a European Union sponsored organisation promoting best practice in energy use and supply which draws on experience from Belgium, Denmark, France, the Netherlands, and Germany".*

11.11.12 I have had sight of the document 'Spatial planning of wind turbines' by Predac. In its section on Shadow Flicker it includes the following recommendation:

> *"It is recommended at neighbouring dwellings and offices that flickering shadows are not exceeding 30 hours / year or 30 mins per day with normal variation in wind direction and with clear sky. This follows the German norm of 30 hours a year at clear sky)."*

11.11.13 This section also outlines the national experiences in Belgium, Denmark, France, and the Netherlands. Belgium applies the 30/30 with clear sky, whereas in Denmark, 10 hours per year is allowed with average cloud cover.

11.11.14 As such, the background documentation removes the ambiguity from the guidelines themselves. Following this logic, one can either follow the German/Belgian logic of 30 hours with 'blue sky' or the Danish logic of 10 hours with 'average cloud cover'. Either approach produces approximately the same performance criteria, given that in northern European latitudes, the sun shines for approximately one third of the time, give or take

11.11.15 The applicant's contention that the 30 hours per year limit is applicable to an 'average cloud cover' scenario mixes these two approaches to produce a performance criterion that is effectively in the order of 3 times more permissive than other northern European countries.

11.11.16 Table 2.2 of Appendix 3-1 of the EISA addresses the issue of annual shadow flicker. But rather than consider the 168 houses covered in the initial modelling, it concentrates on the 10 houses within 10 rotor diameters of the 6-turbine scheme, namely the cluster at Glannaharee East, and the 2 clusters at Knockavaddra to the southeast and northeast of T14. As such, there is no further consideration of the 14 houses that were modelled as experiencing exceedances of the 30 hour limit to the west of the 14-turibine scheme.

11.11.17 Under this table, the total annual shadow flicker at H134 and H137 is modelled – under 100% sunshine conditions – as being 14.5 and 10.5 hours respectively. This comes in at less than half the maximum limit set out in the 2006 guidelines. All the remaining houses considered are modelled as having zero shadow flicker.

11.11.18 While these figures are consistent with the guidelines, they are somewhat odd in that they do not correlate to the modelled '100% sunshine' figures given in Table 4.11 of the original EIS. H134 actually increases from 8.3 to 14.5 hours, while H137 increases from 0 to 10.5 hours. This increase is not explained, and is to the

best of my analysis, inexplicable. It should be noted that these houses are at the far northeast of the eastern edge of the site, and so would not be receiving shadow flicker from turbines outside of the 6-turbine scheme.

11.11.19 Notwithstanding the above concerns, it is my professional opinion from the presented information that the subject 6-turbine proposal, either by itself or cumulatively, would not generate annual shadow flicker above the 30 hour annual threshold. While the information presented indicates significant breaches of the guidelines resulting from the western turbines within the 14-turbine scheme, these turbines are not before the board at this time.

11.11.20 Mitigation

11.11.21 Shadow flicker mitigation strategy set out in Section 4.7.6 of the EIS. Further information item 3 asked the applicant to "*provide specific mitigation measures for all dwellings which are affected by excessive shadow flicker".* Indeed, such specific mitigation is requested by the HSE in their submission to the planning authority. In response, the applicant states that no mitigation is required, but that if it were, the mitigation strategies set out in Section 4.7.6 of the EIS would be applied.

11.11.22 Management arrangements whereby turbines are intermittently turned off to avoid exceedance of shadow flicker are envisaged by guidance documentation. The 2006 guidelines, and indeed the Irish Wind Energy Authority's own best practice guidelines refer to such measures. However, in relation to the subject proposal, it should be noted that while the shadow flicker impacts are modelled explicitly, mitigation is only discussed in the abstract.

11.11.23 The strategy set out in Section 4.7.6 consists of a circuitous route between shadow flicker occurring and mitigation actually happening, with the onus put on the 3rd party, and the applicant being the arbitrator of the matter. The following extract from this section of the EIS is of relevance (my emphasis)

> *In the absence of any screening features as described above, at any property where the shadow flicker generated by the proposed development exceeds the daily or annual guideline threshold* ***and the owner(s) of the property would like the incidence of shadow flicker reduced****, the operator of the engage with the property owner to ensure the DoEHLG guideline threshold are not exceeded.* ***The property owner will be asked to log the date, time and duration of shadow flicker events*** *occurring on at least five different days.* ***The provided log will be compared with the predicted occurrence*** *of shadow flicker effects. In the unlikely event that there is a variance in the predicted and recorded incidence of shadow flicker,* ***a visit will be carried out to verify the***

occurrence *of shadow flicker at the residence.* ***If an occurrence of shadow flicker is verified*** *to be in exceedance of the guideline thresholds, a number of screening measures will be proposed to the property owner, including:*

- *Installation of appropriate window blinds or curtains in the affected rooms of the residence;*
- *Planting of screening vegetation;*
- *Other site-specific measures that might be agreeable to the affected party and may result in the desired mitigation.*

If agreement can be reached on a set of appropriate measures, the necessary works to install the required mitigation would be implemented in cooperation with the property owner as soon as practically possible, with the ***full costs to be borne by the wind farm operator****.*

Should it not be possible for the parties to agree *on a set of appropriate screening measures,* ***turbine control measures will then be used*** *to meet the guidelines thresholds, as described below.*

11.11.24 In my opinion, this falls far short of what could be considered an appropriate and proportionate mitigation measure. The EIS has identified exceedances of required thresholds for shadow flicker. In such circumstances, it is my opinion that the mitigation measures should be incorporated by way of a direct undertaking by the applicant, inherent to the proposal. The conditional and circuitous chain of events and intermediary steps between a 'perceived' exceedance by a 3rd party and the control of the turbines, which places the onus on residents without any form of independent arbitration, is inconsistent with the guidelines, which mandate limits irrespective of 'consent' of the affected parties. It is also inconsistent with the Development Management Guidelines, good planning practice, and the principles of natural justice.

11.11.25 Conclusion

11.11.26 The Area Planning Officer's second report concludes that shadow flicker would be highly unlikely. The planning authority's decision includes Condition 39 which is effectively a 'performance based' condition obliging compliance with the 2006 guidelines. I have difficulties with this approach. By applying 'performance based' conditions to inherently problematic schemes, the planning authority or the board runs the risk of presenting 3rd parties with unenforceable conditions and/or giving applicants unimplementable permissions

11.11.27 On the basis of the information submitted, I agree with the planning authority that no issues arise in terms of annual shadow flicker. However, shadow flicker is modelled as arising at houses H134-137 at levels in excess of the maximum 30 minute per day threshold set out in the 2006 guidelines.

11.11.28 I do not accept the mitigation strategy presented by the applicant as being an appropriate remedy to these modelled exceedances. In my opinion, it should be possible to set out specific wind turbine control measures based on the modelled occurrence of shadow flicker. Table 4.12 of the EIS provides most of the information required do frame such a condition aside from the times of day that the shadow flicker would occur. In order to cover the options, the period from noon to dusk could be applied for a turbine to the west of a receptor and dawn to noon for a turbine to the east of a receptor. As such, a condition could be worded as follows.

> 'Turbines T13 and T14 shall be programmed so as to never rotate between noon and dusk on any of the days referred to in the 4th column of Table 4.12 of the EIS in respect of Houses H134 to H137. Turbine T13 shall be set so as to never rotate between dawn and noon on any of the days referred to in the 4th column of Table 4.12 of the EIS in respect of House H58.'

11.11.29 In my opinion, this approach would be consistent with the logic of Section 7.14 of the 2006 guidelines, which states that

> *"Shadow flicker is not usually critical. However, in unusual circumstances, where the calculations indicate that occupied dwelling houses would be significantly affected, a condition requiring the non-operation of turbines at times when predicted shadow flicker might adversely impact on any inhabited dwelling within 500m of a turbine may be appropriate."*

11.11.30 I acknowledge that this condition is excessive in the time periods covered, and would result in potential shadow flicker falling significantly below the 30 minute threshold, but in the absence of the information available to the applicant, I can see no alternative successful resolution. I also realise that such a condition does not make allowances for periods where there would be cloud cover. However, I have no information regarding the extent of cloud cover that would sufficiently mitigate shadow flicker, nor am I aware of an appropriate mechanism whereby that could be included in an enforceable condition.

11.12 EIA – FLORA AND FAUNA – HEN HARRIER (EIS CHAPTER 5)

11.12.1 Use of this site by Hen Harrier

11.12.2 The nearby SPA of Mullaghanish to Musheramore SPA cites the Hen Harrier as a species of qualifying interest. Section 5.2.2.1 of

the EIS states that the SPA hosts 5 breeding pairs, 3% of national total, based on a 2005 survey. This is reflected in the SPA site synopsis. The EIS goes on to state that Hen Harrier prefer young forest, and that the biggest risk is afforestation. Birdwatch Ireland state in their submission to the EIS that this is near known Hen Harrier territory, and the BTOC assert that the site is a breeding ground for Hen Harrier.

11.12.3 Surveys were undertaken by the applicant. Section 5.4.1 of the EIS states that 9.6 mins of flying activity was recorded, with 98% being below turbine blade height. The surveyor's opinion was that it was unlikely that there were any Hen Harrier nest sites within 2km. Vantage point surveys were undertaken in 2013 in the west of site, with 10 records of sightings in May-July. Winter/spring surveys in 2013/2014 covered the 'extension' area, and there was just one sighting. In April/July 2014 there were 14 sightings. Section 5.5.3 of the EIS refers to a failed breeding attempt by Hen Harrier within the site itself in the 2014 season.

11.12.4 Appendix 10 of the EIS consists of a Hen Harrier and breeding birds assessment report form Cork Ecology. It should be noted that this relates to a historical proposal of 12 turbines on the west of site. The conclusions of this report are reflected in main body of EIS

11.12.5 Item 5 of the planning authority's further information request requested the applicant to submit detailed information regarding the location of all known Hen Harrier breeding sites, historic, attempted, and active, and pair territories within 5km of the site, with this information not to be placed on the public file. This information is available on the appeal file for the board's consideration, and is titled 'Hen Harrier and Red Grouse Breeding Site Information. Two breeding sites are identified within 5km, and the site of the failed breeding attempt from 2014 within the 6-turbine site is also mapped and discussed.

11.12.6 This document also includes the records of Hen Harrier flights within the site during the 2014 breeding season, which are shown in Figure 5.2.1. It is notable that 13 of the 14 records pertain to the eastern portion of the study area, where the 6-turbine extension is proposed, with the remainder being in the western portion, where the permitted turbines are located.

11.12.7 It is clear from the above information that the site, and particularly the site of the 6-turbine scheme, has been and likely will remain a viable foraging - and possibly breeding – site for Hen Harrier.

11.12.8 Impacts of the proposed development on Hen Harrier

11.12.9 *Collision*

11.12.10 Section 5.4.1.5 of the EIS modelled collision risk at one per 74 years. Section 5.5.2.2.1 refers to research to the effect that collision is not an issue for Hen Harrier at existing windfarms. An Taisce in their 2nd submission assert that collision is an issue with Hen Harrier. I am prepared to accept the applicant's assertion on this matter.

11.12.11 *Avoidance/habitat loss*

11.12.12 The submission from the DoAHG (See 4.3.30 above) notes the objective under the Birds Directive to strive to avoid deterioration of habitats of birds species listed in Annex I, and states that this particularly applies to species which have declined in nearby SPAs, as Hen Harriers have in the nearby SPA. This objection is reflected in An Taisce's 2nd submission.

11.12.13 I note that the planning authority's ecologist initially recommended further information regarding Hen Harrier and other birds, and the 2nd part of FI Item 5 concerns itself with the question of habitat loss, focussing on changes to forestry on foot of the proposed development. It would appear that Hen Harrier are particularly sensitive to the stage of development of a particular area of forestry. The planning authority's ecologist's second report states that there is significant avoidance of habitat within 250m of a turbine. An Taisce assert in their 2nd submission that wind farm development may displace Hen Harrier nesting up to 500m.

11.12.14 *Cumulative impact*

11.12.15 Section 5.5.3 of the EIS refers to cumulative impacts in association with other windfarms in the vicinity, of which there are several in existence and permitted (see Section 6.2 above), although this section is somewhat insubstantial. The planning authority's ecologist's second report states that the potential cumulative impact is significant.

11.12.16 *Conclusion on impacts*

11.12.17 In my opinion, the risk of impacts from collision are low, but the impacts from habitat loss and avoidance are not insignificant.

11.12.18 Proposed mitigation

11.12.19 In response to the planning authority's FI request item No. 5, the applicant prepared a Foraging Habitat Mitigation Plan in consultation with the National Parks and Wildlife Service. This is detailed in Section 3.4.9 above. It derives from calculations of habitat loss from avoidance as set out in Section 5.2.3 of the FI

response document, and takes into account the detailed forestry management plans already in place by Coillte. The plan is detailed in Section 5.2.4 of the FI response document, which sets out a range of management prescriptions across the topics of pre-mature felling of closed canopy forestry, brash windrowing, extended fallow periods, planting varieties, no fertiliser application, monitoring, and re-felling and re-planting.

11.12.20 These measures would be implemented in two areas of Coillte lands, shown in Figure 5.2.2 and 5.2.3 of the FI response document. These are identified as 'Foraging Habitat Mitigation Areas' (FHMA).These locations area on the slopes of Laharan and Bailocke Mountains, within 2km of the northern edge of the subject site, lying north of Bweengduff Mountain. The applicant noes that the Boggeragh Windfarm is subject to a similar suite of mitigation.

11.12.21 This mitigation plan received a mixed response from the interested parties, as follows.

PA's ecologist: Raises concerns about the control that the applicant might have over the FHMA lands outside the subject site. A 'Section 47' agreement is needed. The planning officer's 2nd report concurs with this, and this requirement is reflected in Condition 8 of the planning authority's decision.

On this issue of consent, Appendix 5 of the 1st party response to the appeal consists of a number of emails between agents for the applicant and the landowners of the subject site and FHMAs, Coillte. The most recent of these from Coillte confirms

> *"that negotiations are taking place with Esk Wind Farm Ltd. in respect of project requirements concerning the realisation of a hen harrier mitigation area on Coillte property situated to the north of Esk Wind Farm in Co. Cork. Subject to the completion of internal review procedures that are currently ongoing, board approval, and conformation of title of the relevant lands, Coillte consents to the use of its land for Hen Harrier conservation purposes that might meet with the requirements of the wind farm project."*

While this could be seen as encouraging, it falls short of the consent sought by the planning authority, in my opinion. I note that Condition 8 of the planning authority's decision requires a S47 agreement on this matter.

DoAHG: The Department's 2nd submission states that they have no reason to disagree with calculations regarding the FHMAs, but notes that they did not have sight of the document regarding breeding sites.

An Taisce: Assert that the provision of compensatory habitat is inadequate. Raises more general issues around afforestation.

11.12.22 In addition to the applicant's proposed mitigation, the planning authority added additional mitigation measures by way of condition, as follows. A full summary of conditions can be found at section 5.2 above.

Pre-construction survey: Condition 5 requires that a pre-construction survey be carried out in the March-August period, and that there be no construction within 500m of a pre-nesting breeding site and/or nest at these times.

Post-construction monitoring: Condition 6 would effectively monitor the impacts of the proposed development on Hen Harrier. There are no specific actions to be taken should specified circumstances arise.

Temporary omission of T10+T13: This was recommended by the planning authority's ecologist and incorporated in the planning authority's decision by way of Condition 4, which requires that these turbines not be constructed until the forestry canopy closes, and therefore is no longer suitable as foraging habitat. The applicant has appealed this condition. The reasoning for this is detailed in Section 8.4.7 above. Essentially, the applicant's contention is that this is overly prescriptive given the requirements of Condition 5, could result in a second construction phase that would give rise to unnecessary disturbance, and goes beyond the NPWS's requirements.

11.12.23 Conclusion regarding Hen Harrier

11.12.24 It is clear that this site has potential for both foraging and breeding. I am satisfied that the risk from collision is not significant, but that there is a risk of habitat loss due to displacement, as well as impacts on the forestry cycle on these lands.

11.12.25 I consider that the off-site FHMA mitigation proposed by the applicant is appropriate and sufficient in principle, and would retain the 'status quo' regarding available habitat for Hen Harrier. While the applicant has not shown sufficient interest in these lands, progress has been made in this area. I consider that a 'condition precedent' requiring a S47 to proceed with the proposed development, as per the planning authority's Condition No. 8, would be an appropriate measure.

11.12.26 On the question of the temporary omission of T10 and T13, as recommended by the PA's ecologist and required by condition 4, I would agree with the applicant's positon on this, in that it would be unnecessarily restrictive.

11.13 EIA – FLORA AND FAUNA – OTHER SPECIES (EIS CHAPTER 5)

11.13.1 Freshwater Pearl Mussel

11.13.2 The BTOC appeal cites the presence of FPM downstream of the site, in the river Blackwater, as does the submission from the DoAHG. Section 5.2.2.4 of the EIS confirms this; they are located 14.5km downstream, below where the Glen River meets the Blackwater. FPM are a species of qualifying interest of the Blackwater SAC.

11.13.3 Section 7.8.3.3 of the EIS sets out specific requirements around tree felling for the protection of FPM. The planning authority's ecologist's 2nd report notes submissions from members of the public regarding a population of FPM which has been recorded as occurring in a small stream at Ballybogh, within the catchment of the Glashaboy River. The ecologist notes that a small amount of the proposal – the site access – lies within this catchment, but concludes that the proposed development does not pose a significant threat to this population.

11.13.4 The Area Planning Officer's 2nd report notes the Ballybogh population, but relies on the ecologists' positon on the matter. I have studied the following

- Catchment mapping given in Figure 7.2 of the EIS
- Drainage mapping and development footprint shown in Figure 7.3
- Discovery series mapping showing the Glashaboy River and its tributaries
- Old OS mapping showing townland boundaries

It is my opinion that the Ballybogh FPM population is, on the basis of the information submitted, located in the pink hatched catchment show in Fig 7.2 of the EIS, and not the Awnamnamarva River (Lyre River catchment) in the blue hatched catchment, which also contains portions of the Ballybogh townland. As such, the entirety of the turbine bases are located outside this catchment. Furthermore, the access road between T14 and T13 merely skirts the watershed between the two catchments. Borrow Pit 4 is shown in the vicinity of the watershed, but on the Awnamnamarva/Lyre side. As such, I do not consider this to be a significant issue.

11.13.5 It is my understanding that the primary threat to FPM is the release of fine sediments into the surface water network. Having regard to the two recorded populations in the Blackwater, and

nearby at Ballyboght, and in conjunction with my analysis of water at Section 11.14 below, it is my opinion that the proposed development does not represent a significant threat to FPM.

11.13.6 Other birds (not Hen Harrier)

11.13.7 Section 5.4 of the EIS states that a Peregrine was recorded on the site in 2010, and Section 5.2.2.1 states that the nearby SPA hosts a breeding population of Merlin. The planning authority's ecologist initially recommended further information regarding both Hen Harrier and other bird species, including Red Grouse, which had been recorded as breeding on the site in 2014.

11.13.8 In response to FI request item 5, the planning authority provided a range of additional information, as well as a series of mitigation measures, which are summarised in Section 3.4.10 above. The planning authority's ecologist's 2nd report concurs with these findings.

11.13.9 In my opinion, there is sufficient information available regarding potential impacts on all relevant bird species, and the proposed development would not have a significant impact in this regard.

11.13.10 Other vertebrates and invertebrates

11.13.11 Recorded and likely mammals are set out in Section 5.4.2 of the EIS, with reptiles, amphibians, and fish at Section 5.4.3 and invertebrates at 5.4.4.

11.13.12 Table 5.4 of the EIS shows the bats recorded in the vicinity (desk study), including Daubenton's bat within 0.8km. Section 5.4.2.1 details survey results. The further information submitted under Item 7 provides additional details regarding bat movements within the site, and potential impacts from the proposed development. The planning authority's ecologist's 2nd report considers this matter successfully resolved, and I concur with this position.

11.13.13 Habitats

11.13.14 Habitats within the site are mapped in Fig 5.3 of the EIS and are described in Section 5.3.1. The entirety of the current 6-turbine subject site – T9-T14 – is classified as 'Conifer Planation/recently felled woodland'. Appendix 9 consists of a botanical survey of all the turbine base locations.

11.13.15 In terms of impacts on habitats, 6.4ha of forestry would be felled, as per Section 2.3.4.1 of the EISA, due to turbine footprints, roads, and 'turbulence felling'. This is not much different to the original EIS as most of the forestry is in the east of the site.

11.13.16 The planning authority's ecologist's second report finds that this is a modified landscape. I would concur with this position, and would conclude that the impacts on habitats would not be significant.

11.13.17 General issues and protective measures

11.13.18 Appendix 4 of the EIS consists of a preliminary Construction and Environmental Management Plan (CEMP) which covers general issues of construction methodology, and extends to 37 pages. Item 8 of the FI request requested revisions to the CEMP, which was included by the applicant as appendix 8-1 of their submission. The planning authority's ecologist's second report noted that there were anomalies in the commitments made, and that further amendments would be required, should permission be granted. This is reflected in Condition 14 of the planning authority's decision.

11.13.19 Condition 15 of the planning authority's decision confers obligations/powers on the on-site clerk of works to halt works to safeguard the amenities of the area and to ensure the protection of water quality in the catchment of the Blackwater River SAC. I note that the DoAHG had recommended additional powers in this area than had previously been suggested. In my opinion, the condition is robust and appropriate.

11.13.20 On a related matter, I note that the DoAHG explicitly requested that any condition which requires further approval by, agreement with, or consultation with the NPWS in relation to CEMP not be applied (See section 4.3.30 above). The planning authority's conditions are consistent with this request.

11.14 EIA – SOILS AND GEOLOGY, WATER (EIS CHAPTERS 6 AND 7)

11.14.1 Borrow pits and foundation design

11.14.2 General construction methodologies area set out in Sections 3.4.12 and 3.8 of the EIS, with foundation construction methodologies set out in Section 3.4.1.3. All methodologies appear to be consistent with good practice for contemporary windfarms, in my experience.

11.14.3 As per Section 2.2.1 of the EISA, only 2 of the original 4 borrow pits are proposed under this application, the western pair being covered under the permitted development. Borrow pits 3 and 4 extend to 1,847m^2 and 3,510m^2 in surface area respectively. Figures 3.7-3.10 of the EIS depict in detail the phases of development proposed for the borrow pits.

11.14.4 The area planning officer's 2nd report states that he expects the borrow pits to be backfilled, but that their pumping in the interim is acceptable. Section 11.6.1.3 of the FI response document

confirms that the borrow pits will be backfilled with peat once extraction is complete.

11.14.5 Soils and peat stability

11.14.6 Section 6.3.2 of the EIS sets out the soil conditions. Trial pits (west of site only) and probes show that the sites of T9-T14 have peat depths of 0.1-0.5m. Logs are included in Appendix 12b. Section 3.4.4 gives peat overburden plan, including overburden depths which range from 1.3-1.7m for T9-14. It should be noted that not all of the overburden consists of peat. The peat management plan is amended in Section 2.2.2 of the EISA, which stats that a total of 64,350m^3 of peat requires management/storage.

11.14.7 Figure 6.3 of the EIS shows a small area of blanket bog within the larger site, to the north of the development footprint for T4.

11.14.8 EIS appendix 12, a report from AGEC, consists of a peat stability assessment. It reiterates that peat thicknesses range from 0 to 0.6m and states that slopes in the relevant areas range from 1 to 12 degrees. My own measurements of the submitted drawings indicate that slopes vary between around 1.4 degrees (T11) to around 3.7 degrees, with the proposed road to T14 being around 2.86 degrees. The steepest part of the site where works are proposed is the new alignment access road from the eastern entrance which is in the order of 14 degrees. As such, the figures in the report are broadly consistent with my own calculations. I note that the botanical survey of turbine base locations stated that slopes were up to 20 degrees. I would not be overly concerned with this discrepancy, as this information appears to have been gathered by way of visual inspection.

11.14.9 The AGEC report says failure generally occurs between 3 and 8 degrees, and calculates the Factor of Safety (FoS) for each turbine location. The location for T8 has the deepest peat and steepest slope, and therefore – unsurprisingly – the lowest FoS at 2.7-3.9. However, this is well above the figure of 1.3 cited as indicating acceptable stability. In any event, T8 is outside of the current subject site. The lowest FoS for the 6 turbine scheme is in the order of 12-25.

11.14.10 The planning officer's first report finds that the residual risk in this area is low. I would concur with this assessment.

11.14.11 Hydrology and hydrogeology

11.14.12 *Surface water and groundwater drainage*

11.14.13 Figure 7.2 of the EIS shows surface water catchments for site, with Figure 7.3 showing detailed drainage within the site itself.

T9+T10 appear to drain to Glennagurracat Stream, T11, T12, T13 and BP3 to the Glannaharee River, with all these subsequently to the Glen River. T14 +BP4 drain to the Awnamnamarva River, which drains to the northeast, feeding the River Lyre.

11.14.14 Sections 7.3.8 and 7.3.9 of the EIS give groundwater and surface water statuses under the Water Frameworks Directive. All are good, moderate, or high. Wells and public water sources are mapped on Fig 7.5.

11.14.15 The planning officer's first report notes reports of flooding 4km downstream in the Glen River catchment.

11.14.16 Item 11 of the further information request (See Section 3.4.15 above) highlighted inaccuracies/errors in the run-off calculations. These were subsequently corrected to the satisfaction of the planning authority.

11.14.17 *Protective works*

11.14.18 The proposed site drainage management measures are set out in detail in Section 3.6 of the EIS, with Section 5.5.2.1.2 discussing mitigation by design around the issue of drainage. Drainage management is to be ultimately by disposal to over-vegetation flow.

11.14.19 *Decommissioning*

11.14.20 Section 3.10 of the EIS discusses decommissioning, and proposes to leave foundations in situ. Condition 3 of the planning authority's decision requires that all foundations be removed following full or partial decommissioning.

11.14.21 The first party appeal challenges this condition (see Section 8.4.2 above), asserting that leaving foundations in situ is considered to be more environmentally prudent. I would concur with this assertion. The piles and pileheads would be relatively inert features within the subterranean system, but their removal would be, in my opinion, more potentially disruptive than the construction phase.

11.14.22 *Cable route*

11.14.23 Appendix 2-2 of the EISA shows a map of proposed culvert crossings for the cable route. Two crossings are proposed 'in stream', with 16 not in stream. The works are detailed in the following table. All works are to be compliant with IFI guidelines (included).

11.14.24 The bridge crossings are discussed in Section 2.3.1 of the EISA, which states that all crossings will be made within the deck of the bridge, with no requirement for in-stream works. This is reflected

in the 'Method Statement for Installation of 38kV Ducting between Esk 38kV Substation (Esk South) and the Boggeragh 110kV substation (Crinaloo South), Co. Cork' document submitted as Appendix 2-3 of the EISA.

11.14.25 In my opinion, these works reflect good practice, and are adequately described. There are inconsistencies between the bridge crossings proposed under this section, and those proposed under the mitigation strategy for architectural heritage projection, as detailed in Chapter 11 of the EIS and discussed in Section 11.17 below. I will discuss these inconsistencies, and potential resolution of same, in Section 11.19 below, which deals with interactions of the forgoing sections.

11.14.26 *Potential impacts*

11.14.27 On the issue of cumulative impact, Fig 7.7 of the EIS shows the Glen River Surface Water catchment in the context of existing and permitted windfarms. The subject proposal (including permitted turbines) Boggeragh Phase 1, Boggeragh Phase 2, and Carrigcannon windfarms all effectively straddle this catchment, with in or around half of the turbines of each scheme within the Glen River catchment.

11.14.28 The proposed drainage measures and impacts on surrounding surface water and groundwater networks was reviewed by the planning authority's Ecologist and also by external consultants O'Callaghan Moran (OCM). The OCM report following the receipt of FI states that they are satisfied with the information received, and that the issues relating to Geology, Hydrology, and Hydrogeology have been satisfactorily addressed. The subsequent report from the planning authority's Ecologist is largely satisfied with the scheme and with the submitted FI, and recommends conditions.

11.14.29 The area planning officer's 1st report considers that the residual risks to geology and hydrology associated with the construction, operation, and decommissioning of the site are very low. The area planning officer's 2nd report, following the receipt of further information considers that the impacts on surface water and groundwater have been successfully mitigated by design and avoidance. I concur with these conclusions.

11.14.30 I note the planning authority's Condition 17 requiring that there be no polluting material issuing from the site. I do not consider this to be an appropriate condition in that it is unquantifiable, subjective, and unenforceable. The control of such matters is best addressed through the undertakings inherent to the proposal, including the CEMP, rather than a 'performance condition'.

11.15 EIA – AIR AND CLIMATE (EIS CHAPTER 8)

11.15.1 Chapter 8 of the EIS discusses potential emissions during construction, namely from construction machinery and due to dust arising. During the operational phase there would be effectively no emissions, with a net benefit due to reduction in dependency on fossil fuels.

11.15.2 I note the planning authority's Condition 16 requiring that there be no nuisance arising from dust. I do not consider this to be an appropriate condition in that it is unquantifiable, subjective, and unenforceable. The control of dust is best addressed through the undertakings inherent to the proposal, including the CEMP, rather than a 'performance condition'.

11.16 EIA – LANDSCAPE (EIS CHAPTER 10)

11.16.1 Site context in visual terms

11.16.2 As set out in more detail in section 2.0 above, site of the 6-turbine scheme consists of rolling uplands, covered in the commercial forestry of various stages of development. The wider area consists of a rolling topography of intermittent farmland and forestry, interspersed with small villages and dispersed housing.

11.16.3 The summit of Bweengduff, to the immediate north of the site, accommodates a number of telecommunications masts, and the north-eastern slopes of this peak complex are somewhat steeper than elsewhere in the vicinity. From the toe of these slopes, a lower plain extends towards the town of Mallow.

11.16.4 There are wind turbines in existence and under construction to the west and southwest of the subject site in the Boggeragh 1, Boggeragh 2, and Carrigcannon schemes (see section 6.0 above for details). By way of comparison, the permitted height to tip of the Boggeragh 1 and Boggeragh 2 turbines are 120m and 136.5m respectively. The parent permission on this site (PL04.240281), on which the applicant is relying for T1-T8 of the overall scheme is 126m, whereas the subject proposal would be 136.5m. This can be represented graphically as follows.

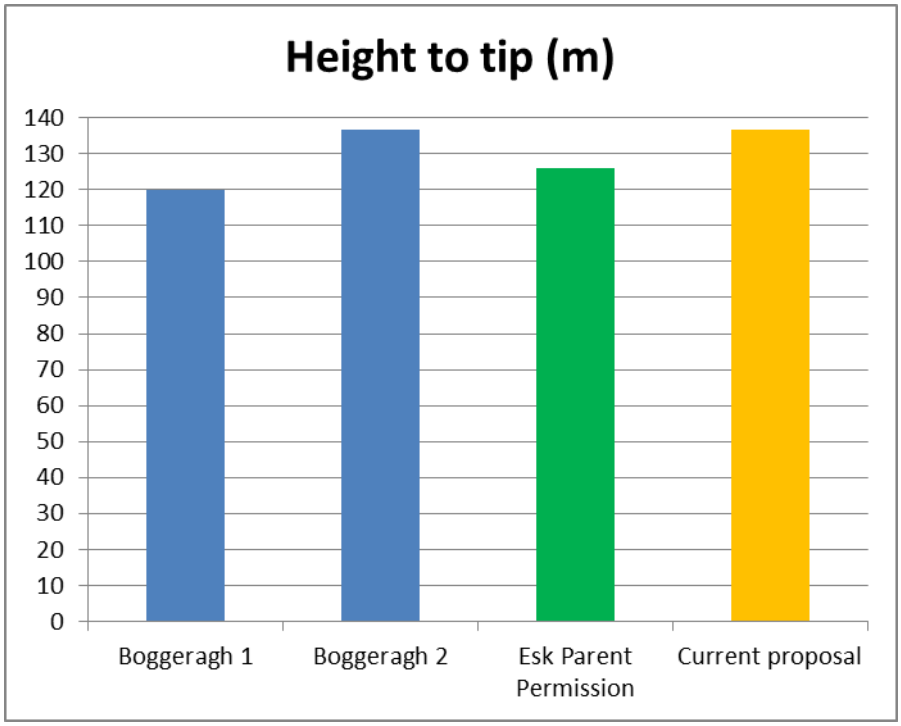


Figure 1

11.16.5 Visual impact as presented by the applicant

11.16.6 The application is accompanied by a series of photomontages which would appear to be consistent with contemporary best practice. I have cross-referenced a number of the photomontages against the submitted drawings and available mapping, and consider them to be an accurate representation, insofar as I can ascertain.

11.16.7 Section 10.7.6 of the EIS provides a Combined Visual Impact Assessment. Section 10.7.8 classifies these impact as ranging from imperceptible to moderate, with those at the higher end (moderate) located at VP13, 14, 15, 16, 17, which are between the subject site and Boggeragh 1. I note that the area planning officer's first report presents a comparable itemised assessment of each viewpoint, which is helpful.

11.16.8 I note that the Glouminane Residents in their appeal criticise the selection of viewpoints for photomontages (see Section 8.3.2 above). I also note that the planning authority requested additional viewpoints under FI item 4. In my opinion these additional photomontages were necessary, and filled clear gaps in the information presented by the applicant.

11.16.9 The area planning officer's 2nd report considers the revised photomontages acceptable. I would tend to concur with this assessment. My only additional contribution on this matter would be that viewpoint V2, which is the only location in the vicinity of the town of Mallow, is from a location that is quite well screened

by trees in the middle distance. The R620, in the town's southern environs, in and around the Church View junction, is aligned such that the view is focussed on the summit of Bweengduff, with the telecoms masts visible in the distance. Some views from this location may have been helpful, although I note that at 12km or so from the site, it is unlikely that the visual impacts would be found to be significant.

11.16.10 A notable aspect of the visual impact of the scheme is that it would occur in the context of the permitted schemes at Boggeragh (1+2) and Carrigcannon. Several 'Zone of Theoretical Visibility' (ZTV) maps were prepared, notably Fig 10.8 which shows additional cumulative visibility, which is not much in quantitative terms. When viewed in conjunction with the photomontages, it would appear that much of the existing ZTV 'coverage' to the north and northeast is due to the permitted turbines within this scheme, rather than Boggeragh and Carrigcannon, which are located on the west side of the Glen River 'basin'.

11.16.11 When viewed from the east, the scheme would also be viewed in conjunction with a recently permitted single permitted turbine at Knockavaddra (See Section 6.2 above), which is incorporated in the FI photomontages. I calculate that the height to tip of this turbine would be around 65% of the subject proposal, with a swept area of around 20% of the subject proposal. As such, this smaller turbine in close proximity would read somewhat incongruously. This mix of turbine sizes is advised against by the 2006 guidelines. However, It would seem unfair to penalise the subject proposal for this reason. I note that the 6 proposed turbines would be larger than the 8 permitted turbines to the west, within the larger scheme, but not significantly.

11.16.12 The planning officer notes that the proposed 6-turbine extension would increase visibility to the Southeast and South, towards Bweeng and Donoghmore, which is a fair assessment of the likely impacts.

11.16.13 Performance against planning policy

11.16.14 The 2006 guidelines present 6 broad categories as follows, with differing recommended responses for each.

- Mountain moorland
- Hilly and flat farmland
- Flat peatland
- Transitional marginal land
- Urban / industrial
- Coast

11.16.15 Section 10.3.2 of the EIS characterises the receiving landscape as 'Hilly and Flat Farmland'. I concur with this characterisation. The guidelines' associated siting and design guidance for this landscape can be summarised as follows, along with my assessment of how the development performs in relation to this guidance. For the purpose of this stage of the assessment, I will consider the 14-turbine scheme due to the fact that it would be perceived as a single unit.

Topic	**2006 guidance (summarised)**	**Scheme's performance**	
Location	Ridges and plateaux are preferred.	The site is located on a plateaux, and/or ridges within a plateaux	Good
Spatial extent	Limited	I would classify the proposed development as being of moderate spatial extent.	Mixed
Spacing	Regular, responding to the underlying pattern field pattern.	Compliant	Good
Layout	Linear, and staggered linear on ridges and hilltops	The layout of the scheme could reasonably be considered as linear, albeit generally 2 turbines deep, and in a curved arc from T7 to T14.	Mixed
Height	Will tend not to be tall. Except where they are on a high ridge or hilltop of relatively large scale.	The turbines proposed are tall (136.5m is significantly greater than 100m, as per the classifications of the guidelines), although the dispensation for 'high ridge or hilltop of relatively large scale' could possibly be considered applicable in this instance.	Mixed
Cumulative effect	Visibility of two or more wind energy developments is usually acceptable.	4 schemes across a number of clusters would be visible in the immediate vicinity.	Good

Table 9

11.16.16 As such, the proposed development's performance against the 2006 guidelines in terms of visual impact is good to mixed.

11.16.17 Section 10.3 of the EIS discusses the proposed development in the context of the 2009 County Plan and the [at time of writing] Draft 2013 County Plan. Figure 10.2 shows a number of scenic routes in the area. These are the same in the 2014 plan as in the 2009 plan. I have cross referenced against the ZTV mapping, and all turbines will be visible from at least part of scenic routes S14, S18, and S19 but not S20.

11.17 EIA – CULTURAL HERITAGE (EIS CHAPTER 11)

11.17.1 Section 11.4 details two recorded monuments in the study area. A 'stone row' to the south of T13 has been disturbed, but mitigation is nonetheless proposed. Within the wider scheme, a 'redundant record' is located near T1-4, and an unrecorded limekiln exists in the west of the site. These locations are to be avoided.

11.17.2 There are three bridges in the vicinity that are listed on the National Inventory of Architectural Heritage. The cable route is stated as having the potential to negatively affect 2 of these bridges, including Grenville Bridge, where the cable route crosses the Glen River. The mitigation strategy, set out in Table 11.3 of the EIS, states that cables should be placed under river bed and not attached to bridge structure. This approach may be preferable from a cultural heritage perspective, but may be at odds with objectives regarding surface water protection. I will discuss this further in Section 11.19 below.

11.17.3 I note that the Department of Arts, Heritage, and the Gaeltacht recommended implementing the measures contained in the EIS. The planning authority's archaeologist initially recommended FI, and then conditions. Conditions 9, 11, 12, and 13 of the planning authority's decision relate to archaeology.

11.18 EIA – MATERIAL ASSETS (EIS CHAPTER 12)

11.18.1 Roads

11.18.2 Section 3.5 of the EIS discusses access and transportation. The likely arrival of components would be via Foynes, with Figure 3.24 showing the detailed route. Other nearby windfarms have had parts come via Mallow.

11.18.3 Section 12.1 of the EIS goes through the traffic impacts in a quantitative sense. During the construction phase, there would be up to a 6.2% increase in traffic in the N72, with greater proportional increases on the local road network.

11.18.4 Detailed route assessment re the large loads was undertaken at 9 locations under the original EIS for the 14-turbine scheme, as shown in Fig 12.1.5. Section 12.1.5.1 of the EIS shows that at location 2, temporary acquisition of land would be required.

Significant works and land acquisition would be required at location 3. Roadside vegetation would need to be trimmed at Location 5. No works are proposed at location 7 (short reversing manoeuvre), and location 8 is within the site boundary.

11.18.5 Section 11.1 of the EISA refines the proposal based on the 6-turbine scheme, and says that only the eastern route will be used. As such, only Location 2 is critical to the subject proposal in that it requires physical interventions and temporary land take.

11.18.6 Further information Item No 1 clarifies concerns of the planning authority around delivery routes, 'no go' routes, and road maintenance.

11.18.7 Section 11.1.1 of the EISA deals with the traffic implications of the grid connection cabling works.

11.18.8 The NRA recommend conditions in their submission. The roads engineer initially recommended further information (as incorporated into the planning authority's request), followed by a recommendation for conditions in the 2nd report (see Sections 4.2.1 and 4.7.37 above). Conditions 27-31 of the planning authority's decision address construction access routes and other related matters.

11.18.9 In relation to the works at Location 2, while the engineering requirements are clear, and appear to be a reasonable approach to the task at hand, there is no information presented about how these works might be delivered. There are no consents from affected 3rd parties. However, I do not consider this to be an impediment to considering a grant of permission. It is my opinion that this matter must be viewed in light of the provisions of Section 34(13) of the Planning and Development Act 2000 (as amended). If the applicant cannot secure the necessary permissions to enable construction access, the development cannot be implemented. Indeed, Condition 34 of the planning authority's decision is consistent with this principle.

11.18.10 Telecommunications

11.18.11 Potential impacts of the proposed development on telecommunications infrastructure is of particular relevance at this site due to the location of a number of masts with multiple telecoms operators at the summit of Bweengduff, just north of the site boundary. Turbine structures can interfere with signals by interrupting, permanently or intermittently, 'line of site' from these installations to other fixed installations.

11.18.12 Tetra in their submission to the EIS scoping look initially for 500m exclusion from Bweengduff, and in their submission to the planning authority, they state that they require additional details.

O2 in their initial submission to the EIS say that Bweeng is one of the busiest sites for O2 in the southern part of the country, with 25 live links from this location. Three also have 7 links and require a 100m exclusion zone. UPC also have links, as do Airspeed telecom, Ripplecom, Meteor, and Surecom, who raise concerns with some of the locations, but not any of the turbines proposed under the 6-turbine scheme. Towercom also made a submission to the planning authority.

11.18.13 Figure 2.4 of the EIS shows site-specific constraints, including telecoms 'corridors', although only Eircom, Three, Vodafone, and Mosaic appear to have been mapped. Furthermore, the turbine locations are not shown on this constraints map. Section 12.2 of the EIS discusses potential impacts on telecommunications, stating that lines of sight have been mapped and have been taken into consideration.

11.18.14 Unsolicited further information (Section 3.3 above) asserts that telecoms issues have been resolved. Item 2 of the planning authority's further information request seeks further detail in this regard. In response, the applicants state that they have consulted with the telecoms providers and that the matters have been resolved. Appendix 2-1 and 2-2 of the FI response document consists of emails between the applicants'' agent and both Tetra Ireland and Towercom, which appear to show that the matters have been resolved to these providers' satisfaction. It is not clear whether other providers have any outstanding concerns.

11.18.15 I note that Condition 37 of the planning authority's decision stipulates that there must be no substantive electromagnetic interference which would result in a deterioration in the quality of other services provided in the area, and that in the event of interference or loss in communications signal quality, the developer shall consult with the service provider concerned and undertake remedial works to rectify the problem at the developer's expense.

11.18.16 I would have some concerns regarding the extent to which this condition could be implemented from a practical and procedural perspective. In practical terms, given the likely issue would be the physical presence of a turbine between two fixed installations, it is hard to see what remedial works could take place other than the removal of the turbine. In procedural terms, it is hard to see how this bilateral issue could be resolved fairly without an objective measurement or an outside arbitrator of the issue.

11.18.17 Notwithstanding these concerns, given the extent of involvement of the telecoms industry in the process to date, and the opportunities afforded them to contribute, and the work done by the applicant in attempting to address the issues, on balance I

would be prepared to accept the planning authority's approach on this matter.

11.18.18 Other material assets

11.18.19 The Glouminane residents cite concerns regarding the potential impacts on a horse training facility to the north of the site. The 1st party response asserts that there is no evidence of effects on livestock. I do not consider that there is sufficient objective evidence on the issue to warrant a refusal of permission on these grounds.

11.18.20 I note that the Irish Aviation Authority require conditions, which are reflected in Conditions 20 and 21 of the planning authority's decision.

11.18.21 The Duhallow Way walking route passes through the site. Section 3.4.2.5 of the EIS discusses mitigation for this route during construction, with segregation between walkers and construction traffic. I consider this to be a reasonable approach, and that there would be no unduly negative long term impacts on this walking route.

11.19 EIA – INTERACTION OF THE FOREGOING (EIS CHAPTER 13)

11.19.1 Table 13.1 of the EIS consists of a matrix which considers potential interactions between EIA topics during the construction and operational phase. In my opinion, it covers this topic comprehensively

11.19.2 The primary interaction of note is the potential for fugitive material arising during the construction period to enter surface and groundwater watercourses, with consequent impacts on flora and fauna. However, with the application of standard construction methodologies, such risks can be avoided.

11.19.3 In my opinion, this and all other interactions have largely been addressed as they arose in the course of previous sections of this report.

11.19.4 One area that requires some focus is the proposed bridge crossing of the Glen River at Grenville Bridge. As referred to in Sections 11.6.18, 11.14.25, 11.17.2 above, there is an inconsistency between the measures set out in the Cultural Heritage chapter of the EIS, which state that the cables should be placed under the river bed and not attached to the bridge structure, and the measures set out in EISA and the revised NIS, which state that the cable would be buried within the bridge deck.

11.19.5 In resolving this inconsistency, I consider it appropriate to rule out the in-stream crossing. I consider that it would be possible to

locate the cable within the bridge deck, or affixed to the bridge structure, without undue negative impacts on cultural heritage.

12.0 SCREENING FOR APPROPRIATE ASSESSMENT UNDER THE HABITATS DIRECTIVE

12.1 Significant inputs to the consideration of this issue are available from:

- The Applicants' NIS (Appendix 7 of the EIS), which was superseded by the revised NIS (standalone document submitted by way of further information)
- The reports from the planning authority
- The submission of the DoAHG.
- 3rd party submissions

12.2 The plan is not directly connected with or necessary to the management of a Natura 2000 site.

12.3 The proposed development is for a 6 turbine windfarm, as described in detail in sections 3.0 above.

12.4 Species, habitats, surface drainage patterns, etc. are all described in full in Chapters 5, 6, and 7 of the EIS and in the Natura Impact Statement (NIS)

12.5 In order to screen for appropriate assessment, I will undertake 6 steps, as follows

12.6 STEP 1: IDENTIFY EUROPEAN SITES WHICH COULD POTENTIALLY BE AFFECTED - CONSIDER SOURCE-PATHWAY-RECEPTOR

12.6.1 There are 3 European sites within 15km of the study area, as follows.

- Blackwater River (Cork/Waterford) Special Area of Conservation, site code 002170, which is located adjacent to the western study area boundary by virtue of the designation extending up the main river's tributaries. I shall refer to this site as the **'Blackwater SAC'**
- Killarney National Park, Macgillicuddy Reeks and Caragh River Catchment Special Area of Conservation, site code 000365, located 14.6km west of the study area. I shall refer to this site as the **'Killarney SAC'.**

- The Mullaghanish to Musheramore Mountains Special Protection Area, site code 004162, which is located 5.7km to the southwest of the study area. I shall refer to this site as **'the SPA'**.

12.6.2 On the basis of the source-pathway-receptor principle, I do not consider that there is any viable connection between the subject site and the Killarney SAC, which is almost 15km distant, and located in a separate catchment. As such, I propose to exclude it from further consideration.

12.6.3 I note that the appeal from the BTOC says the site is hydraulically connected to Blackwater SAC, and is close to SPA. I would agree with this contention. Both these sites should be brought forward for consideration.

12.7 STEP 2: IDENTIFY THE CONSERVATION OBJECTIVES OF THE RELEVANT SITES

12.7.1 Blackwater SAC

12.7.2 The NPWS has published site-specific conservation objectives for the SAC[5]. I note that the revised NIS, dated April 2015, draws on these conservation objectives, which are dated July 2012, in the Stage 2 AA. The qualifying interests for this SAC include 10 habitats, as follows

1130 Estuaries

1140 Mudflats and sandflats not covered by seawater at low tide

1220 Perennial vegetation of stony banks

1310 Salicornia and other annuals colonizing mud and sand

1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

1410 Mediterranean salt meadows (Juncetalia maritimi)

3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation

91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles

*91E0 *Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*

*91J0 *Taxus baccata woods of the British Isles*

[5] http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002170.pdf

And 9 species of flora/fauna, as follows

1029 Freshwater Pearl Mussel Margaritifera margaritifera

1092 White-clawed Crayfish Austropotamobius pallipes

1095 Sea Lamprey Petromyzon marinus

1096 Brook Lamprey Lampetra planeri

1099 River Lamprey Lampetra fluviatilis

1103 Twaite Shad Alosa fallax

1106 Atlantic Salmon Salmo salar (only in fresh water)

1355 Otter Lutra lutra

1421 Killarney Fern Trichomanes speciosum

12.7.3 The conservation objectives document lists a number of supporting documents and data sources, and provides specific conservation objectives for each qualifying interest, giving measures, targets, and notes across a range of attributes for each species/habitat. There are notably 11 attributes for the Freshwater Pearl Mussel (FPM).

12.7.4 The document is accompanied by a series of maps showing the distribution of a number of qualifying interests. Map 8 shows the site as falling within a FPM catchment, but the adjacent Glen River is not shown as an area of current distribution or suitable habitat. The main channel of the Blackwater into which the Glen River flows is shown as a section of river with current distribution.

12.7.5 SPA

12.7.6 The conservation objectives are to maintain or restore the favourable conservation condition of a single species, the Hen Harrier.

12.8 STEP 3: IDENTIFY THE POTENTIAL A) LIKELY AND B) SIGNIFICANT EFFECTS OF THE PROJECT WITH REFERENCE TO THE SITE'S CONSERVATION OBJECTIVES

12.8.1 In summary, the impacts relate to the following, with reference to the relevant Natura 2000 sites' conservation objectives.

- Construction: Run-off of silt, fuels/oils, construction materials to watercourses, loss of habitat for fauna, avoidance by fauna

- Operational: Bird/bat collision with turbines, loss of habitat for fauna, avoidance by fauna.

12.8.2 With reference to this information, I would identify the significance of the potential risks as follows.

	Potential significant impact	**Potential receptor**
Blackwater SAC	Run-off	The subject site drains to the Glen River catchment where designated habitats or species could be affected by contaminated run-off
SPA	Turbine collision	Designated species' (Hen Harrier) flight paths could cross the proposed development.
	Avoidance	Designated species (Hen Harrier) could lose habitat by virtue of direct habitat loss, and by avoidance of the turbines.

Table 10

12.9 STEP 4: AS ABOVE, CONSIDERING IN-COMBINATION EFFECTS

12.9.1 I note the presence of other windfarms in the vicinity. However, I do not consider that there are any specific additional in-combination effects that arise from other plans or projects.

12.10 STEP 5: EVALUATE POTENTIAL EFFECTS ABOVE

12.10.1 Blackwater SAC

12.10.2 Using the source-pathway-receptor model, I do not consider, on the basis of the information submitted, that the proposed development would be likely to impact on the qualifying interests of the Blackwater SAC through the potential mechanisms outlined above.

12.10.3 The design of the drainage systems on site, which I consider to be an integral part of the project itself, would be sufficient to prevent run-off off pollutants to the surrounding watercourses, which connect to Natura 2000 sites.

12.10.4 SPA

12.10.5 While the site is not within the SPA, it has been shown to be important potential habitat for feeding and/or nesting of Hen Harrier. As such, the impacts of the proposed development warrant consideration.

12.10.6 On the basis of the information provided by the applicant regarding the behaviour patterns of the Hen Harrier, I do not consider that the proposed development would be likely to have an impact on Hen Harrier by virtue of turbine collision. The heights at which Hen Harrier fly do not generally overlap with the swept path of turbine blades. Collision risk was quantified within the EIS (see section 11.12.9 above), and have been shown to be minimal.

12.10.7 I do consider however, setting aside the proposed mitigation measures, as required at this stage, that there is a risk to Hen Harrier from proposed habitat loss by direct loss of habitat and from avoidance.

12.11 STEP 6: DETERMINE WHETHER OR NOT LIKELY SIGNIFICANT EFFECTS, INDIVIDUAL OR IN COMBINATION WITH OTHER PLANS OR PROJECTS, ON THE EUROPEAN SITES, CAN BE REASONABLY RULED OUT ON THE BASIS OF OBJECTIVE SCIENTIFIC INFORMATION.

12.11.1 On the basis of my conclusion above, I do not consider that likely significant effects, individual or in combination with other plans or projects, on the European sites, can be reasonably ruled out on the basis of objective scientific information. 'Stage 2' Appropriate Assessment is required in relation to the SPA.

12.11.2 I note that the applicant's EIS brought forward both the Blackwater SAC and the SPA for Stage 2 AA, and that the planning authority's ecologist agreed with this approach.

13.0 APPROPRIATE ASSESSMENT

13.1.1 'Stage 2' Appropriate Assessment warrants consideration of steps 1-4 above in the first instance, which I will take as read. The next step is to consider mitigation measures, both those proposed by the applicant and those that may be considered necessary by the board.

13.1.2 In this regard, it is necessary to consider the proposed mitigation by the applicant in response to FI request item No 5, as detailed in Section 11.12.18 above, which effectively is to provide compensatory foraging habitat outside the site boundaries on other suitable Coillte lands. This measure has found broad acceptance among the parties to the appeal.

13.1.3 It is also necessary to consider the proposed additional mitigation measures stipulated by condition by the planning authority, as potential additional mitigation. As per my assessment at 11.12.23 above, I do not consider that the temporary omission of turbines T10 and T13 is a necessary or appropriate measure, and as such, I do not propose to consider Condition 4 as potential mitigation

under this assessment. I do, however, propose to consider Condition 5, which requires a pre-construction survey and 500m exclusion of all works from a pre-nesting breeding site and/or nest.

13.1.4 I note that while there are other windfarms in the vicinity, similar compensatory mitigation is provided for by these schemes.

13.1.5 I note that the planning authority's ecologist's 2nd report included a Habitats Directive Assessment, which effectively shadows the structure of the NIS and concurs with its conclusions (see Section 4.7.17 above)

13.1.6 I consider that the mitigation proposed by the applicant, and also the mitigation required by way of Condition 5, would be sufficient to offset the potential effects on Hen Harrier. As such, I consider it reasonable to conclude on the basis of the information on file, which I consider adequate in order to carry out a Sage 2 Appropriate Assessment, that that the proposed development neither individually or in combination with other plans or projects would not adversely affect the integrity of the European Site Code 004162, or any other European Site, in view of the site's conservation objectives.

14.0 CONCLUSION AND RECOMMENDATION

14.1 CONCLUSIONS

14.1.1 At this point I will draw together my conclusions from the assessment above.

14.1.2 Conclusions regarding Principle of Development and Policy Context

14.1.3 I am happy to assess the proposed development as a 6-turbine scheme as per the further information submission. The proposed development is broadly supported by policy context at a national and local level.

14.1.4 Conclusions regarding Legal and Procedural Matters

14.1.5 I have difficulties with the framing of the proposed development as a loose 'envelope' without specific dimensions. I recommend that this be addressed by condition tying down the proposed development to tighter 'envelope' as per Table 7.

14.1.6 I consider that the proposal is consistent with the principles set out in the Ó Grianna case with regard to grid connection and EIA.

14.1.7 The applicant has sufficient legal interest in the lands.

14.1.8 I do not consider that there is sufficient justification to grant a 10 year permission.

14.1.9 Conclusions regarding EIS – Compliance with Planning and Development Regulations 2001

14.1.10 The proposed development is legally compliant in this regard.

14.1.11 Conclusions regarding EIA – Alternatives Considered (EIS Chapter 2)

14.1.12 The applicant has presented a sufficient exploration of this topic.

14.1.13 Conclusions regarding EIA – Human Beings – Separation Distances (EIS Chapter 4)

14.1.14 The nearest houses to the 6-turbine scheme are in the order of 720m removed, which is reasonably distant as compared with many contemporary windfarm proposals nationwide.

14.1.15 Conclusions regarding EIA – Human Beings - Noise and Vibration (EIS Chapter 9)

14.1.16 On the basis of my assessment above, I consider that the applicant's methodology for assessing noise impacts was largely acceptable, albeit with some questionable aspects, which I have worked through above. On the basis of the modelling presented, it would appear that the noise impacts on sensitive receptors – houses – would be within acceptable limits. I note the planning authority's conditions in this area, but consider an approach consistent with established practice would be appropriate.

14.1.17 Conclusions regarding EIA – Human Beings – Shadow Flicker (EIS Chapter 4)

14.1.18 I have concerns with some of the modelling presented, and have particular concerns regarding the mitigation proposals insofar as they place residents in the community in a difficult position as regards implementation. In the absence of more detailed information on the times of shadow flicker exceedances, I propose to require a relatively broad set of mandated shutdowns of T13 and T14 by way of condition.

14.1.19 Conclusions regarding EIA – Flora and Fauna – Hen Harrier (EIS Chapter 5)

14.1.20 There is strong evidence to the effect that this site is suitable habitat for Hen Harrier, and is being used as such by this protected species. The applicants propose compensatory habitat by way of mitigation, which is a measure that appears to be broadly supported by the parties and agencies. I concur with this approach.

14.1.21 Conclusions regarding EIA – Flora and Fauna – Other Species (EIS Chapter 5)

14.1.22 Freshwater Pearl Mussel are present downstream of the proposed development. However, the construction methodologies proposed are such that it is my opinion that there would be no undue risk to this species. There are no other species of flora or fauna of specific concern, in my opinion.

14.1.23 Conclusions regarding EIA – Soils and Geology, Water (EIS Chapters 6 And 7)

14.1.24 The proposed development is acceptable as regards risk of peat slippage, and the measures proposed in relation to surface and groundwater control are consistent with good practice, and sufficient to reduce risk to an appropriate level, in my opinion. I concur with the first party appeal on the issue of removing foundations post decommissioning, and propose that conditions be amended accordingly.

14.1.25 Conclusions regarding EIA – Air and Climate (EIS Chapter 8)

14.1.26 The proposed development is acceptable in this regard.

14.1.27 Conclusions regarding EIA – Landscape (EIS Chapter 10)

14.1.28 The information as presented by the applicant, as supplemented by way of further information, amounts to a comprehensive and accurate representation of the proposed development's impact on the landscape. The lack of certainty on the terms of the scheme due to the 'envelope' proposal presents a difficulty, although it is nevertheless possible to get a good sense of the scheme's likely impact.

14.1.29 While the scheme would be visible from some scenic routes, I do not consider that this would warrant a refusal of permission. On the basis of the presented impact and the prevailing policy context, I consider that the proposed development would be acceptable in terms of its visual impact and impacts on the landscape.

14.1.30 Conclusions regarding EIA – Cultural Heritage (EIS Chapter 11)

14.1.31 This issue has been sufficiently explored, and the features on site would be adequately protected by way of condition.

14.1.32 Conclusions regarding EIA – Material Assets (EIS Chapter 12)

14.1.33 The haulage route for turbine components does not appear unduly problematic, albeit that the consents for works to some junctions have not been secured.

14.1.34 The impacts on telecommunications infrastructure have been discussed at length between the parties due to the presence of a number of masts on Bweengduff hill. While these issues have not been shown to have been resolved completely, I consider that this matter can be addressed by way of condition.

14.1.35 Conclusions regarding EIA – Interaction of the Foregoing (EIS Chapter 13)

14.1.36 There is an issue regarding bridge crossings of the cable route, with mitigation measures in respect of surface water and architectural heritage presenting conflicting methodologies. In resolving this matter, I consider it appropriate to specify that the bridge crossing be 'in deck' or attached to the bridge structure, rather than 'in stream'

14.1.37 Conclusion regarding appropriate assessment

14.1.38 As per my analysis at 12.0 above, the proposed developmetn is acceptable with regard to the tests required under AA, and the board is not precluded from considering a grant of permission in this instance.

14.2 RECOMMENDATION

14.2.1 I recommend that permission be granted. The proposed developmetn is broadly consistent with planning policy, and has been shown to be acceptable in terms of its impacts on the public and on environmental receptors, subject to conditions.

14.2.2 Recommended conditions

14.2.3 I consider that the planning authority's conditions form a good basis for a decision by the board. However, I to recommend some omissions, additions, and amendments. In the interests of clarity, I present a summary of these amendments in the table below.

PA Cond.	Topic	My recommendation	Recomm-ended Cond.
1	Standard Cond 1.	Amend as per ABP	1
2	10 year permission	Omit, as per S11.6.22	-
3	25 year operation / decomm.	Amend as per 11.14.19	4
4	Temp omit T10 and T13	Omit as per S11.12.23	-
5	Pre-constr. HH monitoring	Retain	5
6	Post-constr. HH monitoring	Retain	6
7	Mitigation as per EIS/NIS	Retain	7

8	S47 re FHMAs	Retain	8
9	Archaeological buffer 1	Retain	9
10	Felling as per guidelines	Retain	11
11	Re project archaeologist	Amend as per ABP	10
12	Archaeological req'ments	Combine with 11	-
13	Archaeological buffer 2	Combine with C9	-
14	Works as per revised CEMP	Amend as per ABP	12
15	Re Clerk of Works	Retain	13
16	No dust nuisance	Omit as per S11.15	-
17	No polluting material	Omit as per S11.14.26	-
18	Re waste disposal	Omit Covered in CEMP	-
19	Reinstatement programme	Amend re foundations	14
20	Aeronautical requirements 1	Amend as per ABP	15
21	Aeronautical requirements 2	Combine with 20	-
22	BATNEEC re turbines	Omit as per S11.6	-
23	Re-lay turf around bases	Retain	16
24	Noise levels	Amend as per ABP	17
25	Noise re phasing	Omit as per 11.10.22	-
26	Turbine colour by compliance	Amend as per ABP	18
27	Delivery routes	Retain	19
28	Re borrow-pit traffic	Retain	20
29	Traffic Management Plan	Retain	21
30	Keep public roads clean	Retain	22
31	Sight distances	Retain	23
32	Drainage to public road	Retain	24
33	Portaloos	Retain	25
34	Works to roads, consents	Retain	26
35	Bridge survey report	Retain	27
36	No telecoms interference 1	Amend as per ABP	28
37	No telecoms interference 2	Combine with 36	-
38	Rotation, cabling, structures	Combine with 26	-
39	Shadow flicker	Amend as per 11.11.25	29
40	Cash bond	Amend as per ABP	30
41	Development contribution	Amend as per ABP	31

Table 11

14.2.4 In addition to the above amendments, I would propose the following additional conditions.

Condition	See Section above	Cond. No. below
Tighter 'envelope' for turbines.	11.6.1	2
Specify cable bridge crossings	11.18.10	3

Table 12

15.0 REASONS AND CONSIDERATIONS

Having regard to:

(a) the national policy with regard to the development of alternative and indigenous energy sources and the minimisation of emissions of greenhouses gases,

(b) the Wind Energy Development Guidelines – Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government in June, 2006,

(c) the location of the site in an area which is identified in the Cork County Development Plan 2014 as an area 'Open to Consideration' where it is the policy of the planning authority to facilitate the development of appropriate wind energy proposals, and

(d) the nature of the landscape in the area and the absence of any ecological designation on the site,

it is considered that, subject to compliance with the conditions set out below, the proposed development would not seriously injure the visual amenities or landscape character of the area, would not seriously injure the amenities of the area or of property in the vicinity, would be acceptable in terms of traffic safety and convenience, would not give rise to an unacceptable risk of environmental pollution or have an adverse impact on the ecology of the area and would not, therefore, be contrary to the proper planning and sustainable development of the area.

Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by the further plans and particulars submitted on 16/04/2015, 19/06/15 and 24/06/15, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

   Reason: In the interest of clarity.

2. The rotor diameters of the turbines shall be no less than 95m and no more than 105m. The hub height of the turbines shall be no less than 80m and no more than 91.5m. The overall height to tip of the turbine shall be no less than 125m and no more than 136.5m.

   Reason: In the interest of clarity.

3. All bridge crossings of the grid connection cable route shall be buried within the bridge deck, or affixed to the bridge structure.

   Reason: In the interest of clarity, and to protect the surface water drainage network.

4. The permission shall be for a period of 25 years from the date of the commissioning of the wind turbines. The wind turbines and related ancillary structures shall then be decommissioned and removed unless, prior to the end of the period, planning permission shall have been granted for their retention for a further period.

   Reason: To enable the planning authority to review its operations in the light of the circumstances then prevailing.

5. Prior to construction works being carried out between mid-March and mid-August, a survey for breeding hen harriers shall be carried out by a competent, experienced ornithologist. The survey will cover the area within a boundary of 500m of the works to be carried out during the

above period. It will be the responsibility of the ornithologist, based on his or her experience and/or professional opinion, to ensure that the survey methodology is sufficient to ensure that a hen harrier breeding site will not be overlooked. Taking into account the results of this survey no construction works shall be carried out during the above period within 500 metres of a pre-nesting breeding site and/or nest.

Reason: To avoid disturbance to breeding Hen Harrier, a species listed in Annex I of the EU Birds Directive.

6. Prior to the commencement of development, the developer shall submit a programme for post construction monitoring of this site, and the mitigation foraging habitat sites for Hen Harrier, which shall be agreed in writing with the Planning Authority. This plan shall be prepared in accordance with Scottish Natural Heritage Guidelines, and shall provide for comparative monitoring at a baseline site, and for carcass searches. This plan should be prepared by a suitably qualified/experienced ornithologist and should provide for monitoring by a suitably qualified/experienced ornithologist.

Reason: To assess success of Hen Harrier mitigation measures to be implemented on site.

7. All mitigation measures set out in the Environmental Impact Statement (EIS) and Natura Impact Assessment (NIS) (as revised), submitted as part of this planning application on 23/07/14 and as amended on 16/04/15 shall be implemented in full (except as may be required by terms of conditions herein).

Reason: Prior to the commencement of development the applicant shall submit a schedule of mitigation measures identified in the EIS and NIS. To safeguard the amenities of the area and in the interest of orderly development.

8. Prior to any development commencing, an agreement shall be entered into committing to the management of the habitat mitigation areas identified on the submitted Hen Harrier Foraging Mitigation areas Map No. Figure 5.2.2 habitat map (received by the Planning Authority on the 16/04/2015) for the operational period of the wind farm. Before the development herein permitted commences, or, at the discretion of the Planning Authority, within such further period or periods of time as it may nominate in writing provision to this effect shall be embodied in an

agreement between the landowner and the Planning Authority pursuant to Section 47 of the Planning and Development Act, 2000.

Reason: In order to ensure satisfactory habitat for, and management of, the Annex 1 listed species Hen Harrier.

9. A buffer zone of 10 metres shall be established around the newly identified limekiln in advance of construction by a suitably qualified archaeologist. The buffer zone shall be cleared of vegetation and delimited using appropriate temporary boundary fencing and signage. No construction works, stockpiling of topsoil etc., or any development, or landscaping and/or planting should take place within the designated buffer zone. Subsequent to the completion of the development the buffer zone shall remain around the Archaeological Monument. Planting within this buffer zone shall be limited to shallow-rooted plants and/or grass.

A buffer zone of 30m shall be established to Stone Row CO041-114 in advance of construction by a suitably qualified archaeologist. The trees within the buffer zone shall be sawn down and removed. The buffer zone shall be delimited using appropriate temporary boundary fencing and signage. No construction works, stockpiling of topsoil etc., or any development, or landscaping and/or planting should take place within the designated buffer zone. Subsequent to the completion of the development the buffer zone shall remain around the Archaeological Monument. Planting within this buffer zone shall be limited to shallow-rooted plants and/or grass.

Reason: To preserve items of archaeological importance.

10. The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the developer shall:

(a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, and

(b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.

The assessment shall address the following issues:-

(i) the nature and location of archaeological material on the site, and

(ii) the impact of the proposed development on such archaeological material.

A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.

11. All clear felling of forestry associated with the development shall be undertaken in accordance with the appropriate Forest Service Guidelines. All necessary licences shall be obtained from the forest service for any felling operations on site.

Reason: In the interest of orderly development and to protect the amenities of the area.

12. The construction of the development shall be managed in accordance with a Construction Management Plan, which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. This plan shall provide details of intended construction practice for the development, including:-

(a) location of the site and materials compound including areas identified for the storage of construction waste,

(b) location of area for construction site offices and staff facilities,

(c) measures providing for access for construction vehicles to the site, including details of the timing and routing of construction traffic to and from the construction site and associated directional signage, to include in particular proposals to facilitate and manage the delivery of over-sized loads,

(d) measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network,

(e) alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public road or footpath during the course of site development works,

(f) details of appropriate mitigation measures for construction-stage noise, dust and vibration, and monitoring of such levels,

(g) containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater,

(h) appropriate provision for re-fuelling of vehicles,

(i) off-site disposal of construction waste and construction-stage details of how it is proposed to manage excavated soil,

(j) means to ensure that surface water run-off is controlled such that no silt or other pollutants enter drains or water courses, and

(k) details of the intended hours of construction.

Prior to the commencement of construction, proposals for the environmental monitoring of construction works on site by an ecologist and by an environmental scientist or equivalent professional, including the monitoring of the implementation of construction-stage mitigation measures, and illustrating compliance with the requirements set out above, shall be submitted to, and agreed in writing with, the planning authority, together with associated reporting requirements.

Reason: In the interest of protection of the environment and of the amenities of the area.

13. All works shall be supervised by an on-site clerk of works who shall be a suitably qualified competent person and, who will report on compliance with all environmental mitigation measures. The clerk of works shall be empowered to halt works where he/she considers that the continuation of the works are likely to result in a significant pollution or siltation incident. In the event of a water pollution incident, or of damage to the adjacent river, these reports will be made available to the relevant statutory authorities, and on site works will cease until authorised to continue by the planning authority. A compliance monitoring report, prepared by the clerk of works will be submitted to the planning authority at the end of the main construction period. A designated member of the company's staff shall interface with the Planning Authority or member of the public in the event of complaints or queries in relation to environmental emissions. Details of the name and contact details and the relationship to the operator of this person shall be available at all times to the Planning Authority on request whether requested in writing or by a member of staff of the Planning Authority at the site.

Reason: To safeguard the amenities of the area and ensure the protection of water quality in the catchment of the Blackwater River SAC.

14. Prior to the commencement of development, a detailed reinstatement programme providing for the removal of all turbines and ancillary structures shall be submitted to the Planning Authority for written agreement. On full or partial decommissioning of the windfarm, or if the windfarm ceases operation for a period of more than one year, the masts and turbines concerned, shall be dismantled and removed from the site. The site shall be reinstated in accordance with the said programme and all decommissioned structures shall be removed within three months of decommissioning.

Reason: To ensure the satisfactory completion of the project.

15. Details of aeronautical requirements shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development, following consultation with the Irish Aviation Authority. Prior to commissioning of the turbines, the developer shall inform the planning authority and the Irish Aviation Authority of the as-constructed tip heights and co-ordinates of the turbines.

Reason: In the interest of air traffic safety.

16. Excavated banks and bases around turbines shall be re-laid with overlying turf removed during excavation.

Reason: In the interest of orderly development.

17. Wind turbine noise arising from the proposed development shall not exceed the greater of:

(a) 5 dB(A) above background noise levels or,

(b) 43 dB(A) $L_{90,10min}$

when measured externally at dwellings or other sensitive receptors. Prior to commencement of development, the developer shall submit to and agree in writing with the planning authority a noise compliance monitoring programme for the subject development. All noise measurements shall be carried out in accordance with ISO Recommendation R 1996 "Assessment of Noise with Respect to Community Response," as amended by ISO Recommendations R 1996-1. The results of the initial noise compliance monitoring shall be submitted to, and agreed in writing with, the planning authority within six months of commissioning of the wind farm.

Reason: In the interest of residential amenity.

18. (a) The wind turbines, including tower and blades, shall be finished externally in a light grey colour.

(b) Cables within the site shall be laid underground.

(c) The wind turbines shall be geared to ensure that the blades rotate in the same direction.

(d) No advertising material shall be placed on or otherwise be affixed to any structure on the site without a prior grant of planning permission.

Reason: In the interest of visual amenity.

19. As far as is practicable all deliveries to / from the site including all construction traffic shall be restricted to National and Regional routes and to specific sections of local roads as identified in the submission as the Eastern and Western Routes. In particular construction/delivery/service traffic will not be permitted on the L-5341 and L-5355 (except for staff cars and light vans), L-1126, L-1125, L-1210 east of Ballyboneill, L-5257, L-5256 south of the Western entrance to the site, L-52561, L-5255, L-5346 north of the Eastern entrance, L-5345, L-1211 south of junction with L-5346, and generally on any other local roads.

Reason: In the interest of traffic safety.

20. Vehicles hauling materials from or to Borrow Pits on site are not permitted to travel on public roads.

Reason: In the interest of orderly development.

21. Before development commences full details of a Traffic Management Plan (TMP) shall be submitted and agreed with the Planning Authority. The Traffic Management Plan shall be prepared by the applicant in consultation with the Gardaí and where appropriate in liaison with local residents and businesses. The TMP shall take cognisance of updated route assessments undertaken in the knowledge of the make and model of turbine being installed and shall also take account of departure routes and manoeuvres for delivery and transport vehicles.

Note - the TMP is to be reviewed/updated as required by the Planning Authority during the construction phase of the development and temporary or localised traffic management plans shall be prepared and implemented as required by the Area Engineer.

Reason: In the interest of orderly development.

22. The public roads adjacent to the site shall be kept clean of dust, mud and debris at all times. The developer shall if deemed necessary by the Planning Authority install wheel washing facilities for vehicles prior to exit on to the public road and the developer shall in such instance arrange for the provision of an adequate supply of water to facilitate same.

Reason: In the interest of maintaining the amenities of the area and traffic safety.

23. Sight distances of 80 metres, in both directions, at a point 3 metres back from the edge of the public road shall be provided in the centre of the vehicular entrances to the satisfaction of the Planning Authority prior to the commencement of any other development on site. Vegetation or any structure shall not exceed one metre in height within the sight distance triangles. The developer shall be responsible for the ongoing maintenance of such sightlines at all times. The applicant shall provide (prior to commencement of any works) satisfactory evidence of permission from the relevant landowners to allow the applicant to undertake any necessary works on their properties to achieve sightlines and/or space to accommodate satisfactory entry and exit turning movements and to allow the applicant to trim back the roadside hedges / boundaries to ensure compliance at all times with sightline requirements.

Reason: In the interest of traffic safety.

24. Surface water from the development shall not be permitted to flow onto the public roads during construction or thereafter. Existing inlets or drains taking surface water from the public road into the site shall be preserved and maintained. Existing road drainage shall not be obstructed and any the new or modified entrance shall be designed and constructed to ensure the uninterrupted flow of road surface run-off to the satisfaction of the Planning Authority.

Reason: To prevent the flooding of the public road.

25. All portaloo units located on site including sealed holding tanks for the storage of waste effluent and associated alarms shall be fully commissioned, operated and maintained to the satisfaction of the Planning Authority. Evidence of Service Contracts shall be furnished to the Planning Authority.

Reason: In the interest of public health and orderly development.

26. The developer shall separately at his own cost seek all necessary agreements with landowners, Planning Authority and local authority including Road Opening Licences, Load Permits etc. if any modification works are required to bridges, roads, ditches on the access routes to the site. Any subsequent permitted works shall be undertaken at the developers' costs and to the satisfaction of the Planning Authority.

Reason: In the interest of orderly development.

27. Prior to commencement of works on site the developer shall submit at his own cost - a bridge survey/report to the satisfaction of the Planning Authority, prepared by a chartered engineer, of structures on the proposed access routes incorporating an assessment of the current structural condition and geometry and adequacy or otherwise of each structure to cope with the proposed loading and traffic associated with this development. The report shall outline any proposed consequent remedial actions to facilitate the development. Any such works may be subject to licence, permit, or separate planning permission.

Reason: In the interest of preserving the standard of surrounding public roads.

28. In the event that the proposed development causes interference with telecommunications signals, effective measures shall be introduced to minimise interference with telecommunications signals in the area. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the planning authority following consultation with the relevant authorities.

Reason: In the interest of protecting telecommunications signals and of residential amenity.

29. Turbines T13 and T14 shall be programmed so as to never rotate between noon and dusk on any of the days referred to in the 4th column of Table 4.12 of the EIS in respect of Houses H134 to H137. Turbine T13 shall be set so as to never rotate between dawn and noon on any of the days referred to in the 4th column of Table 4.12 of the EIS in respect of House H58.

Reason: In the interest of avoiding excess shadow flicker in the interests of residential amenity.

30. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads that may be damaged by the transport of materials to the site, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site upon cessation of the project, coupled with an agreement empowering the planning authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

Reason: In the interest of traffic safety and the proper planning and sustainable development of the area, and to ensure satisfactory reinstatement of the site

31. The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000, as amended. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.

Reason: It is a requirement of the Planning and Development Act 2000, as amended, that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.

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G. Ryan
Planning Inspector
7th January 2016

16.0 Appendix 1

16.1 ISSUES RAISED BY 3RD PARTIES IN INITIAL SUBMISSIONS

- *Overlooking and loss of privacy*
- *Loss of habitats*
- *Overshadowing*
- *Intrusion on landscape and negative impacts on visual amenity*
- *Will pose a drainage and flood risk*
- *Objection to turbines 12,13 & 14 as they are too near private residences.*
- *Traffic pollution and noise pollution caused by the development will have a negative impact on the area*
- *Proposal will have cause an increase in background noise levels*
- *In conjunction with the permitted wind farms to south and west this proposal would mean turbines to north and east also, will cause a negative impact on visual amenity from private residences.*
- *Night sky will be impacted on by lighting attached to turbines*
- *Potential for serious health damage*
- *Possibility of structural damage to nearby homes as the forces transferred by turbine foundations will not be dissipated equally through the mass of Bweeng Mountain but will travel along the strata – possibly damaging the structure of nearby houses.*
- *Loss of value of nearby homes*
- *Saturation point has been reached with number of windfarm's permitted in the area.*
- *Appears developer is trying to get around conditions of previous permission in 2011 which allowed for 8 turbines and refused 4 citing as a reason impact on visual amenity of the villages of Nadd and Lyre as they would be surrounded by turbines. If these turbines are permitted Glounaharre and other townlands will be surrounded.*
- *EIS does not show any visual impact from houses in the area – also no cumulative impact assessment for humans in the EIS, as there is for all other chapters.*
- *No photomontage from the (Glouminane/Laharn Road) this should be addressed*
- *Planning has already been received for 40 turbines with 20 built to date causing an eyesore on the landscape*
- *Proximity of windfarm will have a negative impact on the breeding and training of horses*
- *Concerns over proposed impacts on drainage and potential for impacts on adjacent properties and bored wells*

- *Noise of turbines will have a detrimental effect on family life for nearby residents*
- *Shadow flicker will be an issue for nearby residents*
- *Turbines will cause disruption to mobile/TV services*
- *Overall negative impact on those who live and work in the area*
- *Negative impact on tourists visiting the area – proposed site is on the Duhallow Trail*
- *Fears that road safety will be impacted on by construction vehicles accessing the site through nearby Bweeng Village*
- *No consultation with local residents of Bweeng – developer refused a public meeting in Bweeng Community hall*
- *A number of the turbines are located far too close to existing and permitted dwellings*
- *Pylons will be needed in conjunction with turbines and these are not shown on the plans*
- *Possibility of landslides*
- *Stray voltage can cause loss of livestock*
- *Potential to cause significant disruption to radio signals received and transmitted from the Towercom installation. There has been no contact from the applicant in relation to the proposed development therefore a thorough assessment could not be completed. Section 5.10 of Wind Energy Guidelines cited.*
- *Tetra Ireland raised concerns with the applicants agents (March 14') that the proposed development could have a very serious impact on emergency services. A request was made to be furnished with further details of turbine heights, blade spec and turbine locations to make a full appraisal and it was communicated to the agents that turbines should be kept as far away as possible from the telecommunication tower to allow RF signal to propagate correctly and minimise any impact the turbines would have on radio signals. No further information was received by Tetra Ireland.*

16.2 ISSUES RAISED BY 3RD PARTIES IN SUBMISSIONS FOLLOWING THE RECEIPT BY THE PLANNING AUTHORITY OF FURTHER INFORMATION

- *Developers may cause damage to road network and accidental damage to properties.*
- *A viewing platform/deck should be considered on one of the turbines*
- *Turbine nos 13 &14 will impose shadow flicker and noise on objectors' day to day life. Noise from forestry trucks already having a serious impact on quality of life and felling in the forests is also having a negative visual impact.*
- *Delivering turbines at night will disrupt occupants*

- *Noise from the turbines will have an adverse effect on health and quality of life*
- *Size of turbines will be a blot on the landscape and will have a negative impact on the walking routes in the area while impacting on the local economy*
- *The newspaper advert did not provide an adequate address as it only stated the townlands. The notice should have been addressed Bweeng/Nad Mallow, County Cork*
- *Road network is not sufficient for the level of traffic that will be generated from this proposal.*
- *Fear of serious malfunction of turbines which could result in death or injury*
- *The turbines may have a negative impact on mobile phone coverage in the area*
- *Already too many wind turbines in the area – this will result in a devaluation of property.*
- *The proximity of turbines could lead to serious health issues for local residents*
- *Potential impacts on livestock*
- *The turbines will cause shadow flicker to nearby houses – the 2006 guidelines are not sufficient in this regard.*
- *The further information totally changes the proposal which was applied for. 14no. turbines were originally included but this is now reduced to 6 turbines in addition to the 8 turbines already granted. This application is now completely unrecognisable from that which planning was originally sought.*
- *In the EIS the word 'intended' is quoted a lot this is too vague.*
- *Current haulage route being used for a nearby windfarm is causing a lot of disruption*
- *The proposed turbines are close to the Bweeng community centre. People may not want to use the centre and its community facilities including crèche, playground, walking route etc. if these turbines are constructed.*
- *Turbines could have a negative impact on the hen harrier which are breeding in the same area as the proposed turbines*
- *The pearl mussel is present locally and this is not included in the EIS. EIS notes that "it appears unlikely that pearl mussels would be present" – this is not good enough as this is a protected species and it should state that it is either present or not. Surveys should have been carried out in this regard.*
- *Some Hen Harrier surveys were carried out over a very short period Turbines could affect signals from the communication masts*
- *Proposed high voltage cables and grid connection could cause a health risk – in addition this cable route is not definitive. Page 14 of EIS states the route is proposed meaning a different route could be taken.*

- *The trees being felled will not be replaced by Coillte*
- *The turbines have serious impacts on families and neighbours through differing interests – Those opposed versus those involved in or connected to wind farm projects.*
- *O'Grianna Judgement – This judgement makes it clear that the infrastructure works required to connect these projects to the grid are part of the project for EIA purposes. This application does not appear to have sufficient information to allow EIA to be carried out by the planning authority, or to allow members of the public to input into the process. Planning permission cannot therefore be granted in absence of this information.*
- *The applicant has not erected sufficient site notices*
- *Current work practices being employed by these developers on a nearby windfarm project does not instil confidence with this proposed project.*
- *Proposal will have an adverse impact on the Duhallow way*
- *Proposed development will devalue properties in the area*
- *Concerns regarding reinstatement of the site when the development is decommissioned.*
- *Potential impacts on flora and fauna in particular on existing bat roosts in the area*
- *Potential for ice through from the turbine blades given elevated nature of site and height of turbines proposed*
- *Works have already started on the entrance to the site from Gurranes road – this is unauthorised.*
- *Local area is becoming saturated with wind turbines*
- *Noise levels associated with such developments are at odds with the quiet rural area which has low ranging background noises between high teens and 20 db.*
- *Low frequency Noise is capable of penetrating walls of houses causing disturbance to occupants.*
- *Photomontages are biased and do not provide an accurate representation of impacts on local residents*