



An  
Bord  
Pleanála

## Inspector's Report PL04.248153(245824).

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Development	Windfarm of 6 turbines.
Location	Barnadivane, Lackeragh, Garranereagh, Lissarda, Terelton, Co. Cork.
Planning Authority	Cork County Council.
Planning Authority Reg. Ref.	14/6760.
Applicant	
Type of Application	Permission
Planning Authority Decision	Grant.
Type of Appeal	Third Party
Appellants	Jerome Cohalan and Geraldine Hanley. Barna Wind Action Group
Observers	Michael P. and Mary O' Riordan Michael Allen Anthony Cohu Nigel Fennell

Teresa Flynn  
Patrick Manning  
Eleanor O'Leary  
Sarah Hodgkinson, Tony Miller and  
Daphne Babbington  
Sarah Larkin

Date of Site Inspection

12<sup>th</sup> April 2018.

Inspector

Mairead Kenny.

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## 1.0 Introduction

- 1.1. These introductory comments refer to 2 no. appeal cases, which were previously considered by the Board and both decisions quashed by order of the High Court on 20<sup>th</sup> of December 2016.
- 1.2. PL 04.248153 refers to a proposed 6 turbine windfarm – previously PL04.245824.
- 1.3. PL 04.248152 refers a proposed substation - previously PL 04.244439.
- 1.4. The Board on 18<sup>th</sup> December 2017 issued Directions in relation to the remitted appeals. This included a request for a new report and recommendation to be prepared by an Inspector not previously involved in either case. This report and the concurrent report on the related substation case refers.
- 1.5. Having regard to the interdependence of the projects subject of the two appeals and to the legal history and the Direction of the Board on 18<sup>th</sup> December 2017 it is recommend that this report be read in conjunction with the report relating to PL04.248152.
- 1.6. The Board is also referred to the live appeal which was lodged under ABP301563-18, which relates to a proposed 110kV substation at Carrigarierk wind farm and a 100kV grid connection to Dunmanway substation to serve Carrigarierk and Shehy More wind energy developments to the west. I refer to this as the Carrigarierk Substation and Grid Connection.

## 2.0 Site Location and Description

- 2.1. The site is located in a rural agricultural area 9km from Macroom town in central county Cork. The nearest settlements to the site are the small villages of Cappeen, which is 2km to the southwest, Terelton which is 2km to the northwest and also noteworthy is Crookstown, which is situated close to the N72 the Macroom to Killarney Road.
- 2.2. The site is in the town lands of Barnadivane, Lissarda, Garranereagh, and Lackareagh. The landscape comprises an upland area with pasture being the dominant land use. There are groups and rows of trees in places and the immediate area in which the site is located would be described as enclosed in character.

- 2.3. The site itself is of stated area of 40 hectares. At its northern end it slopes downwards towards the Lee Valley. The southern side slopes to the River Bride. A 110kV line is evident in the landscape and it crosses the road at a number of locations. There is a wind energy development comprising 4 turbines which are to the east of the site – this is the Garranereagh windfarm.
- 2.4. The area is characterised by a relatively high residential population, which appears to be related to the farming activities in the area and some of the houses are newly constructed. There are a number of derelict unoccupied buildings some of which would be former houses and which might be described as ‘habitable houses’. The road network serving this development, including the constructed wind farm is narrow but in reasonable repair.
- 2.5. Photographs of the site and the surrounding area which were taken by me at the time of my inspection are attached.

### 3.0 Proposed Development

- 3.1. The proposed development is a 6 turbine windfarm, which is stated to be intended to replace a previously permitted development. **Blade tip height of up to 131 m, maximum hub height 85 m and blade length 51.5 m are proposed.** The turbines would be aligned in a row running from south to north. Associated development includes a **monitoring mast of 90 m** height, 1.96 km **of access track** and upgrading of 2.34 km existing track to 5m width minimum. A new access junction and improvements to public roads to facilitate turbine delivery. A 3-4m deep 0.36 hectare **borrow pit** is proposed. Other ancillary development includes foundations and hardstanding, signage and underground cables.
- 3.2. Grid connection to the wind farm is proposed by way of **an underground cable** to the proposed substation subject of the concurrent appeal, which would connect to the 110 KV electricity line which traverses the study area.
- 3.3. The application is accompanied by an **Environmental Impact Statement and an AA Screening Report.** A 10 year permission is sought. The duration of the development is 25 years. A community fund is envisaged but no details are provided.

- 3.4. The **application details** submitted to the planning authority include letters from registered owners of property who are in agreement to the making of the application and who consent to the proximity of the turbines including at distances of less than 2 rotor blades.
- 3.5. The planning authority issued a **request for further information** including:
- Further details and clearer maps including in relation to the location of houses, ZTVs and photomontage imagery.
  - Clarification of the megawatt output for the turbines individually and in total estimate.
  - Opinion on project splitting.
  - Wind take and the potential for impact on the existing turbines.
  - Ecology including wintering waterbirds, other birds, bats, terrestrial and freshwater habitats and species, noise and vibration, transport and traffic.
- 3.6. The **further information response received on 26<sup>th</sup> May 2015** and subsequently subject of revised public notices received by the planning authority on 5<sup>th</sup> June 2015 includes the following:
- Report entitled 'Barnadivane Wind Farm, Co. Cork – Response to Further Information Request
  - Copies of revised ZTV, revised cumulative ZTV, revised photomontages
  - A digital copy of the documentation.
- 3.7. By way of an **unsolicited submission received on 20<sup>th</sup> July 2015 Appendix 5 Noise** Supporting Documentation was lodged.
- 3.8. A **request for clarification was issued and a response received by the planning authority on 10<sup>th</sup> September 2015** includes:
- Response to request relating to noise and vibration including a peer review of the noise assessment by AWN Consulting
  - Outline CEMP.
  - Unsolicited further information comprising a cumulative assessment with proposed Shehy More Wind Farm.



- Various tables and figures.

## 4.0 Planning Authority Decision

4.1. The planning authority decided to grant permission subject to 32 no. conditions including:

- to be in accordance with the plans and particulars of 19<sup>th</sup> December 2014, 26<sup>th</sup> May, 5<sup>th</sup> June, 20<sup>th</sup> July and 10<sup>th</sup> September 2015
- 10 year permission
- planning authority to agree Construction Environmental Management Plan
- operational noise limits of 43dB(A) $L_{A90, 10min}$  or 5dB(A) above background levels at any sensitive receptors
- shadow flicker limit on any dwelling of 30 minutes per day or 30 hours per year.

## 4.2. Planning Authority Reports

### 4.3. Planning Reports

- 4.3.1. The initial report notes that preplanning consultations were undertaken in July 2014 during which general principles were discussed together with planning history and proposals for new development.
- 4.3.2. The requirements for Appropriate Assessment has been screened out for this development having regard to the **lack of ecological or hydrological connection between the development site and any European site**. Following the report of the Heritage Unit - Ecology section it is considered that there are some **deficiencies in the habitats and species information provided in the EIS and the AA screening report**.
- 4.3.3. Other reports are noted. **250 public submissions** have been received, read and considered - these are summarised in bullet point format.
- 4.3.4. The planning history is outlined. There are **4 turbines immediately east of the subject site which measure 93 m blade tip height** and were permitted under reg.

ref. 03/2047. The Wind Energy Strategy Map contained in the 2014 development plan identifies an area south of Macroom including the subject site in which commercial **wind energy is deemed to be acceptable in principle**. The landscape type has a low rating value and low sensitivity. In terms of the national guidance the site is considered to be most characteristic of the **'hilly and flat farmland' landscape type**.

- 4.3.5. Regarding ecology there are 4 no. European sites within 15 km radius. The proposed **larger more efficient turbines will minimise the total rotor envelope** of the proposed development in comparison to the permitted 14 turbines. Fewer turbines will mean **less habitat loss and less overall disruption**. **All cabling will be underground and there are sufficient buffers in place** between windfarm infrastructure and hydrological features.
- 4.3.6. The Council's Heritage Officer has reviewed the EIS, CEMP and AA report and identified concerns and **further information will be sought** regarding the SPAs - also on other birds, bats, and terrestrial habitats and freshwater habitats and species. It is also recommended that the soil stability assessment and material requirements/soil management proposals be reviewed by a competent person on behalf of the planning authority to verify the conclusions reached in the EIS in relation to soil stability and soil management proposal. Other specific impacts are discussed including geology, hydrogeology, hydrology traffic and transport, cultural heritage, alternatives and so on.
- 4.3.7. The permission recently granted for an electricity substation compound to replace the smaller permitted substation at location 400 m away is noted.
- 4.3.8. Recent High Court judgements relating to windfarm developments and the submissions to the application are noted. It is necessary to require the applicants to address any concerns regarding **project splitting**. Following receipt of the further information response it is considered that legal counsel may be required to be sought as to whether the current proposal can be further considered at this location.
- 4.3.9. Regarding the adequacy of the EIS while further information is required, the shortcomings in the EIS are such that the **EIS would not be rendered deficient** in legal terms. The **further information required specifically relates to a cumulative evaluation of the proposed development along with windfarm developments**

permitted at this site location. **Connectivity is relatively easily achievable** having regard to proximity to overhead 110 KV lines and a grid connection offer is stated to be in place for the proposed development.

- 4.3.10. The site is in an **area where the wind energy proposals are deemed to be acceptable** in principle and the principle of development can be accepted at this location. In light of the previously permitted windfarm development and visual assessment carried out to date the development can be further considered from a visual viewpoint - to enable carrying out of a full visual and landscape character assessment further information is required. There are concerns also regarding the development from an ecological and noise viewpoint and the recommendation and comments of the other sections are noted. The decision should be deferred accordingly.
- 4.3.11. The **final report notes** the submissions made by way of further information which concerns **cumulative assessment** of the 6 turbine windfarm with new and existing tracks, with the proposed substation and proposed private roadway.
- 4.3.12. The most onerous situation has been assumed namely that the 3 projects will be **concurrently constructed. Cumulative impacts** on designated sites, hydrological impacts, cumulative disturbance/displacement and cumulative impacts on habitat, terrestrial mammals, bats birds, Freshwater pearl mussel, geology, noise, visual impact, human, traffic and transport, cultural heritage, cumulative telecommunications assessment, cumulative air and climate, interaction of the foregoing are assessed.
- 4.3.13. Considers also the cumulative effect of the development and the connection including to the nearby Shehy More wind farm proposal.

#### 4.4. **Selected Technical Reports**

- 4.4.1. Area Engineer – There is a requirement for a **bond for road repairs**. The further information response in relation to **deliveries is acceptable. Other conditions** recommended.
- 4.4.2. Engineering report (Sharon Casey) Satisfied that the response to the further information request is acceptable and that potential for significant negative impacts can be ruled out. Subject to agreement of a **CEMP permission can be granted**.

- 4.4.3. Environment – the final report refers to the **clarification of further information relating to noise, which is acceptable**. No objection to permission subject to conditions.
- 4.4.4. Heritage Officer- The initial report notes that the site is of **low ecological significance and does not have any habitats or host species of interest**. No significant impacts on birds is deemed likely. Further information reviewed. Potential for **significant effects on Natura sites can be screened out**. No objection subject to implementation of CEMP.

#### 4.5. **Prescribed Bodies**

- 4.5.1. Department of Arts, Heritage and the Gaeltacht sets out requirements regarding the archaeological monitoring to be addressed by condition.
- 4.5.2. Inland Fisheries Ireland set out a number of planning conditions/requirements to be adhered to. These are of a general nature and relate to prior consultation in the event of physical interference with water courses, control of suspended solids and hydrocarbons contaminated site run-off and criteria in relation to bridging or culverting of watercourses, timing of such works and consultation with IFI.
- 4.5.3. HSE – Initial report queries the conclusions of the EIS in relation to noise particularly in relation to H-28 which has a level of exceedance that is similar to H-36, H-34 and H-48 and is not a stake holder in the project. Notes that the guidelines do not say that noise will not be a problem at 500m. Need to acknowledge impact and need for mitigation measures due to noise at non stakeholder dwellings. Also vibration impacts arising from the extraction at the borrow pit and the possibility of blasting and shadow flicker including the need to be proactive in relation to the 8 no. property owners affected. In the subsequent report it is noted that the further information requested did not address issues relating to potential shadow flicker – a mitigation strategy is required.
- 4.5.4. Irish Water has indicated no objection.

#### 4.6. **Third Party Observations**

**A large number** of third party observations generally opposing the development were received by the planning authority. I am satisfied that the issues raised are common to the matters raised in the appeal and observations. Any specific relevant matters which are not contained in the summaries of the appeal/observations and which are deemed relevant are considered in the assessment section of this report.

### 5.0 **Planning History**

#### 5.1. **On site or in vicinity**

##### **Windfarm**

**PL04.219620 refers to a proposed development of 14 turbines (105m blade tip height), 110kV substation and a substation** for which permission was granted.

Subject development is fully described as construction of 18 turbines (modified to 14 turbines), 18 transformers, 110kV substation, 110kV switch station, 70 m wind monitoring mast, construction and upgrading of the site entrances, site tracks and associated works. The Direction of the Board referring to its decision not to accept the Inspector's recommendation to refuse permission noted the planning history of the site and the location of the proposed development within a 'strategic search area'. The Board considered that the scheme by virtue of its revised scale and turbine configuration had addressed to a significant degree concerns in relation to the previous windfarm proposal.

**Windfarm – extension of duration** Planning reg. ref. 11/6605 refers to an extension of duration of the above permission for 14 turbines was granted (until 13<sup>th</sup> February 2017).

**Delivery Road** - Under reg. ref. 14/06803 the planning authority granted permission on 27<sup>th</sup> July 2015 for a private road of c150m (between the R585 and L6008). The road was to facilitate delivery of components for the windfarm on the current appeal site.

**Substation – concurrent appeal** - PL04.248152 / PL04.244439 refers to a third party appeal of the decision of the planning authority under reg. ref. 14/557 to grant

permission for development of an electricity substation, which is intended to replace that previously permitted under PL04.219620.

**Windfarm** PL04. 204928 relates to a previous decision to refuse permission for a windfarm of 23 turbines up to 100m high on the site as the development would be visually obtrusive and injure the amenities of the area and property in the vicinity. In the Board's Direction, it was stated that the Board agreed with the Inspector that a revised proposal might be possible but considered that the impact of the proposed development by reason of the layout, number and size of the turbines would be excessive.

## 5.2. **Other recent cases in area which are cited in the appeal or within 15km**

### **1. Shehy More windfarm - PL04. 243486 (reg. ref. 13/551) – granted – legal challenge - proceedings withdrawn June 2018**

The Board granted permission for a development of 12 wind turbines at Shehy More c20km west of the appeal site. The application was accompanied by a detailed Environmental Impact Statement and EIS addendum in respect of the proposed grid connection and details regarding the route of that connection, which will be entirely by way of an underground 38kV cable. The underground cable will run within the public road corridor between the site of the Shehy More proposal and either the previously permitted substation (Garranereagh) or the currently proposed substation (Barnadivane /Kneeves). The Board's Direction notes that this was concurrently considered with PL88.246915 (grid connection from Shehy More to proposed or permitted substation at Barnadivane or Garranereagh).

### **2. Grid connection from Shehy More windfarm to Garranereagh or Barnadivane substations - PL88.246915**

The Board under PL88.246915 upheld the decision of the planning authority to grant permission for development of an underground cable to connect the proposed Shehy More windfarm to the National Grid by way of either the permitted substation at Garranereagh or the proposed substation of Barnadivane. The Inspector noted at the time of lodging the application that the proposed Shehy More windfarm and the proposed substation at Barnadivane were subject of appeals to An Bord Pleanála. The Inspector advised that a concurrent assessment of the grid connection with the

then current case of the Shehy More windfarm and the Barnadivane substation might be considered.

### **3. Carrigarierk windfarm, substation and Grid Connection to Barnadivane substation - PL04.246353 - High Court upheld decision in November 2017**

The appellants refer to this case in the context of the substation appeal. The application under reg. ref. 147/431 for development comprising 5 wind turbines and various ancillary works including an underground grid connection to the permitted / proposed Barnadivane substations. The planning authority decided to refuse permission but the Board granted permission following third and first party appeals.

This decision was subject of judicial review proceedings and the decision of the Board was upheld by ruling of the High Court in November 2017. The Court decided that the Board had conducted EIA and AA as required to do so and that the decision in relation to EIA and AA had been recorded as required in law.

### **4. Garranure windfarm, 10-15km to the south of the sites**

Under PL04.127137 permission was granted for 4 no. turbines of total height of 122m to blade tip.

PL239280 was a subsequent application/ appeal to increase the height of some turbines and erect an additional, bringing the total number to 5 no. At the time of inspection 3 no. turbines were in place. The Board refused permission for the proposed modification and extension.

### **5. Cleanrath wind farm, 15km to the north-west – judicial review dismissed 30<sup>th</sup> May 2018**

PL04.240801 relates to a proposal for 11 turbines – decision to grant permission was quashed by High Court on 16<sup>th</sup> June 2016. The subsequent appeal under PL04.246742 for 11 turbines was granted by the Board on 19<sup>th</sup> May 2017.

### **6. Live appeal – 301563 – Carrigarierk Substation and Grid Connection**

This is an appeal against the decision of the planning authority under reg. ref. 17431. Permission is sought for

(1) A 110kV electricity substation including 2 no. control buildings associated site works at the Carrigarierk Wind Farm (An Bord Pleanála Ref. PL04.246353, Cork County Council Ref. 15/730) in the townland of Carrigdangan;

(2) 110kV underground electricity cabling connecting the proposed substation to the existing Dunmanway ESB substation in the townlands of Carrigdangan, Inchincurka, Kilnadur, Aultaghreagh, Aultagh, Ardcahan, Knockduff, Gurteennasowna and Ballyhalwick;

(3) 33kV underground electricity cabling connecting the proposed substation to the permitted Carrigarierk Wind Farm and the permitted Shehy More Wind Farm (ABP Ref. PL04.243486; Cork County Council Ref. 13/551) and ancillary works and apparatus.

## 6.0 Policy Context

### 6.1. National Planning Framework

- 6.1.1. This identifies National Strategic Outcome 8 as Transition to Sustainable Energy. It refers to the harnessing of considerable onshore and offshore protection from energy sources including wind. Targets include the **delivery of 40%** of our electricity needs from renewable sources by 2020 with the strategic aim to increase renewable deployment in line with EU targets and national policy objectives out to 2030 and beyond.
- 6.1.2. It contains numerous references to harnessing the potential of wind energy. New energy systems, additional electrical grid strengthening and transmission will be necessary. Development of renewables is critically dependent on the development of enabling infrastructure, including grid investment.

### 6.2. National Landscape Strategy for Ireland 2015-2025

- 6.2.1. This will provide a **high level policy framework** to achieve balance between the protection, management and planning of the landscape and recognises the concerns regarding the siting of national infrastructural development within our landscape – the objective of the strategy is to provide the data that will assist the future decision making process regarding our landscapes. To date the data and details envisaged



have not been incorporated into any revised document and the strategy remains at a high level. Objectives include the provision of a policy framework, which will put in place measures at national, sectoral (including energy) and local level.

### **6.3. National Renewable Energy Action Plan**

- 6.3.1. The National Renewable Energy Action Plan (NREAP) sets out the Government's strategic approach and measures to deliver on Ireland's **overall target to achieve 16% of energy from renewable sources by 2020**. The Government has set a target of 40% electricity consumption from renewable sources by 2020.
- 6.3.2. The report was submitted to the EU in 2010. The fourth Progress report of December 2017 indicates that the interim target level of 8.92% average final energy consumption set under the Renewable Energy Directive for 2015-2016 was met. The increased share of electricity from renewables is primarily (84% in 2015) from wind.

### **6.4. Strategy for Renewable Energy 2012-2020**

- 6.4.1. It is a strategic goal of the strategy to seek progressively more renewable electricity from onshore and offshore wind power for the domestic and export markets.
- 6.4.2. Key actions include the supporting of the delivery of the 40% target for renewable electricity through the existing GATE processes.

### **6.5. Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure, 2012**

- 6.5.1. Ireland needs to deliver a world class electricity transmission system in all the regions which meets the needs of Ireland in the 21<sup>st</sup> century which will, inter alia, enable Ireland to meet its renewable energy targets and reducing the country's dependence on imported gas and oil and reduce CO2 emissions.

### **6.6. Adapting to Climate Change and Low Carbon Act 2015**

- 6.6.1. This sets a statutory framework for the adoption of plans to ensure compliance with Ireland's commitments to European and international agreements on climate change.

## 6.7. **White Paper – Transition to a Low Carbon Energy Future for Ireland 2015-2030**

- 6.7.1. The aim of this document is to set out strategies for the state to adapt to a low carbon future and to provide for Ireland meeting its international and E.U. commitments on greenhouse gas reductions.
- 6.7.2. This sets out 5 strategic targets Department of Communications, Energy and Natural Resources - Strategy for Renewable Energy 2012-2020 including:
- 6.7.3. Strategic Goal 1 – progressively more renewable electricity from onshore and offshore wind power for the domestic and export markets.

## 6.8. **Department of Environment Wind Energy Guidelines 2006**

- 6.8.1. These are Ministerial Guidance issued under section 28 and the Board shall have regard to them.
- 6.8.2. The Guidelines call for a **plan-led approach** involving identification of areas which are considered suitable or unsuitable for wind energy development.
- 6.8.3. The Guidelines refer to various **standards relating to noise, shadow flicker, electromagnetic interference**. The Guidelines set out requirements for a plan-led approach to wind energy development. Specific environmental impacts including on birds, habitats and human beings are presented in Chapter 5. Noteworthy provisions include comments that at a **setback distance of less than 500 m noise is likely to be a problem**. There are specific noise limits set including **special provisions for night-time levels and low noise environments**. Regarding potential impact of shadow flicker there **are identified locations where the potential for shadow flicker is deemed to be very low**. Landscape and visual impacts are addressed in Chapter 6 of the document.

## 6.9. **Forthcoming Guidance**

- 6.9.1. The Draft Strategic Environmental Assessment Scoping Report for Renewable Electricity Policy and Development Framework and the draft 2016 Framework Report, remain at draft stage at the time of writing.
- 6.9.2. Department of Housing, Planning, Community and Local Government (DHPCLG) and the Department of Communications, Climate Action and Environment (DCCAE)

presented in June 2017 an emerging “preferred draft approach” to the Review of the 2006 Wind Energy Development Guidelines. This includes specific measures relating to noise, shadow flicker and other impacts. It was intended to provide an update on progress made.

- 6.9.3. It is intended that on completion of a SEA process draft revised guidelines will be prepared which will incorporate the key elements of the preferred draft approach. An indicative timeline for the adoption of the revised guidance was Q1 2018.

## 6.10. Cork County Development Plan 2015-2020

6.10.1. I consider that the most relevant provisions of the current development plan include:

- The identification of the site within **the ‘Area Likely to be Most Suitable’** under Figure 9.2 and ‘Acceptable in Principle’ under Figure 9.3. Only two relatively small parts of the county are so designated. These are the **optimal areas for wind farm development without significant environmental impacts with viable wind speeds and access to grid.**
- Policy ED 1-1 is to ensure that through sustainable development the Council fulfils its optimum role in contributing to the diversity and security of energy supply and to harness the potential of the county to assist in meeting renewable energy targets.
- Policy ED 3-4 states that in areas designated as ‘Acceptable in Principle’ commercial wind energy development is normally encouraged subject to protection of residential amenity particularly in respect of noise, shadow flicker, visual impact and the requirements of the Habitats, Birds, Water Framework, Floods and EIA Directives.
- ED 6-1 refers to the Electricity Network. Policy is to support and facilitate the **sustainable development, upgrade and expansion of the electricity transmission grid**, facilitate where practical and feasible infrastructure connections to wind farms and other renewable energy sources subject to normal planning considerations. Proposals will only be approved if it can be ascertained, by means of an Appropriate Assessment or other ecological

assessment, that the integrity of nature conservation sites will not be adversely affected.

- ED 6-2 refers to the Transmission Network and the need to consider undergrounding or alternative routes for new network proposals especially in landscape character areas of high sensitivity.
- The landscape in which the site is located is designated as Landscape Character Type 10a – Fissured Fertile Middleground. This has a **Landscape Value of ‘Low’, a Landscape Sensitivity of ‘Low’ and Landscape Importance of ‘Local’**.
- The Lee valley to the north of the site is identified as a **‘High Value Landscape’**. Policy GI-2 is to protect the character of views and prospects from designated scenic routes.
- A looped route south of Terelton and north of the site is designated under **SR 36 – this is the nearest scenic route.**
- GI 4-1 is to support the **diversification of the rural economy** through the development of the recreational potential of the countryside in accordance with the National Countryside Recreational Strategy. Under section 8.7.3 there is a need to **identify more dedicated cycle and walking routes across the county**. Objective TO 7-1 to **promote the development of walking** and cycling routes throughout the county refers.
- Policy RC1-1 is to **strengthen rural communities** and counteract declining trends within settlement policy framework while ensuring key assets in rural areas are protected.
- Objective CS 4-2e of the plan is to strengthen and protect the rural communities and agricultural infrastructure and productivity. Support of quality of life is identified.
- The Map Browser does not identify any further objectives of relevance.

## 6.11. **West Cork Municipal District Local Area Plan 2017 / Blarney Macroom Municipal District Local Area Plan 2017**

6.11.1. The area of interest straddles two Local Area Plan districts.

6.11.2. West Cork Municipal District Plan.

6.11.3. The plan contains few specific references to renewable energies and none relevant to the subject proposals. The need to establish mechanisms between the key stakeholders in order to deliver critical infrastructure (including energy) is noted in section 7.1.8. Some specific references to promotion of walking routes are provided but none are relevant to the subject locality.

6.11.4. Blarney / Macroom Municipal District Local Area Plan 2017

6.11.5. The plan contains few specific references to renewable energies and none which are relevant to the subject proposals. The need to establish mechanisms between the key stakeholders in order to deliver critical infrastructure (including energy) is noted in section 6.1.8. Some specific references to promotion of walking routes are provided but none are relevant to the subject locality.

6.11.6. The Map Browser does not identify any specific objectives in the vicinity of the sites.

## 6.12. **Natural Heritage Designations**

The nearest European sites are:

- The Gearagh SAC to the north
- The Gearagh SPA
- Bandon River SAC to the south-west
- Mullaghanish to Musheramore Mountains SPA to the north-west.

## 7.0 **The Appeal**

### 7.1. **Grounds of Appeal**

7.1.1. Jerome Cohalan and Geraldine Hanley

7.1.2. The appeal of Jerome Cohalan and Geraldine Hanley relates primarily to property value, which it is stated will be reduced by the proposed development. The appeal is supported by an estate agent's valuation which indicates that the property value will be reduced.

7.1.3. Barna Wind Action Group

The appeal of the Barna Wind Action Group includes a range of documents including legal submissions and submissions to the planning authority. The Board is requested to take all of these into account.

7.1.4. Appeal letter of Newman Linehan Carroll Coffey Solicitors states:

- In Cork, Limerick and Roscommon **homes have been abandoned** as a result of windfarms, which were permitted based on **decisions which were not proven to be sufficiently robust.**
- The review of the 2006 guidelines including noise and shadow flicker requirements is an acknowledgement that they are **not now fit for purpose.** Our submission to that review is a key component of this appeal. It is a matter of logic and best practice that **no permission should be granted on the basis of those elements of the guidelines.**

7.1.5. The enclosed submission of Michael O'Donovan is wide ranging and is considered below under relevant headings.

7.1.6. In relation to **ecology** –

- There is a connection by way of the Cummer River between the proposed development and the Gearagh cSAC and SPA. The Kelly judgement requires very stringent comprehensive analysis and careful recording throughout the stages of AA. In the absence of information in relation to the hydrology of the lake reservoir with regard to lake water balance, geochemical processes, siltation and sedimentation and so on the Board should re-evaluate the decision of the planning authority to screen out requirement for NIS.
- The judgement C418/04 as updated in July 2015 is referenced in testament to the poor record of Ireland with regard to the Birds and Habitats directives.

- Regarding Hen Harrier there is an overlap between the SPAs and the strategic search area for wind energy.
- White tailed sea eagle, kestrel and snipe, together with specific named habitats and invasive species have not been adequately considered.
- Land alteration has taken place including at riverbanks. This included field boundaries, which were important as flight path for bats. Map is enclosed.
- Further, new drainage ditches have altered the rate of water flow in the area. The stated number of bat roosts in the area is erroneous. The River Bride is not 1.5 km from the site but is in fact within the site. It needs to be considered along with the ecologically important Marsh. Invasive species need to be considered including in relation to the haul route.

7.1.7. Regarding the substation and the nature and extent of the development:

- The substation will be taken over by Eirgrid, who will be free to make connections and extensions as required – there will be further connections including Shehy More wind farm and therefore the substation qualifies as a transmission generator strategic infrastructure development.

7.1.8. Regarding the **visual impact**:

- The visual impact of the development would affect protected scenery and impinge on waymarked walks and tourism. The permanent visual impact could not be mitigated.

7.1.9. On matters related to proper planning and procedures:

- The development is contrary to objectives designed to protect people and the environment and is not proper or sustainable development. The permitted substation does not meet current standards and did not set a precedent and the permitted 14 turbines cannot be built without the new substation.
- The EIS document is legally deficient and the entire planning application invalid. The Board's Inspector under reference PL04.219620 recommended refusal of permission referring to the intimate nature of the landscape, the pattern of residential development and that the development would be excessively dominant visually obtrusive. The planning authority did not give

due weight to policies in the CDP including in relation to scenic routes, which will be dramatically affected. The regime for AA and EIA in place at the time of permission being granted for 14 turbines was deficient.

7.1.10. On the issue of **noise**:

- The further information request for determination of true background noise levels has not been responded to in a satisfactory manner. This is a crucial issue. As it stands the windfarm is only barely within allowable noise threshold as per the windfarm guidelines. Issues regarding turbine make and model and methodology of noise modelling are unresolved. Conditions 22 and 23 of the decision of the planning authority imply potential to exceed allowable thresholds. Implementation and monitoring are queried.

7.1.11. **Other matters** of note which are referenced are:

- Construction traffic and effects on roads and surface water run-off, health and safety not adequately considered.
- 19<sup>th</sup>-century field boundaries which were to be subject of archaeological testing and recording have been removed in the interim.
- Regarding hydrology the potential for contamination related to minerals from concrete bases is potentially significant and is not addressed.

7.1.12. The main enclosures presented with the appeal are:

- Observation of 9<sup>th</sup> July 2015 to the planning authority
- Observation of 2<sup>nd</sup> February 2015 to the planning authority
- Legal judgements including O’Grianna
- Submissions of NLCC to the planning authority in response to the proposed substation application
- Submission of NLCC to the Department regarding draft noise guidelines
- Submissions of Dr Christopher Hanning to the Australian Senate elected committee on wind turbines and to an oral hearing under PL05B.240166 on behalf of Glenties wind information group



- Document relating to wind turbines installed in Portugal and relating to infra-sound and low frequency noise
- An article published by the Royal Society of Medicine in relation to diagnostic criteria for adverse health effects in the environs of turbines.

## 7.2. Applicant's Responses

7.2.1. The applicant in a response submission received by the Board on 6<sup>th</sup> January 2016 comments in reply to the third party appeal by NLCC Solicitors on behalf of Denis Buckley and others (Barna Wind Action Group):

- The making of separate applications for the turbines, substation and haul route together with all information relevant to assessment of cumulative impacts have already provided in significant detail in the windfarm planning application, response to the further information of May 2015 and the clarification of further information of September 2015.
- Regarding the O'Grianna judgement impact of the development overall has been considered.
- The extant permission remains valid. Both the permitted and proposed development are subject to EIA and there has been a comprehensive review of all aspects of the site of the proposed development.
- Each of the separate applications was also accompanied by separate AA screening reports and the cumulative impact of windfarm along with other developments including the substation and public road modifications were fully appraised.
- Criteria for noise, shadow flicker and proximity as described in the 2006 guidelines are used in this application. Separation distances of 500m are provided for between the turbines and the nearest non-involved residents.
- Inappropriate to appraise the application on any limits other than the current (2006 guideline) limits.
- Published reports suggest that the presence of wind farms does not devalue residential property.

- The surveys undertaken did not show significant bat activity within the immediate vicinity of the proposed turbines with the possible exception of turbine 6. Comments are made on studies undertaken. No evidence of mortality of bats on similar scale in Ireland.
- Replacement data presented in the further information response based on the appropriate selection of wind speed data are generally lower than the results in a single 10 minute instantaneous wind data presented in the EIS.
- The incomplete further information submission was rectified by the additional submission of July 20<sup>th</sup>.
- Regarding the Scottish look-back study the re-modelling of noise levels at 10 no. wind farms showed that 5 were under-predicted, 3 no. were over-predicted and the remaining 2 no. had limited differences – the study concluded in support of the IOA GPG, which was the basis for the EIS predictions.
- The noise appraisal is robust and accurate. The standard methodology published by the IOA as a supplementary guidance note in July 2014 for post-completion monitoring will be employed by the applicant to demonstrate compliance in a transparent and co-operative manner with the local authority.

7.2.2. In response to the appeal of Jerome Cohalan and Geraldine Hanley:

- Views of the auctioneers are speculative in nature and their report is not peer-reviewed or published. Published reports to date suggest that the presence of wind farms does not devalue residential property. Three particular studies are cited and summarised. The reports suggest that there is not devaluation and also identify areas for further research
- The appellants' houses are shown as location A and B on the attached map and the Cohalan property is H71 in the EIS. Both houses are closer to the operational Garranereagh wind farm than the current proposal.

7.3. **Observations**

7.3.1. Michael P. and Mary O' Riordain (Clashbredane)

7.3.2. The objection is related to aesthetic factors, pollution and health impacts and financial factors. We previously objected regarding the Clashavoon-Dunmanway power line (VA0010) which has been built over our farm. The **view from our kitchen window will include an ugly pylon and 3 sets of poles** and we do not need more turbines on the horizon.

7.3.3. Anthony Cohu of Borlin, Bantry

7.3.4. Raises points related to principal and specific points relating to visual impact.

7.3.5. In relation to **matters of principle** it is stated:

- European and national renewable energy policies and programmes not subject of proper SEA with full public participation and should therefore be deemed invalid or refused as premature.
- Proposed development **does not conform to the guidelines** including those in the development plan.
- **Premature pending comprehensive sustainable energy policy** for the county.
- Taken in conjunction with existing and permitted windfarms in the area also will create an **excessive concentration of** such developments. A grant of permission would be inconsistent with other refusals.
- Proposal is a material contravention of CDP 2014 as it is located adjacent to a high-value landscape area. Location is prominently visible from scenic route SR 36 near Terelton and will be **obtrusively visible from SR 35 near Kilbarry and noticeable from SR 32 near Inchigeelagh and SR 26 near Renaniree**. Would therefore be a **material contravention of the CDP 2014 policy relating to views from scenic routes**.
- The submission elaborates on these points and contains a critique of guidance and policy. The current development plan requires to be interpreted by An Bord Pleanála in terms of the principle of proportionality and having regard to visual impact and protected areas.

- In the absence of the local authority preparing its own EIA the planning authority must be confident that the work in the submitted EIS is prepared with due diligence and that the conditions are complied with and enforceable.

7.3.6. Patrick Manning, Barnadivane

7.3.7. One of the **turbines is to be within 600 m of my home and within 500 m of an old farmhouse**, which is a site which my nephew plans to develop. Significant opposition in the area. Would detract significantly from the community and devalue property.

7.3.8. Nigel Fennell

7.3.9. Reports the **effect on animals** who are more agitated since the existing turbines were erected. Despite a 2 mile distance from the turbines I noticed an increase noise recently especially when the wind is blowing. The development would ruin many people's homes and lives. Would devastate tourism in the area. Revenue will go abroad. Other forms of alternative energy should be promoted.

7.3.10. Teresa Flynn, Farranmareen

7.3.11. Resides 2 miles from existing windfarm. Disputes the assessment of visual impact and the description low level impact which appears to be used in all sorts of situations. Very noticeable impact from the existing wind farm together with the proposed substation have not been adequately considered. On occasion existing windfarm sounds like noise from an airport runway. Cumulative impact of noise is required.

7.3.12. Michael Allen

7.3.13. Noise and visual impact not properly considered by the planning authority. Noise did not exist in area prior to wind turbines. Existing wind turbines can be seen for wide distance.

7.3.14. Stephanie Larkin

7.3.15. Information presented under PL 04.243486 (Shehy More windfarm) and PL 04.244439 (Barnadivane substation) indicates that a further 12 wind turbines and a further 5 (the planned Keel energy proposal) are to connect to Barnadivane substation. These projects are commercially connected and should be treated as one project for the purposes of the application to enable assessment by residents.

My land, which is 100m from the nearest wind turbine is used for keeping a race horse, which will not be possible. Potential for run-off to the river Bride. Bat roosts in the area which are known to exist not been properly surveyed. Impact on White tailed Sea Eagle, which has been seen in the area.

7.3.16. Tony Miller, Sarah Hodkinson and Daphne Babington (Toureen, Moneylea)

7.3.17. The main points of the submission include:

- Visual impact over extensive area including from an area of high landscape value and from walking trails and R585, which is an important route for tourists. Enclosed map shows existing and proposed 63 turbines within 25 km of Barnadivane. These separate applications for windfarms and the substation all disguise the overall cumulative impact of a large-scale project. Proposal constitutes project splitting.
- The Lee Valley and the Gearagh are especially important for migratory birds especially waterfowl and raptors, which are noted in the windfarm guidelines to be susceptible to collision. Cumulative effects on bird populations.
- Water Framework Directive requirements demand no reduction in water quality whatsoever. Baseline data including maximum daily rainfall figures is entirely absent. How then can the **functioning of stilling ponds for example be assessed**. The potential for the **proposed mitigation measures to be overwhelmed by an extreme rainfall event** is considerable. ABP is not in possession of necessary data to complete an appropriate assessment.
- Mr Dick Bowdler (adviser to the British government on turbine noise) found that the **assessment for the Shehy More windfarms were not fit for purpose**, which is likely to be the case again. Residents close to the existing 4 no. turbines at Garranereagh have reported intolerable levels of noise impacting residents and livestock.
- Concerns relating to safety include those highlighted in the regulations for the Vestas V90, which advise against staying within a radius of 400 m of the turbine and ensuring that children do not stay by or play nearby the turbine. We assume that safety considerations are similar for all models. **Potential fire hazard** as witnessed at a nearby turbine, which involved dislodging of 2

of the 3 rotor blades which were thrown 250 m away and resulting in forest fire. **Turbine collapses** have also occurred. Windfarm developers and the wind energy guidelines are blasé about the risks associated with wind turbines.

7.3.18. Eleanor O’Leary

7.3.19. Resides 1.6 km from existing windfarm at Garranereagh. Since operation we experience noise pollution levels ranging from mild to extreme and noise is especially bad when wind is from the south or south-west direction. One of the proposed turbines will be less than 1 km from our house. Further noise impacts will occur. Interference also with our wireless calving camera. Irreversible impact on area from a visual perspective. Negative impact on property valuation.

#### 7.4. **Further First and Third Party Submissions – subsequent to the Board’s Direction of July 10<sup>th</sup> 2017**

7.4.1. This section lists the comments relating to the period after the decision was quashed, following which observers and appellants were circulated the first party response to an appeal and the parties and observers also invited at that time to make any general comments on the application having regard to the passage of time – the Board’s Direction of July 10<sup>th</sup> 2017 refers.

7.4.2. First Party

7.4.3. The applicant indicated no further comments to the circulated documents. This submission includes a copy of the quashed order.

7.4.4. Third Party

7.4.5. Response of **NLCC Solicitors** received on 2<sup>nd</sup> August 2017 on behalf of **Stephanie Larkin and Michael O’Donovan**, who authored / compiled the bulk of the material presented.

7.4.6. The additional observations of NLCC Solicitors are:

- The **clients continue to rely on the grounds advanced in the Judicial Review** proceedings, which were not dealt with when the proceedings were compromised by agreement.

- The latest proposal by the applicant and related companies includes the proposed construction of a substation next to the proposed Carrigarierk wind farm (reg. ref. 17/431) to which the proposed 6 no. turbines may be connected and **the Barnadivane substation may never be constructed.**
- The Board needs to be able to identify and describe on the record just what ‘the project’ is for the purposes of discharging its obligations under EIA and AA.
- The enclosed working paper contains a detailed study evidencing the effect of **wind turbines on the value of nearby properties.** If the Board remains in any doubt on this important issue it is required to solicit competent expert valuation advice before coming to a conclusion.
- In its decision on the **Ardglass case** (PL04. 246824) permission was refused on the basis that the local noise environment would be significantly changed – the predicted increase in ambient noise levels ranged from six to eleven times the present ambient levels – at least that level of increase would be seen at our clients properties.
- **Amplitude Modulation (AM)** has been recognised as an adverse impact of noise from turbines of this scale and there is an unanswerable case for assessing this impact.
- The three enclosed reports refer to the matter of AM at industrial turbines. The **matter is not addressed by the conditions normally imposed by the Board** – it is requested to be addressed specifically in its conclusion on the noise issue in these cases and the result of that assessment must be recorded into its decision.

7.4.7. The enclosed submission of Stephanie Larkin and Michael O’Donovan, whose residence is 609m from the nearest turbine includes the following comments:

- Under PA0046 the Inspector noted that the ‘overriding consideration is that the assessor should be able to reasonably justify that there are no other suitable noise sensitive locations in the vicinity of the proposed development and close to a dwelling where background noise levels would be expected to

be consistently lower than at the selected position'. Selected locations are inappropriate. Inadequate consideration of altitude.

- The outright **refusal to carry out further surveys** and the lack of a detailed account from the planning authority and ABP as to why this was acceptable is a game changer with regard to the completeness and validity of the EIS and is strong grounds for judicial review.
- Extracts provided from **research papers on noise** – pending the new noise guidelines being put into place and local authorities being equipped with means to accurately monitor the Board is urged to set aside this application.
- The signposted walkway along the south-western boundary and the walk which bisects the site on the road which goes between T3 and T4 – these are regularly used – a noise sensitive location should have been selected as per the Guidelines.
- If completed the development would result in residents situated between two wind farms of different size turbine creating **an inharmonious and very visible industrial feature on the landscape in contravention of the Guidelines** – would permission be granted for a single development comprising different height turbines.
- The applicant should be allowed to fall back on their 'do nothing scenario' and to build the **permitted 14 turbines – these were chosen to blend in** with the Garranereagh wind farm.
- The Guidelines state that 'wind energy developments within relatively close proximity to one another may be so close as to be in the same visual unit and, therefore, **should involve the same siting and design approach**'
- The Guidelines also say that the creation of a 'visual stacking' effect from a sensitive viewpoint should be avoided.
- We note the recommendation under PA0046 that the **effect on two-storey houses should be modelled** – that should be done to ensure that the effect of shadow flicker is not underestimated – revised Guidelines includes strengthened provisions for shadow flicker.



- We would like to see the co-relation of meteorological conditions with predicted shadow flicker results – we are not satisfied with the results.
- A further **100 submissions were added to the original 259** made to the planning authority – all are opposed – inadequate consideration of stakeholders.
- There is a functional interdependence between the windfarm and substation and project splitting has been facilitated by the planning authority and the Board.
- We have notified the applicant, the planning authority and the Board of the **bat roost in our attic but it has not been taken into account** – if the Board does not ensure that a **robust and reliable bat survey** is carried out as part of the EIS the matter will be taken to the European Court
- Similarly I refer to the information previously submitted on breeding and wintering birds – as usual there are **multiple pairs of snipe on site** and other species which do not appear in the EIS and which lead us as ornithologist to conclude the EIS is inadequate.
- The EIS incorrectly states that there is no recreational amenity uses in this area, which is used by **local hunting groups** on an annual basis.
- The Inspector’s rejection of the application and proposed development of the Barnadivane substation was resounding and the **Board failed to provide a reasoned and coherent process as to how it arrived at its decision to grant permission**. Unless clarified we will seek recourse to judicial review.
- **Need for a 60 MW substation has not been provided** – we have asked for evidence to be provided from Eirgrid as to the rationale – this has not materialised and the Board appears to have ignored the request.
- Evidence for and the nature of a **grid connection** at Barnadivane and of the newly proposed Carrigarierk substation is also required to properly assess the full implications and extent of the Barnadivane windfarm project.
- The planting plan lodged by the applicant is inadequate and pointless.

- The Inspector or the Board made no reference to the planting plan or my submission.
- We therefore ask the Board to engage a competent person to assess the planting plan and to have those findings published for public comment.

7.4.8. The enclosed submissions are the FCN working paper number 3/2012 which assesses the impact of windfarms on property values, a paper by Mike Stigwood and others relating to audible amplitude modulation and the paper by the same author reporting on the results of a long-term study of community impact from windfarm noise monitoring on a continuous period.

7.4.9. Eleanor O’Leary

7.4.10. In a further submission received by the Board on 8<sup>th</sup> August 2017 the observer reiterates points previously made and also comments on the negative and irreversible impact on the amenities of the area. The main points of the submission includes concerns relating to physical and mental well-being related to noise and in particular the impact on her youngest child who has a hearing impairment.

7.4.11. Tony Miller, Sarah Hodkinson and Daphne Babington in a further submission received by the Board on 4<sup>th</sup> of August 2017 includes the following comments:

- The planning authority has not properly carried out its duty in its acceptance of the findings of the peer review by AWN and the decision to revoke part of its own further information requiring additional noise monitoring.
- AWN’s comments relating to the lack of need for further noise survey works is unscientific and it is a major flaw that the planning authority accepted this conclusion –strong grounds for judicial review.
- We respectfully ask the Board to reactivate Cork planning authority’s request for further noise monitoring.
- The Board considers that it can reach a balanced decision because it had the windfarm and substation before it - however part of the project, a road, is without EIS and is not before the Board – it is therefore queried how the EIA may be concluded by the Board.

- Project splitting resulted in additional costs and does not facilitate proper participation.
- The hydrological connection to the Gearagh SAC is now accepted – the contention that the Cummer River enters the reservoir downstream of the Gearagh is merely semantics as many of the aquatic organisms within the reservoir migrate within the entire reservoir as do many of the birds for which the Gearagh SPA was created. The area in which the Cummer River enters was is highly important to birdlife.
- A turbine collapse, spillage or other scenarios would have very serious consequences.
- IFI should be notified in view of the importance of the reservoir for **Lamprey**.
- The worst-case scenario as required by the Habitats Directive has not been demonstrated.
- There has been a failure to assess the environmental implications of the project at the earliest possible stage under the EIA Directive and to comply with the Aarhus Convention.
- There has **not been a comprehensive demonstration of the overall cumulative effects**. Instead the applicant has cobbled together a patchwork quilt of extant EIS document and presented this to the Board as a legitimate cumulative impact assessment – if the Board has assessed the overall environmental effects of windfarms in the upper Lee Valley we have not seen evidence for it.

7.4.12. For all of the above reasons we request that permission be refused.

## 7.5. Further circulation of documents

7.5.1. By Direction dated 31<sup>st</sup> of August 2017 the Board decided that the applicant and the planning authority should be entitled to comment on the observations received from Eleanor O’Leary, Sarah Hodgkinson and others and NLCC / Barna Wind Action Group.

7.5.2. The further response of NLCC (Barna Wind Action Group) received on 6<sup>th</sup> and 9<sup>th</sup> October was also circulated to the planning authority and the applicant. The applicant responded.

7.5.3. **NLCC/ Barna Wind Action Group** response of 6<sup>th</sup> and 9<sup>th</sup> October 2017 includes:

- Serious noise nuisance is being experienced in multiple sites due to windfarms which claim to be complying with conditions and Councils are having **difficulty taking effective action** due to badly drafted conditions.
- The Ministers have detailed that current guidelines are unfit for purpose yet the Board continues to rely on unreliable computer predictions and unfit guidance, which does not even address the recognised nuisance proposed by excess Amplitude Modulation.
- Enclosed are a number of submissions.
- Patrick Manning submission identifies an investment property 400m from T4 – refers to the 500m minimum distance and the proposed 1000m limit suggested under the proposed Wind Turbine Regulation Bill 2016.
- Both of my properties labelled 54 and 55 respectively the subject to noise levels in excess of 43 dBA, the allowable night time limit.
- A submission by Denis Buckley, Michael O'Donovan and Stephanie Larkin - the 14 turbine windfarm permission has lapsed - re-assessment needed.
- The separation distances between a number of houses is also provided.
- A submission by KMS auctioneers refers to the properties of Geraldine Hanley, Jerome Cohalan, Dan and Tessie Galvin and Paddy and Noelle Sheehan for which a **valuation of properties are provided** and comments of the report indicate that the erection of a **wind turbine creates apprehension** in the general public which diminishes the prices.

7.5.4. Further Applicant response:

7.5.5. The further response of the applicant to the third party submissions was received on 16<sup>th</sup> November 2017. The main points are:

- Compared with the previously permitted scheme there is a reduction in the length of access roads, hardstands and ancillary infrastructure.

- The background including in relation to the judicial review is outlined and this submission responds to 5 no. listed submissions received from and on behalf of third parties in August and October 2017.
- The policy context is reiterated and updated to include reference to the **National Mitigation Plan 2017** which notes in relation to wind energy that if the 40% target is to be achieved that there is **a further 780MW to 1,180MW required to be installed by 2020.**
- An enclosed table provides a summary of the submissions collected and the relevant sub-headings.
- **Hayes McKenzie provides a detailed response to the noise issues raised and deals with the combined issues.** The assessment of the case by the planning inspector under PL04. 245824 (page 20 of 39) refers and an extract from the report is presented.
- Regarding the potential **effect on wireless equipment it is acknowledged** that it will be possible that some houses in the immediate vicinity may require some remedial measures and this matter will be addressed individually as the need arises. Prior to construction baseline survey of telecommunication systems will be carried out and **if post construction additional impacts are experienced a qualified expert will be deployed to address the technological issues.** Section 13.3 of the EIS refers. The assessment of the Inspector on page 28 also refers.
- Regarding the matter of undertaking environmental impact assessment the reason for the separate planning applications along with detailed information in respect of potential cumulative impacts has been outlined in detail and we again refer to the Inspector's report on this case.
- The recent permission for a 150m road is referenced. 2 no. further applications are pending in proximity to the site namely the Shehy More grid connection application and the **Carrigarierk substation application** which were lodged subsequent to the development of the subject application but which both considered the subject proposal cumulatively. **The Board undertook an EIA of the entire project. The Barnadivane windfarm application as presented can be built and operated independent of the**

### **Shehy More grid connection and the Carrigarierk substation consents.**

Cumulative impacts were considered. The main cumulative impacts identified are associated with short-term slightly negative construction impacts. The current proposal before the Board is a **stand-alone project** and can be developed on its own right.

- Since 2011 Eirgrid requires layout and size allow for potential future expansion. Barna are contracted to provide 60 MW of electricity.
- Highly unlikely that any silt laden run-off or pollutants that may arise during construction would enter the upper reaches of the Cummer River let alone the Carrigadrohid reservoir and then in turn meet with the upstream waters at the Gearagh cSAC.
- The cumulative visual impact of the proposed windfarm in conjunction with the Garranereagh windfarm are addressed in section 8.3.1 of the EIS which concludes the **additional cumulative visual impact is low and is less than would result from the permitted Barnadivane windfarm.**
- Response to the 3<sup>rd</sup> party appeal to the Board in January 2016. This notes that a **500 m separation distance would generally be considered to satisfy issues of visual dominance.** Use of the existing 2006 guidelines is appropriate. The assessment of residential amenity is a matter of professional judgement and relevant to the development plan and section 38 Guidelines. The assessment of the Planning Inspector refers.
- Regarding the use of the lands by hunting groups none have made a submission - nor have walking groups. There are **no formally marked routes** on the Discovery Series.
- No requirement for shadow flicker assessment on two- storey houses to be modelled. Shadow flicker limits as per the current guidelines policy are complied with. The applicant is committed to carrying out a shadow flicker compliance check within the 1<sup>st</sup> year of operation and controls can be put in place if necessary.
- A number of published reports on **property values** are referenced in detail. In the absence of Irish based studies there is no option but to rely on peer-

reviewed studies from other countries. The particular study noted by NLCC is not peer reviewed and it also concludes that further investigation is needed to derive general conclusions and reliable recommendations. The valuations presented relates to 3 no. houses and the method valuation is not shown.

- There is no entry for H38 which is 400m from T4 in the Eircode 2017 dataset, indicating it is **not an occupied dwelling** and hence no requirement for assessment of noise impact under the WEG.
- The location of the known bat roosts within a 10km boundary of the site are not identified at the request of BCI but has been used to inform Bat Impact Assessment. RFI states that there are 28 bat roosts within 10km of the proposal. Activity is low except around T6 and close to T1 and T2.
- To compensate for hedgerow removal **bat boxes are to be installed. Clearance of vegetation around turbines** is to be undertaken to ensure that bats are not drawn to the turbines and this is to be undertaken in accordance with UK guidance on buffer zones.
- The study by Cryan is not deemed relevant. Evidence from Europe of bat collisions relates to migratory routes where large numbers are involved.
- **Woodcock are not known from datasets or surveys. Snipe were recorded** (few and sporadic observations) and suitable habitat is acknowledged and the species is likely to use the site from time to time. Various sections of the EIS (5.6.1, 5.6.2, 5.6.4, 5.7.5) and the further information (23.1) refer. The report of the Council's Heritage Officer refers. **No significant impact on bird species apply and no change to the assessment** is required.
- The primary objective of the planting plan was to maintain the connection between hedgerows for bats.

7.5.6. The **Hayes McKenzie acoustic consultant's report** enclosed as Appendix 1 may be summarised as follows:

- Extensive experience in the wind energy section all around the world. Currently acting Chair of IoA working group on Amplitude Modulation.

- The statement made in the NLCC cover letter regarding Ardglass is at odds with the Inspector's report and the decision under PL04.246824.
- It is not correct to state that the proposed development would result in 6 to 11 times increase of the present ambient levels of property.
- The IOA working group lead to publication of *Method for Rating Amplitude Modulation in Wind Turbine Noise* (August 2016) for the identification of the occurrence and level of AM, but this does not set out how the determined level of MD should be applied to a planning condition in the form of any character correction that may be required. Agreement with the planning authority is recommended.
- Regarding concerns of Stephanie Larkin and Michael O'Donovan measurements at or near the tops of hills are often quieter than Valley locations during low speed wind conditions due to the absence of noise associated with the flow of water.
- The **selection of locations for the monitoring of background noise was complicated by the existing wind energy development.** This is a very different circumstance to that described by the Inspector relating to PA0046.
- Levels presented in table 2 in the report attached are indicative of the noise environment found in rural Ireland during the daytime – comparable to other measured sites.
- Australian environment which is basis for one paper is very different – the issues raised however are addressed generally in the **IoA GPG which has been followed undertaken noise predictions for the site** including separation of background noise data into daytime and night-time, allowance **for wind turbine source noise uncertainty and inclusion of a correction for the valley affect – all of these matters have been taken into account.**
- Comments on individual houses are enclosed.
- The matters raised have already been addressed. The assessed impacts are representative and to meet the intent of the current 2006 guidelines.



## 7.6. Further submissions from parties and observers

7.6.1. Based on the Board's Direction dated 18<sup>th</sup> of December 2017 the applicant's submission summarised above was circulated to all parties and observers.

7.6.2. Responses were received from:

- Planning Authority
- Eleanor O'Leary
- Barna Wind Action Group.

7.6.3. The planning authority indicates no further comments.

7.6.4. The submission of Eleanor O'Leary largely re-iterates points previously made in relation to concerns over noise and particular concerns due to the hearing impairment suffered by a daughter. She also notes the prohibition in the UK on onshore wind energy. The proposal to address telecommunications difficulties if they arise is not acceptable. The UK study on property valuation is not sufficient and an Irish parallel should have been sought.

7.6.5. The submission on behalf of **Barna Wind Action Group** includes:

- Letter of NLCC Solicitors
- Letter of Denis Buckley
- Letter of Patrick Manning
- Submission of Barna Wind Action Group
- Report of Mr Dick Bowdler, Acoustic Consultant, supported by a number of supporting studies and reference material including:
  - Appeal decision – RES Developments Ltd - West Devon
  - Decision on wind farm – near Swinford
  - University of Salford – Research into AM – final report – July 2007
  - Wind Turbine AM Review report – Parsons Brinckerhoff - August 2016
  - Inspector's report PL04.243630
  - Acoustics Bulletin article – A Planning Condition for wind turbines

- Examination of Significance of Noise – commissioned by SEAI – Marshall Day Acoustics - Nov 2013
- ETSU–R–97.

7.6.6. The letter of NLCC Solicitors states:

- Continue to rely on the substantial grounds advanced in the Judicial Review.
- Error in relation to increase of 6-11 times ambient levels is acknowledged. Basic point however is that in the Ardglass case the Board agreed with the Inspector that a **6-11 dB increase over ambient levels is an unacceptable interference with residential amenity**. Same approach should be followed.
- The numbering of Mr Manning’s three properties is clarified.
- **We ask that the Board set out its assessment of the expert views presented** including the advice of Mr Dick Bowdler.
- None of the permissions granted by the Board has a condition limiting AM in specific terms although it is now recognised as a source of complaint and should be capable of being addressed by condition as Mr Bowdler discusses.
- The **Board should reject the type of open-ended condition described in section 3.13 of the Hayes McKenzie response** – it is vague, has multiple contingencies and a complete lack of specific metrics and further relies on a methodology published by a trade association for the energy industry.

7.6.7. Letter of Denis Buckley – this indicates that the wind from the north-east on 1<sup>st</sup> and 2<sup>nd</sup> January at a location 2km from the existing Garranereagh turbines caused great **distress to his horses** requiring them to be moved on advice of the vet. The proposed development will force me to sell my property due to interference with my farming and horses.

7.6.8. Letter of Patrick Manning – refers to his **investment property H38** and the failure to undertake a noise assessment which he considers unacceptable noting the 400m separation from T4. There is a requirement for 524m separation. The EPA recommendation for quiet areas is 27dB for night-time and several studies have suggested separation distances of up to 2400m

- 7.6.9. Submission of Barna Wind Action Group - the proposed substation is not justified. There is **no valid reason for the new substation**. The developer wishes to increase the capacity to facilitate other developments, which contradicts what he said explicitly in the application previously and elsewhere. We are pursuing further information requests as to date efforts have been unsatisfactory.
- 7.6.10. It is due inadequate surveys that recreational activity has not been recognised.
- 7.6.11. The matter of property valuations is evidenced by the **259 local objections**.
- 7.6.12. We disagree that Aarhus requirements are complied with.
- 7.6.13. **Woefully inadequate bird surveys**. It would be advisable that the Board request fieldwork to be carried out shortly. Spotted flycatchers are also in the area but not recorded in the EIS. The species which are breeding at the site and are not recorded in the EIS are listed: Snipe, Mallard, Reed bunting, Sparrowhawk, Kestrel, Long eared owl, Grasshopper Warbler, Spotted flycatchers and Buzzard.
- 7.6.14. The report of **Mr Dick Bowdler responds to the Hayes McKenzie submission** of 16<sup>th</sup> November 2017 and includes the following points:
- The background to this matter includes a recommendation in 2006 by the UK Department of Trade and Industry and the established working party to consider AM which both he and Mr Hayes were members. The final minutes differed from the draft and said that ‘it was agreed that a greater understanding of the effects and causes relating to AM were required to ensure that this phenomenon can be managed’. The group recommended a study, which was never carried out – instead the Salford report was published, which set out the nature of complaints to date half of which suggest AM.
  - Following a 2013 publication planning conditions began to be attached including one by the Secretary of State - a suspensive condition. The IoA report of August 2016 identified a **need to define a robust procedure for measuring and assessing AM and for addressing the matter in planning conditions**. The October 2016 Wind Turbine AM Review had one single recommendation, which was that excessive AM be controlled by planning condition relating to periods of complaint which periods should be identified by measurement using the metric proposed by work undertaken by the IoA. No

model condition was set out. **Conditions which have been used** are summarised in the paper published under Acoustics Bulletin November – December 2017, which is attached. There remain **concerns that the penalty graph needs to be re-visited but it would be better to proceed on this basis than not to address the matter at all.**

- There have been a number of successful schemes to mitigate AM, which in my experience is at least a part of the reason for complaints about wind turbine noise in most cases. The industry have not shared the mitigation measures.
- ETSU-R-97 on page 68 refers to blade swish only in terms of the effects that can be measured near reflective surfaces and suggests that no significant blade swish is included in the noise limits – Mr Hayes and EIS claim that it is.
- AM was not envisaged at the time of adoption of ETSU-R-9 or the WEG.
- Mr Hayes response suggests a suspensive condition and as implied earlier there is a condition available and no reason why it should not now be used.
- It is not merely a question of whether a condition can be applied but whether AM should be taken into account in the assessment. Given the growing evidence the risk of **AM should be taken into account in any assessment.**
- Regarding the **monitoring locations selected I can only comment to a limited extent** as I have not seen the site. Regarding the criticism of H40 the Hayes response makes no specific comment. The assessment is based on background levels at **H40 and needs to be robust.**
- Section 5 deals with noise limits. The WEG state that in quiet rural areas where the underlying background noise level is under 30dB an absolute lower noise level of turbine noise during the day should be set at between 35db and 40dB but that otherwise the level should be 5dB above background. The EIS interprets this in a somewhat bizarre way as seen in Tables 9.6 and 9.6. The report of the Inspector under PL04.243630 takes a different approach (which I agree with) to the Inspector in the Ardglass case PL.246824.
- The position here is similar to the case set out by the Inspector under PL04.243630. The **lower limit of 35dB or 40dB should be followed by a**

**limit of 5dB above background noise.** There is no jump to 45dB as can be seen from Figure 3 of ETSU-R-97 which is the basis for the WEG. In terms of the WEG if a location has underlying background noise less than 30dB on a still day then it should never be given the 45dB limit.

- The **lower limit should be 35dB and no justification is provided for using 40dB.** This would still result in noise limits in excess of 5dB above background and so 35dB should be the highest acceptable limit.
- The DoEHLG commissioned MDA report recommended a flat noise limit at all wind speeds of 40dB. In Europe they are usually lower.
- In conclusion the predicted turbine noise level without any AM penalty is very close in many cases to the proposed EIS limits. There is a **significant risk that the nearest houses will suffer from AM** and in this case any penalty will cause a breach of the limits. If realistic limits are applied to comply with the WEG then there will be a **breach of those limits** by a considerable margin. Any AM penalty will increase that breach further to the extent that it may be impossible to mitigate turbine noise sufficiently.

## 8.0 ASSESSMENT

The remainder of this report is considered under the headings:

- Principle
- Environmental Impact Assessment
- Appropriate Assessment.

### 8.1. PRINCIPLE

#### 8.1.1. Policy context

8.1.2. The proposal comprises development under the wind energy sector, which is supported under a suite of policy provisions at European, national, regional and local levels. The national policy support is widespread as outlined in the relevant section of this report above and most recently includes support under the National Planning Framework. Further support is contained in the RPGs and the CCDP. Under the

adopted development plan this area is described as optimum in terms of its suitability and one in which wind energy proposals are deemed to be acceptable in principle.

- 8.1.3. In principle the general location of the site for the proposed wind energy development is acceptable in that context. Development of a substation to facilitate this development is a necessary requirement and I have considered in detail in the concurrent report the scale of the facility proposed and the policy context prevailing.
- 8.1.4. It is appropriate to consider notwithstanding the policy support for wind energy development whether there are conflicting objectives in the development plan in particular, which would militate against favourable consideration of the proposed development. I note that the submissions of third parties request that the policies set out, which relate to the support of local communities and local enterprise need to be balanced against the needs of the renewable energy sector and that the Board should demonstrate that an appropriate balance is achieved. I consider that this matter should be considered and that puts an onus on the Board in its decision making to be satisfied that the impacts on the local community do not undermine rural activities. In considering this issue I refer the Board to the landscape and visual impacts, to noise and shadow flicker impacts and to consideration of material assets in a wide context including property values, agricultural production and tourist and recreation amenities. It is appropriate that while accepting the designation of this area as being suitable in principle for the wind energy sector, the Board is also satisfied that the development complies with relevant policy and guidance. In that manner the Board can be satisfied that the wind energy development would be balanced with the protection and strengthening of local communities.
- 8.1.5. Regarding the level of opposition to the proposed development, I acknowledge that it is substantial as evidenced by the third party observations to the planning authority, which number about 350 submissions. This is a considerable number in a rural area. I note also the comments made by NLCC relating to concern on the part of the elected representatives in relation to the wind energy sector. I concur with the comments in the Inspector's report under PL04.245824, which identifies the role of the elected representatives in policy formulation and the need for the Board to adhere to the adopted policy in the making of a decision in this case. The substance of the third party submissions is also part of the information context for decision making purposes.

- 8.1.6. On a final matter of the policy context the Board is referred to the following.
1. The area in which the sites are located are not designated as being of high landscape sensitivity. This is an area which is specifically designated as acceptable in principle and suitable for wind energy development. Landscape and visual impacts on the Lee Valley to the north are considered below as are the surface water and ecological impacts.
  2. Regarding the tourist potential of the area based on heritage and / or walking routes there is no specific development plan support for these activities in this particular area and no national trails or features of nationwide heritage interest are present. The area already contains wind energy infrastructure and there is no evidence to support any claim that further wind energy development would significantly adversely impact on recreational or tourist development.
  3. The substantive national guidance for the Board to consider shall be the Wind Energy Guidance 2006 (WEG) pending the adoption of any subsequent Guidance. I refer below under the noise section to the emerging policy issues which are subject of much of the third party comment in this appeal.
- 8.1.7. In conclusion I consider that notwithstanding its purpose the development is of a type which is acceptable in principle in this locality having regard to the designated for wind energy. Nothing in national or local policy supports any other conclusion in my opinion.
- 8.1.8. **Whether the development might be described as Strategic Infrastructure**
- 8.1.9. A relevant matter raised by third parties relates to whether the proposed development would constitute Strategic Infrastructure Development, which application would therefore be appropriately made to the Board in the first instance. The basis for this argument relates to the alleged commercial and the future physical connections between the subject proposal, the Barnadivane substation and the Carrigarierk and Shehy More windfarms, substations and grid connections. The cumulative number of turbines in these facilities would clearly exceed the threshold for Strategic Infrastructure. However, these developments are distant and subject of separate applications for consent. The subject development before the Board does not constitute Strategic Infrastructure being less than the threshold set in the

Seventh Schedule and having regard to the determination by the Board in relation to the substation.

The definition of the project for the purposes of Environmental Impact Assessment is a matter for consideration in terms of cumulative impacts.

## 8.2. ENVIRONMENTAL IMPACT ASSESSMENT

8.2.1. The development is one which falls under statutory requirements for Environmental Impact Assessment and an Environmental Impact Statement has been submitted. In the preparation of this report as part of the basis for the Board in undertaking of an EIA I have had regard to the totality of the information presented including the EIS, the supplementary information presented by the applicant, the reports of the planning authority and prescribed bodies and the third party comments to the planning authority and An Bord Pleanála.

8.2.2. It is necessary that the EIA undertaken address direct, indirect and cumulative impacts. Having regard to the issues arising in this case I structure the assessment under the following headings, while noting the significant overlaps between the sections:

8.2.3. Air and Climate including:

- Noise
- Vibration
- Air quality including dust
- Climate.

8.2.4. Human beings including:

- Socio-economic impacts
- Shadow flicker
- Health and safety
- Community gain.

8.2.5. Landscape

8.2.6. Material Assets including:



- Cultural heritage
- Land use, tourism and recreation
- Property valuation
- Roads and Traffic
- Telecommunications.

8.2.7. Soils and Geology

8.2.8. Water

8.2.9. Flora and fauna

8.2.10. Alternatives

8.2.11. The interaction of the foregoing

8.2.12. Cumulative impacts.

8.2.13. I refer to the recent Circular 05/2018. This states that categories of applications which fall to be dealt with under the pre-existing Directive 2011/92/EU, before amendment by Directive 2014/52/EU include applications accompanied by an EIS made before 16 May 2017.

### 8.3. **Air and Climate**

#### **Noise**

8.3.1. In view of the emphasis on this matter in the appeal and observation submissions I propose to assess the data presented relating to the baseline environment and the results of modelling undertaken and consider it is also worthwhile to include some discussion on relevant guidance and standards, which in effect is at the heart of matters arising in many of the submissions on this issue. This section is therefore structured as follows:

- Baseline environment, modelled results and the WEG standards.
- Guidance and standards.
- Conclusions.

#### **Baseline environment and modelling**

- 8.3.2. The information presented in the EIS was supplement by first party submissions by way of further information and clarification of further information including a peer review of the survey and modelling work by AWN and most recently by the response presented by Hayes McKenzie to the appeal and observations. The decision of the planning authority also had regard to the comments of the HSE and the reports of the Environment Section.
- 8.3.3. The adequacy of the noise surveys is questioned by the third parties and was subject of detailed investigation by the planning authority. Notwithstanding the peer review by AWN of the work of Hayes McKenzie the third parties are of the opinion that an expert from abroad should be brought in for assessment and it is also suggested that the Board should have its own study undertaken. I accept both the expertise of Hayes McKenzie and the independence of AWN, whose assessment included a refinement of the daytime noise criteria curve and undertakes a worst case assessment. Based on my assessment of this matter, which is set out below, I consider that the input by noise experts and the resulting information is adequate for the Board to conclude an EIA in this case.
- 8.3.4. The third parties concerns relating to the noise assessment relates in no small part to the **method of the determination of background noise levels**, which it is stated is a crucial matter, which was not properly addressed in the further information response or subsequently. The third parties state that the overriding consideration given for noise measuring locations was security of equipment and that the majority of non-stakeholder houses were scoped out and the remaining locations are not representative.
- 8.3.5. The assessment of noise in this case is complicated by the existing Garranereagh turbines. It is a requirement under the WEG that noise from existing turbines be excluded. ETSU-R-97 identifies various means by which background noise levels from existing turbines can be derived. In the absence of any control over these turbines (and unable to have them switched off) the applicant selected a location away from this windfarm and adopted the lowest noise levels including by undertaking a correction for the existing wind farm.
- 8.3.6. Regarding the third party submission I find that there is little technical support for the call for more surveys based on inadequate or unsuitable baseline locations. The EIS

and the further information describe the 4 no. selected locations and the process of selection. It is incorrect to state that the selection was mainly related to security, although it is clear that such matters have to be taken into account and this is acknowledged by the first party. The applicant states that the selection process included establishment of locations which were representative and with a view to covering most affected properties. Hayes McKenzie in submission to the Board reiterates its opinion that the baseline figures are representative.

8.3.7. Of the 4 no. survey points in the EIS, H40 was selected as the most representative point for the purpose of the baseline conditions. H40 is described by third parties as a bizarre location for baseline assessment because of its distance from T4, T5 and T6 and because of the high altitude, although conceding that it may have validity for T1, T2 and T3. Mr Bowdler (acoustic expert for third parties) in his recently submitted report however does not follow this line of argument. He acknowledges that he could comment only to a limited extent on the baseline locations as he has not seen the site. In referring to the need for robust selection of locations he notes that the Hayes McKenzie response does not refer to H40. However, the selection of H40 as the background level representative for all locations was addressed in the submission to the planning authority received on 10<sup>th</sup> September 2015 and is addressed in the peer review of AWN. The selection of the baseline location close to a cluster of houses at H40 and at a remove from the existing windfarm was deemed suitable by the applicant's consultants and I concur with this assessment. Further the submissions on behalf of the applicant are stated to correspond well with survey results from other rural areas.

8.3.8. I note the comment of AWN that the approach to dealing with the existing wind farm is robust in the circumstances, which include an absence of suitable monitoring data from Garraneragh windfarm. The approach also appears to me to constitute a conservative approach. AWN reviewed the further assessment which took into account the measured baseline levels at the 4 no. survey points and the predicted levels for the existing Garranereagh site. The latter were logarithmically subtracted from the measured baseline levels to give a worst case approach. I am satisfied that it is demonstrated that the conclusion that the **estimated baseline levels presented are representative of the quieter positions in the study area**. As such they are an appropriate basis for the modelling undertaken.

- 8.3.9. The **modelled results** presented show that for wind speed between 4 and 10 m/s the estimated baseline levels are between 25.8 dBL<sub>A90,10min</sub> and 38.5 dBL<sub>A90,10min</sub>.
- 8.3.10. In terms of **applicable standards**, WEGs sets a general lower fixed limit of 45dBA (or a maximum increase of 5dBA), although in very quiet areas the use of a margin of 5dBA above background may unduly restrict the industry. Therefore in areas with background levels of less than 30dBA the daytime level of dBL<sub>A90,10min</sub> should be limited to 35-40dBA.
- 8.3.11. In line with the above the applicant has selected 40dBL<sub>A90,10min</sub> as the relevant daytime criterion for locations which have low baseline and 45dBL<sub>A90,10min</sub> elsewhere. The AWN assessment reworked the information and presented an updated set of criterion, adjusting them downwards for the purposes of assessment of the noise impact; the adjusted figures did not alter the assessment for most locations, notwithstanding the small changes in some of the predicted levels.
- 8.3.12. The results of either technical assessment (AWN or Hayes McKenzie) is essentially the same. In this regard I refer the Board to the more conservative of the two, which is that presented in section 5 of the report of AWN, which was received by the planning authority on 10<sup>th</sup> September 2015. The baseline information is characterised for 141 locations and based on the stricter daytime criterion adopted by AWN there is a predicted exceedance of the criterion at 14 locations of which 10 no. are stakeholders or derelict properties. Page 15 of the AWN report refers.
- 8.3.13. A salient point to note is that all of the properties at which there are exceedances of the adopted criteria are also influenced by the Garranereagh site. It is relevant to note also that the existing wind energy turbines have been described as giving rise from time to time to high levels of disturbance to animals and human beings.
- 8.3.14. At 3 no. of these properties (at which the AWN adopted criteria are exceeded) the problem is not evident at lower wind speeds but arises at wind speeds of over 8m/s. The breach of adopted criterion is of less than 0.5dB, which is not significant and in my opinion can be largely discounted. At the fourth property H28, the noise impact on this house was queried by the HSE, who also noted that the Guidelines do not say that at 500m noise will not be a problem. Regarding H28 the owner/occupants are stakeholders in the Garranereagh windfarm, which it is stated is and will remain the dominant source of noise at the property. The information presented is that there

is a difference of only 0.1dB between the cumulative (Barnadivane and Garranereagh) noise levels and that of Garranereagh alone at that receptor. I consider that the applicant has satisfactorily addressed this matter and that the conclusions drawn are reasonable.

- 8.3.15. The failure to assess unoccupied houses is reasonable in my opinion in view of the WEGs, which specifically state that a noise sensitive location is ‘any occupied house ...and may include areas of particular scenic quality or special recreational amenity importance’. I do not consider that the recreational uses in this area including cycling or walking routes would fall under this category. There is a waymarked trail to the south of the wind energy proposal but at such distance that noise impacts can be discounted and no assessment of noise effects would be warranted. There is reference to regular use of the road between T3 and T4 for walking but this is not a formal route or part of the national network. I consider that the decision in the EIS and in the review by AWN the focus on the impact on the 4 no. non-stakeholders is reasonable.
- 8.3.16. The Board can therefore conclude that notwithstanding the high level of noise on a cumulative basis at some locations, the predicted levels are not in fact significantly different to the existing situation. At many of the sensitive receptors the proposed windfarm would not contribute significantly. Increased values predicted, which are considered to be an over-estimation are in the order of 0.2dB at most at H28 for example. The existing turbines would have most influence at that location.
- 8.3.17. I consider that the third party submissions have not provided any strong evidence in opposing the baseline surveys or the predicted noise impacts and I reject the argument that the selection was biased. Regarding the specific objection to H48 as a monitoring location I note that it was not the main focus of assessment and that unusual noise records can be selected out during interpretation. Having regard to all of the evidence presented, I accept the approach undertaken by the applicant and the findings of the assessment, which demonstrate that noise as a result of the development on its own and when taken in conjunction with the existing windfarm would be within the spirit of the WEG as the applicant states. **I conclude that the assessment of baseline and modelled impacts undertaken on behalf of the applicant are robust and compliant with the WEGs.**

8.3.18. Regarding the selection of a **particular type of turbine** submissions on behalf of the applicant indicate that this would give rise to commercial difficulties. I accept this point. The exact turbine need not be specified provided its likely significant impacts are described and can be assessed. In terms of the proper planning and development of the area and the specific impacts for the purpose of EIA, I note that the applicant has specified the sound power rating and relevant dimensions of the turbines. I note the submission of the applicant that the modelling of the predicted sound pressure levels constitutes a worst-case scenario based on the commitment that the sound power rating of the specific turbine will comply with the limits set in the planning conditions. I consider that there is sufficient information available on the turbine type.

### **Guidance and standards**

8.3.19. Since the making of the decision by the Board under PL04.245824 the arguments on both sides have been consolidated in two specialist reports (Dick Bowdler for the third parties and Hayes McKenzie for the first party). Although there is a myriad of references and documents presented by the parties, it is my opinion that these two reports set out the remaining substantive issues in relation to many of the matters of concern to third parties. I also refer to the evidence of Dr Hanning.

### Third party Case

8.3.20. The original appeal submission presented on behalf of Barna Wind Energy refers to the evidence of Dr Christopher Hanning including his evidence in the case of a wind energy proposal at Glenties. Dr Hanning's submission referred to the low frequency noise component which can arise from wind turbines and to the adverse effects that can have on sleep and consequently on public health. The paper presented includes a detailed critique of the Irish and UK noise guidance and a literature review of papers from all over the world. Dr Hanning's conclusion is that large-scale turbines undermine the quality of sleep experienced by persons within 1.5km and that this sleep disturbance has unacceptable effects on health. The author also states that both NG3 and ETSU-R-97 are technically inadequate and erroneous and there is good evidence that receptors within 1.5km of a turbine are at significant risk of sleep disturbance.

- 8.3.21. Dick Bowdler's position on Amplitude Modulation addresses the 'blade swish' (AM) noise, which is considered by the parties to warrant particular assessment and to be inadequately addressed in guidance. His report was presented on behalf of third parties in response to the Hayes McKenzie submission of 16<sup>th</sup> November 2017. The Bowdler report specifically refers to aspects of the proposed development and the assessment undertaken by the applicant including in the EIS.
- 8.3.22. Regarding the general reports on file I consider that the Board should not put undue reliance on these documents, which in many cases will have been considered and debated by acoustic experts engaged in formulating policy and will or will not have been incorporated in that policy. In other cases the context of the information is unclear. It is worth referencing that in common with the Hayes McKenzie personnel, Mr Bowdler's expertise is clearly demonstrated to be at the highest levels.
- 8.3.23. On the matter of Amplitude Modification Mr Bowdler states that there have been a number of successful schemes to mitigate AM, which is at least a part of the reason for complaints about wind turbine noise in most cases. The industry have not shared the mitigation measures. In the absence of an agreed approach planning conditions have been attached in the UK including so called 'suspensive' conditions. The October 2016 Wind Turbine AM Review had one single recommendation which was that excessive AM be controlled by planning condition relating to periods of complaint, which periods should be identified by measurement using the metric proposed by work undertaken by the IoA. Conditions which have been used are summarised in the paper published under Acoustics Bulletin November – December 2017. Mr Bowdler and Mr Hayes are listed as contributors to this paper. There remains concern that the penalty graph included needs to be re-visited but it would be better to proceed on this basis than not to address the matter at all, according to Mr Bowdler.

#### Applicant Position

- 8.3.24. Hayes McKenzie acknowledge the phenomenon of AM but considers that it is addressed under ETSU-R-97, which is the basis for the WEGs, which allowed for the presence of this character with the assumption that it will not normally exceed a level of 3dB in a free-field noise environment. The response to the appeal identifies OAM (Other Amplitude Modulation) as the particular concern where in a free-field

environment the 'normal' 3dB modulation depth has exceeded the 3dB criterion at times by a significant level, perhaps as a result of a stall of the wind blade. Referring to the *IoA method for rating amplitude modulation in wind turbine noise* (August 2016), there is no certainty with respect to the method by which a penalty scheme for the presence of OAM might be applied. For that reason if it is deemed appropriate a scheme to be agreed with the planning authority might be appropriate. A wording is set out.

### **Assessment and possible conditions**

8.3.25. I consider that there is some level of agreement between the experts that in certain circumstances there may be issues with OAM. That is not to say that windfarms are by their nature prone to this phenomenon. It is also evident that the attachment of such a condition including a 'suspensive' condition is a highly technical matter. Critically, according to Mr Bowdler there has been success at industry level with mitigation but methods are unknown. I consider that this is a very significant statement made by an established acoustic expert, working on behalf of the third parties. This gives comfort that the industry is capable of resolving issues, if they arise.

8.3.26. While I have set out the various arguments made by the parties in relation to guidance I now revert to the simple conclusion that the national guidance prevails and that it would be unacceptable for the Board to pursue any alternative. Having regard to Mr Bowdler's comments relating to the specialist knowledge available at industry level, I do not consider that special conditions are warranted.

### **Conclusions**

8.3.27. I consider that it is reasonable to conclude that the approach to mitigation presented by the applicant is sufficient to address any excessive noise impacts and consequences for human beings. In making a recommendation on this matter it is necessary to set out planning conditions, which are to be in accordance with the *Development Management Guidelines* as well as the WEGs and which would adequately address impacts on human beings. I note that the OAM is not claimed by either party to be a highly likely consequence of the wind energy development if permitted. I consider that the issue is capable of being addressed by condition and that there is no basis whatsoever for refusal of permission for this reason or for



omitting a turbine or more. Instead, I refer the Board to condition 8 attached in the recent Shehy More decision (243486), which I consider adequately addresses any concerns relating to operation of the development as proposed. Therefore, I reject the claim made on behalf of the third parties that 'if realistic limits are applied to comply with the WEG then there will be a breach of those limits by a considerable margin. Any AM penalty will increase that breach further to the extent that it may be impossible to mitigate turbine noise sufficiently'. If that was to emerge as the case then the development would not be capable of being operated from time to time.

8.3.28. The applicant's mitigation proposals refer. In particular the applicant will agree a methodology for demonstrating compliance and for ongoing monitoring if that is required – condition 8 of 243486 would cover this. Based on the applicant's submission and the report of Mr Bowdler for the third parties and his reference to the fact that the industry has expertise in addressing any issues with OAM, I am satisfied that the recommended conditions below would be capable of implementation.

8.3.29. I therefore conclude that the development would be acceptable in terms of noise impacts. The Board can conclude for the purposes of EIA that subject to mitigation and the conditions below, the proposed development would not be likely to result in increased noise levels which would give rise to significant adverse effects on livestock or on human beings, including on human health and residential amenity.

### **Vibration**

8.3.30. The primarily potential sources of vibration which could result in temporary impacts on the residential amenities of the area would be related to the passage of heavy plant and delivery vehicles in the construction periods and to the borrow pit. Regarding use of plant and HGV traffic the methods of working, control of speeds and other measures could be agreed with the planning authority as part of the Construction and Environmental Management Plan. I consider that the Outline CEMP, which is part of the application documentation is a reasonable starting point in this regard and can be finalised in agreement with the planning authority in the event of a grant of permission. Regarding the proposed borrow pit, the location of which is identified, this is an area with rock which is close to the surface and is deemed to be suitable for use without crushing. The likelihood of any requirement for blasting is discounted.

- 8.3.31. Based on the above I consider that any construction phase impacts relating to vibration can be mitigated and that no significant adverse impacts are likely.
- 8.3.32. Separately, I also accept the information presented by the applicant which demonstrate no significant risks due to peat instability or ground subsidence.
- 8.3.33. I note that the Council's Heritage Officer refers to the need for a competent person to verify the conclusions in relation to soil stability and soil management. The Council's engineering staff support the conclusions of the EIS and this matter is adequately addressed in my opinion.

### **Air quality and climate**

- 8.3.34. Dust emissions are likely to be the most significant construction phase emission under the heading of air quality impacts. Impacts would be short-term and be highly localised. While there is potential to impact local residents, agricultural production, ecology and visitors to the area by reason of dust impacts this is unlikely to constitute a significant environmental impact and is capable of mitigation.
- 8.3.35. Other air impacts which warrant comment and consideration are emissions from vehicles and plant on the working site and along the road. Again, in view of the limited duration of the construction phase and the low traffic levels in the operational phase this is not a significant matter and there is no likelihood of significant impacts subject to implementation of the mitigation measures presented in section 14.3.1 of the EIS.
- 8.3.36. While there are many means of providing alternative energies in response to climate change concerns, the generation of power through wind energy is seen as one of the primary means suitable to Ireland. The applicant has referred to the gap in provision in this regard. Third party comments relating to alternatives are noted but must be dismissed in the context of the effectiveness and potential of wind energy and the strong policy support at local and national level. Effects on climate would be negligible in scale. However, the development would be described as having positive indirect effects through contributing to the increase in renewable energy on a national level and reducing reliance on fossil fuels.
- 8.3.37. In conclusion following consideration of the likely significant effects which fall under the broad heading of Air and Climate, the development is acceptable.

#### 8.4. Human beings

- 8.4.1. At the outset I refer to the obvious overlap between this section of this report and that above. I have concluded above that the proposed development would not breach air quality and noise standards. The purpose of the limits of such standards includes the protection of human health and amenity. As such I consider that it can be concluded that the proposed development would not give rise to significant adverse impacts on human beings including by way of human health and residential amenity impacts due to noise and dust and other air emissions.
- 8.4.2. In my opinion the remaining significant matters relevant to undertaking of EIA under the heading of human health falls to consideration of the following: socio-economic impacts, shadow flicker, health and safety and community gain. There are matters which are considered under 'Material Assets' which are also relevant to 'Human Beings'.

#### **Socio-economic impacts**

- 8.4.3. The EIS briefly addresses the matter of economic impacts on a wide range of scales and across different sectors including the national benefits in terms of balance of payments and the addition to local funding by way of rates and local benefits mainly in terms of the 15 people likely to be employed in the construction phase and the spin-off to other businesses in the construction and operation phases. The benefit to stakeholders in the development, which includes local people is likely to be significant through provision of a supplementary income. It can be concluded that the economic impacts would be described as positive, although some are of short duration and limited to benefiting only a few persons.
- 8.4.4. I will further address the issues raised by the third parties in relation to the development of the recreational assets of the area under the 'Material Assets' section below. The character of the area as a rural location and the various community activities, enterprises and values appears to be highly diverse. I am not convinced that there is any evidence overall that the development would undermine the strength of the local community by reason of population loss or dilution of its attractiveness for recreation. The existing wind energy proposal does not appear to me to have undermined the vibrancy of the area, notwithstanding that there is a level of objection on noise grounds and a high degree of opposition to further proposals of

this nature. I consider that there is simply no evidence presented in the hundreds of objections lodged to support any conclusion that the proposed development would significantly undermine the socio-economic functions which are the foundation of the community including in terms of residential and agricultural activities.

- 8.4.5. When considered at a national or regional level the development is in accordance with the adopted policy provisions and with the national objectives in relation to renewable energies and can only be considered to contribute positively to socio-economic benefits at that level.

### **Shadow flicker**

- 8.4.6. The potential for adverse impacts arising due to shadow flicker is amongst the most significant concerns set out by third parties. As with the comments in relation to noise assessment, it is submitted that the guidelines are outdated as indicated by the decision to review them and that the assessment for the purposes of the application is deficient.
- 8.4.7. I have already referred the Board to the need to comply with the relevant adopted WEGs. The WEGs indicate that at distances of over 10 rotor diameters there is very low potential for shadow flicker. In this case that would equate to a distance of over just over 1km in this case. There is also a requirement to address cumulative impacts.
- 8.4.8. The EIS follows this guidance, which I consider is appropriate and it derives modelled predictions for the houses within 1.01km of the turbines using industry recognised software. The first party submission is that in terms of the impact of the Barnadivane windfarm proposal in isolation the results of the modelling indicate that the effect on non-stakeholder occupied residential property is likely to breach the recommendation of no more than 30 minutes daily shadow flicker. Following refinement it is predicted that none of these houses would be affected by shadow flicker for over 30 minutes per day.
- 8.4.9. A cumulative assessment was undertaken to incorporate any effects arising from the Garranereagh windfarm. The EIS identifies that 23 no. third party houses are relevant for assessment of shadow flicker and that a total of 9 no. of these properties could in theory experience shadow flicker levels in excess of the guideline limits of 30 minutes per day as a result of the proposed development taking in conjunction

with the existing turbines. In view of the potential for cloud cover and following application of a correction it is concluded that none of the houses would be subject to excessive duration of shadow flicker.

- 8.4.10. The EIS also addresses the matter of the guideline annual limit which is stated to be unlikely to be exceeded and I accept this. I am satisfied that the relevant section of the EIS has been prepared based on recognised methodology and following the WEGs as is appropriate. In the event that mitigation is required at an individual property, the developer would aim to address the matter through agreement and by implementing measures such as planting of screening vegetation and / or fitting of blinds or curtains. The further provision set out in the event that agreement cannot be reached would be the installation of an automated switch off and in this regard the EIS describes how this would work and in Table 10.5 identifies the houses which might be affected. The applicant is committed to carrying out a shadow flicker compliance check within the first year of operation and controls can be put in place if necessary.
- 8.4.11. Regarding the suggestion that the shadow flicker effect on two-storey houses should be modelled to ensure that the effect is not under-estimated I note that there is no such requirement in the WEGs. Regarding the request that presentation be made of the co-relation of meteorological conditions and the predicted results I note that the predictions are based on an unrealistic assumption of 100% sunshine and the applicant has applied a 40% correction to address cloud cover. This appears to me to be reasonable and I do not consider that further data is required.
- 8.4.12. I conclude that the applicant's assessment of potential shadow flicker is sufficient and that effects are for short duration at a small number of houses and are capable of mitigation.
- 8.4.13. I recommend that the Board address this by way of a standard condition.

### **Health and safety**

- 8.4.14. The requirements to be addressed in terms of health and safety would relate primarily to the construction phase and are subject of national legislation. In the EIS it is confirmed that the development will be designed, constructed, operated and decommissioned in accordance with relevant regulations. The potential health and safety issues which are likely to be encountered relate to aspects of the construction

process which will be covered by a Safety and Health Plan and to matters relevant to the external and operational environment. The latter includes a range of potential hazards to workers related to working at height, working with electricity and general construction hazard. Control of access to the public would also be appropriate at certain locations and during certain phases. I accept that these risks are amenable to mitigation as proposed.

8.4.15. Although it is not indicated as a major concern the possible health and safety concerns which are raised by appellants and observers include that of blade throw, turbine stability and related matters including fires. In particular there is reference to the location of a number of houses within 1 km radius and the safety of occupants of these houses. While such incidents have occurred, I consider that they are highly unlikely and I note the commitment given that the design, construction and commissioning of turbines will be subject to rigorous safety checks. I note in addition that it is intended that the site will be free to access other than for the presence of cattle fencing. I concur with the case presented by the applicant that the site in the operation phase does not pose risks to human beings in terms of health and safety.

8.4.16. I conclude that following mitigation through the application of relevant procedures and regulations and the Safety and Health Plan, there is no significant residual risk.

**Community gain.**

8.4.17. A community gain proposal has been made by the applicant. While details are not fleshed out other than in section 10.3.2 of the EIS, it is stated to be likely to comprise payment to a Community Gain Fund which would be administered by a local committee. The means by which local residents could benefit could include annual payments towards electricity costs, funding for home upgrades, local road upgrades and minor works to local properties during the construction period.

8.4.18. In the event of a grant of permission the above commitment would apply. In this circumstance and having regard to the general approach of the Board not to attach specific conditions except in the case of Strategic Infrastructure applications, I do not recommend a specific condition.

## 8.5. Landscape and visual assessment

- 8.5.1. I have concluded above that having regard to the policy provisions relating particularly to this location that a wind energy development would be considered to be generally acceptable in principle. I refer herein to the landscape and visual impact of the proposed development.
- 8.5.2. I commend the quality of the photographic images prepared on behalf of the applicant which were received by the planning authority on 26<sup>th</sup> May 2015. Taken together with the written submission including the individual viewpoint descriptions in the EIS, the information available is of good standard. A cumulative ZVT provides a means of determining the number of turbines visible from any vantage point. I am satisfied that this information together with primary EIS documentation and submissions on file provide the Board with sufficient information for the determination of the EIA in this case.
- 8.5.3. At the time making a decision under PL04.245824 there was an extant permission for 14 no. turbines of smaller scale. That permission has now lapsed but it is referenced in the submissions of the third and first party. The images show the combined existing and the proposed turbines in other representations which allows for consideration of cumulative impacts and also show the previously permitted scheme.
- 8.5.4. The scale and nature of the proposed turbines together with the proposed substation subject of the concurrent appeal and the road works which are part of this appeal in conjunction with the previously permitted 150m road scheme will result in a significant cumulative impact. That is without doubt. There is no possible screening or further mitigation which would reduce the visual impact of the substantive element of the development, which is the turbines.
- 8.5.5. The visibility of the proposed turbines will be high in particular from the wider distance including from elevated lands where other wind energy proposals are in existence or are permitted. The detailed planning history above together with the application submissions refer. This is an area where the wind energy sector is established as part of the landscape and the proposed development has to be considered in that context. Significantly however the immediate lands containing residential development and proximate scenic routes are more sensitive receptors.

The third parties also make specific reference to scenic views, to the Lee Valley to the north and to walking routes.

- 8.5.6. On inspection I noted that the hilly farmland topography and vegetation results in the views to the existing wind turbines at Garranereagh frequently being obscured from view. The screening effect will be a factor in the experience of viewing the proposed development also and views to the turbines will be intermittent, particularly in terms of the majority of views from short distances. Notwithstanding the increase in turbine numbers from the existing 4 no. turbines to 10 no. turbines, if this development is permitted, I consider that the apparent scale of the windfarm when viewed from the immediate area would not be such as to dominate the landscape or to be considered unacceptable in visual terms when viewed from short distances. In deciding whether the development is acceptable in this regard I refer the Board to the references by third parties to recreational routes and to the scenic route to the north-west. In view of the scale of the turbines they would be visible from these features but I do not consider that they would be dominant or intrusive or militate against the enjoyment of the landscape including for active and passive recreation. Regarding the regional road to the south which is described as being important for tourists, I note that it is not designated for protection in the immediate vicinity of the site and in addition I consider that views to the windfarm would be intermittent. The turbines would be visible in the changing views as one travels through the area. In the same manner as the existing turbines are part of the landscape character, this feature would be reinforced but there is in my opinion no evidence to suggest that they would be unacceptable in landscape and visual terms.
- 8.5.7. In terms of the wider landscape context and views to the proposed development it would be situated in the context of the existing Garranereagh turbines. Views to the proposed wind energy development would position the development in the wider landscape setting and in my opinion it would not be dominant as shown on the images. The wider area includes permitted windfarms notably at Carrigarierk and Shehy More and there will be inter-visibility between these sites. The scale of all of the individual wind farms is relatively small e.g. the proposed Shehy More would have 12 turbines and the sites are all separated from each other by distances of 10km or more typically.



- 8.5.8. Regarding the distant scenic views from which the windfarm would be visible, which are identified in the EIS I refer the Board to the description of viewpoints VRP12 and VRP15 on pages 176 and 177 of the EIS. I agree with the conclusion that the overall magnitude of visual impact would be low. There would not in my opinion be any significant adverse visual impacts arising from the proposed development when considered in conjunction with the other planned and existing windfarms within 20km of the site.
- 8.5.9. The other relevant cumulative landscape and visual impact relates to the Barnadivane substation proposal, which will be seen together with the proposed turbines in views from the south including from some residential property but will not be visible from the scenic route to the north-west due to its low height and the topography. This is a large development in terms of the extent of the site and the ground contouring required and there will be clear views to the development including from the local road and other lands to the proposed development. There will be a permanent landscape change and the visual impact will be adversely altered even after mitigation as the existing open view across the fields will be interrupted and (for a temporary period) the overtly industrial character of the site will be dominant. This would be described as a permanent landscape impact, but after mitigation would not be described as a negative visual impact.
- 8.5.10. I have referred in the concurrent report to the acceptability in principle of the proposed approach to screening the substation development. The assessment of the cumulative impacts of the proposed 6 no. turbines, existing 4 no. turbines, the proposed Barnadivane substation have all been considered from the outset in the applicant's submissions. The efforts have concentrated, correctly in my opinion, on the assessment of the existing and proposed turbines. The cumulative landscape and visual impacts of the substation and the turbines can be determined from the images and description of viewpoint 11 and the significance of visual impact is determined to be 'moderate', which is relatively high.
- 8.5.11. Individual observations to the planning authority and Board refer to particular houses having clear views to one or more turbines as well as existing development such as pole sets. It is clear that it would be a consequence of the proposed development that particular views from a number of houses would include turbines and / the substation and the ancillary development. The EIS accordingly focuses on the views

in the immediate vicinity of the proposed development. Whether a particular occupant perceives this altered view to be negative may depend on whether or not they are a benefiting landowner and no doubt there will be residents who consider that their residential amenity would be significantly and adversely affected. Having regard to the character and designation of this landscape I do not consider that the magnitude of such impacts would warrant a refusal of permission or omission of any particular turbine or element of the overall development.

8.5.12. In terms of cumulative visual impacts I note in particular the proximity of houses to the substation (as close as 250m) which together with the proposed turbines would give rise to additional visual impact, which due to the nature of the substation prior to mitigation by landscaping would be described as being out of character with the rural area. It is noted however, that in the main any such cumulative effects, which would be perceived as deriving from an inherently industrial form of development would relate to the substation, which in itself is partly an indirect effect of the proposed development. The other permitted development in the immediate area would not give rise to landscape and visual impacts except in terms of the wider landscape, which are considered acceptable. After mitigation by landscaping of the substation site, I consider that the combined development would be acceptable and would not materially detract from the views from residential receptors or scenic routes. I disagree that the different sized turbines between the Garranereagh and Barnadivane windfarms would constitute a dis-jointed or visually discordant arrangement and in this regard I note that in many of the near views not all of the turbines would be seen at any time.

8.5.13. In the wider context while there would be some level of inter-visibility there would also be mitigation due to distance and due to the separation between the different windfarms. Thus while some of the third parties comment on adverse impacts on the Lee Valley and other places including Inchigeelagh, I would not conclude taking into account the relatively small scale and the separation between the individual energy proposals that there would be significant cumulative impacts.

8.5.14. I consider that the Board should conclude that the proposed development would not materially contravene the policies relating to scenic views and landscapes. I also conclude that the development is acceptable in terms of direct, indirect and cumulative landscape and visual impacts.

## 8.6. Material Assets

### Cultural heritage

- 8.6.1. The archaeological impact assessment presented is based on a desktop and field surveys. The cultural heritage assets within the study area (276 hectares) for the purposes of the EIS contains two recorded archaeological monuments, a ringfort and an enclosure. No predicted direct impacts are identified. As part of the construction phase mitigation 100m exclusion zones are recommended around the known monuments.
- 8.6.2. The EIS describes the fact that the layout of all of the components of the wind farm have been designed to minimise impacts on known archaeological sites. In view of the scale of the site there is always potential that previously unidentified archaeological monuments or artefacts would be discovered during the course of construction. Such provisions could arise in relation to the grid connection and other infrastructure. The grid connection has already been assessed under a separate consent. Use of existing tracks where possible minimises potential archaeological impact but the development will involve construction of significant lengths of 5m wide access tracks as well as road improvements, which may uncover features of interest and give rise to a requirement for mitigation by excavation and recording. Mitigation presented in the EIS includes the requirement for stopping works if necessary.
- 8.6.3. The assessment undertaken is comprehensive and includes a description of the likely visibility of the proposed turbines from the sites. There are likely to be indirect effects on the ringfort as blades of one turbine over 280m away are likely to be visible. The wider area within 2km of the site but outside the study area contains additional monuments the views from which is likely to include 5-6 turbines in relation to which no mitigation can be secured. I agree with the conclusion of the EIS that the distance minimises the visual impact.
- 8.6.4. Regarding the recently removed hedgerow which was to have been subject to archaeological monitoring, this action was not undertaken as part of the proposed development and is not relevant to the cultural heritage assessment.
- 8.6.5. Regarding architectural heritage there are no protected structures or NIAH listed structures within the study area and no structures of architectural heritage interest were discovered during field work.

8.6.6. I conclude based on primarily on the EIS that the development following mitigation would be likely to have low residual impacts on the cultural heritage resources of the area.

#### **Land use, tourism and recreation**

8.6.7. The dominant land use in the area is defined by the presence of pasture signifying the importance of agriculture. While there is reference in observations to potential effects on horses and other animals as a result of noise I am not convinced that this is demonstrated to comprise a likely significant effect on agricultural activities in the area. I note the positive economic effects which will benefit local farmers and others.

8.6.8. In my opinion having regard to the submissions and the EIS and my inspection, the actual material assets in this area are not particularly defined by tourism and recreation although such are the focus of the third party comments. I note the presence of some signposted routes and a community resource based around recreational walking and related pursuits. The applicant's submissions refer to the maintenance of access in the wind energy proposals and indicates that this approach will be pursued in this case. The impact on recreation and tourist amenity is not likely to be significant in my opinion as there is limited developed resources. I note that the third parties state that the resources have not been identified due to inadequate surveys and they point to a shooting club for instance. Taking in its totality I consider that there is a relatively low level of recreational use in the area. The use of windfarm roads may open up access but in the context of a quiet rural road network it would not be of particular value in my opinion. The existence of the wind farm could discourage interest parties from developing walking, recreation and tourism in this area and in this manner the value of material assets would be frozen.

8.6.9. On balance I agree with the applicant's submissions that there is no requirement for mitigation as a result of impacts on land use, recreation and tourism, as it is reasonable to conclude that the impacts would not be negative.

#### **Property Valuations**

8.6.10. It is a major concern of persons opposing the development that there will be a decline in property values, which matter appears to be focused on houses rather than on land values. In other sections of this report I have commented upon how the development would not give rise to unacceptable impacts on the residential

amenities of this area including by way of noise, shadow flicker and visual impacts and in this context I conclude that it is reasonable to infer that material assets in the form of houses would not be significantly adversely affected.

- 8.6.11. I note the considerable comment on the file relating to this matter, the submission of various reports and valuations and the advice that the Board should obtain specialist independent expertise on this matter. I do not consider that there are particular issues arising in this case which would warrant engagement of specialist expertise. The types of issues arising in this respect are common to many of the cases which the Board considers and the issues are familiar.

### **Roads and Traffic**

- 8.6.12. The EIS includes the haul route from the N22 to the north of the wider area through which large loads would be transported. There is a high level of detail of the likely traffic movements involved including in relation to general construction deliveries in the peak construction phase, the requirement for extended articulated trucks for transport of the turbine nacells, blades and towers and the junctions along the route. Regarding the movement of long vehicles details are provided of the works at junctions. The requirement for a 150m road, which has been authorised under a separate application also refers.
- 8.6.13. Regarding the peak impact on the local road network, the period of pouring of concrete foundations is identified as having most impact on surrounding road networks, including a 55% increase on a local road. Traffic management measures which are addressed at a preliminary level in the EIS can be further agreed to ensure appropriate mitigation.
- 8.6.14. Having regard to the above and taking into account the mitigation measures the residual effects would be slight at most, except in the short period when foundations are being poured when the residual impacts are described as moderate.

### **Telecommunications.**

- 8.6.15. In general, there is unlikely to be significant interference with telecommunications signals and such interference can be mitigated in accordance with the WEGs.
- 8.6.16. An observer refers to ongoing interference with a wire-free calving system, which in the opinion of the technician is due to the interference with the existing wind energy

development. Installation of a wired system will be costly and troublesome but may be required it is stated. In effect the observation sets out the required mitigation and the applicant appears not unwilling to remedy any interference.

- 8.6.17. Subject to mitigation as set out above, the impact on material assets related to telecommunications can be satisfactorily mitigated and no significant residual impact is likely.

## 8.7. Soils and Geology

- 8.7.1. Having regard to the geology of the area there is no significant risk related to peat or slope stability. The likely risks which would be encountered as a result of the proposed development involve increased erosion of soil, with resulting potential for sedimentation and to risks related to the borrow pit. The mitigation measures to which the applicant has committed relate to timing and manner of excavation, location of stockpiling and reinstatement techniques. Such construction techniques are readily capable of implementation and are set out in sufficient detail in the EIS and additional submissions. The impact on soils and geology would not be significant having regard to the small area of the borrow pit and the measures on the overall site to excavate, store and reinstate soils. For the purposes of environmental impact assessment including the possible indirect effects, I consider that the mitigation set out in the EIS would result in acceptable residual impacts.

## 8.8. Water

- 8.8.1. Related to the above is the potential for impacts on surface water and groundwater. The EIS identifies potential impacts on groundwater as including localised dewatering as a result of construction of additional drainage channels, increased vulnerability of aquifer due to removal of subsoil and rock and potential for chemical pollution as a result of leakage and run-off. Some of these impacts could arise in the operational period in addition.
- 8.8.2. The potential for surface water impacts on the catchment of the River Cumber and the Bride refers. Both are tributaries of the Lee. Surface water quality protection measures are related to soil and sub soil handling as well as to good practice measures to ensure risk of spillages is minimised and proper separation of working

areas from surface waters are in place. An increase in run-off in the order of 1.3% of the catchment area is predicted.

- 8.8.3. The applicant's proposals include a range of measures to mitigate the potential effects. Mitigation measures for hydrogeology, hydrology and water quality are set out and include development of detailed CEMP, measures related to avoidance of spillage and contamination reaching the water table, measures to reduce run-off and sedimentation of water courses, to restore the borrow pit and a suite of general good practice construction phase measures including use of soil bunding and silt fences. Regarding the knowledge of baseline conditions which is queried by the third parties including in relation to rainfall and the design of drainage measures, I consider that it is sufficient. I refer to section 7 of the EIS which presents data based on high quality publically available information, including OPW and WFD sourced information. The applicant's submission also demonstrate a high level of knowledge of the local drainage patterns.
- 8.8.4. Regarding the protection of groundwater / surface water one of the issues raised by an appellant concerns leachate of  $\text{CaCO}_3$  and other mineral from the bases of turbines. Such measures are stated to be deemed necessary in order to protect the River Bride, River Cumber and associated wetlands. I accept that the handling of wet concrete could give rise to water quality concerns, but is not proposed at this site in locations within or close to watercourses. I do not consider that the risk which is stated to be posed as a result of concrete being in situ is significant and having regard to the separation between the location of the works and the natural watercourses I consider that there are no particular circumstances in this case to warrant further investigation of this matter.
- 8.8.5. The applicant's proposals also referred to water quality monitoring and the location of monitoring locations are identified as part of the outline CEMP. Included also are proposals relating to emergency silt control and spillage response. Operational phases are included in the water quality monitoring plan.
- 8.8.6. Regarding the disposal of liquid wastes I agree with the submission of the applicant that this matter is adequately considered in Section 2 of the EIS, which refers to waste disposal and the preparation of method statements and safe disposal for all stages of the development from construction to decommissioning.

8.8.7. Subject to the above and having regard to the submissions on file, it may be concluded that the measures proposed will avoid significant impacts on groundwater and surface water bodies in the construction and operation phases.

## 8.9. Flora and fauna

8.9.1. The dominant habitat type in the study area comprises habitats which would be deemed to be of local value only including grassland, boundary hedgerows, wet grassland and scrub and woodland plantation. Surveys undertaken for the purposes of the EIS including field study and research of data sources did not reveal any species of flora or fauna which would be described as rare or protected. The development, while extensive in terms of land cover will not therefore result in significant adverse direct impacts.

8.9.2. Third party observations have identified a number of areas of study of baseline conditions, which they consider to be deficient. Third parties refer for example to bats in the attics of their own houses, which it is stated are not addressed in the EIS and that the bat survey deficiency would warrant a review of any decision to grant permission. Regarding the applicant's knowledge of bat roosts I note that this matter was addressed to the satisfaction of the Council's Heritage Officer. Field surveys undertaken confirm the presence of six bat species and the applicant acknowledges that others are expected to occur on occasion. Confirmed and potential commuting routes are demonstrated. Most bat activity was restricted to the area around T6. The EIS is based on survey as well as information on all known bat sites as identified by BCI, which includes 28 bat roosts within 10 km of the proposed windfarm the location of which is described as sensitive and for that reason data is not provided. I consider that this is a reasonable approach. Further, I have no reason to doubt the expertise or methodology of persons involved in the preparation of the EIS and consider that the statements made are credible.

8.9.3. The removal of a hedgerow in recent times as part of a land alteration project is presented by objectors as something which has adversely impacted flightpaths for bats. The response to the appeal presented accepts that the removal of these hedgerows since preparation of the EIS and response to further information does constitute habitat loss but that the findings of the impacts on bats are not altered as the habitat loss occurred outside the footprint of the proposed development. The



calculations which are presented in the application submissions in relation to vegetation clearance and replanting accordingly are not altered. In any event I note the applicant's proposal to mitigate hedgerow removal through installation of bat boxes and planting at appropriate locations. The proposal is to replant 1.5 times the amount of vegetation which would be lost.

- 8.9.4. Furthermore, in relation to the potential impact on bats I note that the applicant has responded to objectors concerns relating to potential collision studies including on the basis that there is no evidence of this matter being of significance in this country. Nevertheless, in accordance with international guidance, it is proposed to maintain clear areas around turbines to minimise potential for bat collision and to undertake monitoring of bat collisions.
- 8.9.5. Having regard to the various arguments presented, I consider that the development is acceptable and would not be likely to result in significant adverse impact on bats in the area. I also consider that there is sufficient information available based on the surveys undertaken.
- 8.9.6. Regarding the information presented by the applicant on birds, which is also deemed by third parties to be deficient I note that breeding bird surveys were conducted in June and July 2014 and Vantage Point surveys in the winter of 2013-2014 from two points for 36 hours. Furthermore all relevant data for a 10 km grid square was assessed for the purposes of preparing the EIS.
- 8.9.7. The third parties (which include an ornithologist resident in the area) make various detailed comments in relation to the bird species which visit the area and on the basis of their own knowledge the baseline data is considered to be inadequate. I respond below to what I consider to be some of the more significant outstanding issues.
- 8.9.8. Regarding the presence of White Tailed Sea Eagle, this has been seen in the area according to third parties and is stated to have been inadequately considered. This is a highly mobile species particularly when young and is likely to be found from time to time throughout the south-west of the country. Regarding the sourcing of information I note that the applicant has following consultation with the relevant expert in the NPWS and in accordance with the Scottish Natural Heritage guidance carried out a winter bird vantage point survey. The applicant consulted also with the relevant

official in the local authority. Regarding the WTSE in particular the proposed development site lacks suitable breeding territory and nesting habitat according to the first party submissions, which note the absence of large mature trees. I consider that the statement that the applicant made every effort to obtain information on WTSE and other birds of breeding conservation should be accepted. None of the submissions by prescribed bodies or officials of the planning authority present information to the contrary. I consider that it is not likely that the proposed development would be in conflict with the species in view of its rarity in the area.

- 8.9.9. There are comments made in relation to other bird species including Woodcock and Grasshopper Warbler. These were not identified during survey and are not known from the datasets according to the applicant. The applicant however acknowledges that the site has some habitat which can be used by Snipe and the species are likely to use the site from site to site and indeed were recorded in surveys. Kestrel are also known as indicated in the response to further information. The same would apply to other birds. The impact on Meadow Pipit was raised in an appeal also. The species were recorded in the winter VP survey and also on breeding bird transects. The applicant's submission is that the species is considered (along with other passerine species) not to be especially susceptible to impacts from windfarms according to Scottish National Heritage guidance.
- 8.9.10. Obviously the experience of full-time residents in an area will provide different opportunities to witness birds who may be present for short times only. However, it is not in my opinion necessary or likely as the basis for an EIS survey that all birds in an area be identified. I consider that the surveys are undertaken over two seasons and included vantage point surveys are acceptable. I also note that the third party objections are incorrect in stating that certain species were not identified, when in fact they are listed in the EIS or supplementary submissions, which are also relevant for the undertaking of EIA. In terms of the adequacy of the surveys presented I consider that they can be relied upon for the purposes of assessment of the possible impacts of the proposed development on birds in the area.
- 8.9.11. Regarding the impact of the proposed development which is based on the Percival wind farm and bird impact assessment, I consider that it reasonably concludes that in the context of relatively low levels of activity on the site and the presence of some

(although not extensive) suitable habitat the sensitivity of birds to adverse impact as a result of the development is low.

8.9.12. Regarding the survey for terrestrial habitat, which an appellant states is deficient I accept the applicant's statements regarding the adequacy of the surveys and expert input.

8.9.13. I consider that the potential for air quality impacts on flora and fauna can be discounted. Potential impacts on ecology during construction include the sedimentation and other water quality related pollutants. A tributary of the River Bride adjoins the southern site boundary as is clearly recorded in Chapter 7. The proposal and the associated construction measures include that all surface water to be discharged from the site will pass through soakways or vegetation filters and that there will be considerable separation distance from the nearest natural watercourses. The site is connected also to the Carrigadrohid reservoir (the Lee) by way of the Cummer. The watercourses downstream of the site are not known to contain populations of freshwater pearl mussels. Subject to implementation of best practice measures in relation to water quality no significant adverse impacts on aquatic species or on those who rely on such species for feeding would be likely. I will address this matter further in the AA section below.

8.9.14. Chapter 5 of the EIS addresses the matter of potential impacts arising from invasive species. No invasive species were identified within the site boundary and species present outside of the site are Japanese Knotweed, which is outside of the study area. Further to the surveys the developer will implement the relevant guidance on management of invasive species and will undertake post-construction monitoring as an additional measure.

8.9.15. Having regard to the contents of the EIS and other information presented by the applicant I am satisfied that it may be concluded that there will be negligible impact on the receiving environment in terms of impacts on flora and fauna.

## 8.10. Alternatives

8.10.1. Regarding alternatives the selection of the site was related to the previous permission for a wind energy proposal at the site. Notwithstanding that permission has now lapsed, I consider that the lack of consideration by the applicant of

alternative sites is reasonable in the context of the strong policy support for the wider area. On the matter of alternatives considered the EIS advises on the alternative layouts and the constraint assessment which lead to the reduction in proposed turbine numbers from 8 to 6. A 'do-nothing' option is mentioned.

8.10.2. In general as demonstrated in case law the requirement to consider alternatives does not involve a requirement to undertake an EIA of the alternatives considered, only to present the main alternatives which were considered. In my opinion that is achieved. I note in addition that there is some mention in the applicant's submissions and in the third party objections to the visual impact of the lower turbines compared with the higher structures proposed. There are also comparisons between the environmental impacts of the previously permitted scheme and the current proposal. It is not relevant that the Board undertake a detailed comparative assessment of these options, rather it is appropriate that the Board consider the development presented.

8.10.3. Regarding the alternative means of providing renewable energy as suggested by an observer, there is no obligation on the applicant to present such options in the EIS where these options were not considered.

8.10.4. I consider that the main alternatives studied by the developer and the reason for this choice are adequately described in the EIS.

## 8.11. Interactions

8.11.1. This matter is subject of Section 15 of the EIS. I consider that the following interactions are most noteworthy:

- Noise and vibration and human beings
- Flora and fauna, water and soils and geology
- Landscape and human beings
- Material assets and human beings.

8.11.2. I consider that the interactions and inter-relationships have been adequately assessed in the applicant's submissions and in this report and that suitable mitigation has been incorporated.

## 8.12. Cumulative impacts.

- 8.12.1. The third parties refer to the failure to consider the cumulative impacts of the proposed windfarm, the substation, the 150m road, the Shehy More and Carrigarierk developments in particular. There is an emphasis in this regard on the impacts on the landscape, noise, surface water and birds.
- 8.12.2. The consideration of cumulative impacts is a theme throughout the original EIS and has been elaborated upon in the various submissions from the applicant. I consider that the most useful and concise presentation of the cumulative impacts is that which is dated January 2016 and submitted to the Board in response to the appeal, which considers the worst case scenario of simultaneous construction of the proposed windfarm, substation and private roadway. The submissions include consideration of potential cumulative impacts of the windfarm in combination with a grid connection and accommodation works for turbine delivery route association with Shehy More (PL04.243486), which information was not available at the time of making of the original application for Barnadivane. The existing windfarm development has been assessed by the applicant in particular in relation to cumulative visual impacts and noise and my report above refers. I have had regard to all of the available information as the basis for my assessment and conclusions on cumulative impacts, which are as outlined below.
- 8.12.3. It has been discussed in the Noise section above that the operational noise impacts when considered on a cumulative basis would not be significant. Regarding the potential for concurrent construction of the private roadway, the 6 no. proposed turbines and the substation I note that due to the separation distances between these structures and the mitigation measures which are proposed in relation to the works at each particular location, no significant cumulative noise impacts would be anticipated in the construction phase. There would thus be no significant cumulative noise impacts which would be likely to have any additional effect on ecology or human beings.
- 8.12.4. Regarding the cumulative visual impacts of the development the existing wind farms in the area are relevant for consideration as is the proposed substation. The existing 4 no. Garranereagh turbines are subject of detailed consideration in the landscape and visual impact assessment as part of the landscape context. The consideration

of cumulative impacts concerns primarily the proposed substation, which I have addressed in both reports and which I consider can be mitigated through the screening effect of the proposed planting. The substation will be viewed in the context of the proposed and existing turbines and will give rise to additional impacts but subject to mitigation I concur with the applicant's assessment that the cumulative visual impacts would not be significant. In terms of the proposed turbines and the potential for cumulative effects, distant views will be most impacted and the presence of wind farms as a feature in the landscape would be emphasised, although at some locations each separate wind farm will be independently viewed. There are a number of permitted and existing wind farm developments in the wider area including to the west and south. The permitted and proposed wind turbines and the associated infrastructure in the wider area has been commented upon in my assessment above whereby I concluded that due to their scale in terms of turbine numbers and the separation between the different developments, significant adverse cumulative landscape and visual impacts would not result.

- 8.12.5. The proposed private roadway, the permitted grid connection to Shehy More, the works proposed in the construction of the proposed 6 turbines and other developments proposed in the area have all been assessed (including in decisions of the Board) in terms of their potential impacts on surface water flow and quality. All are subject of CEMPs. Water crossings where they occur would be subject to suitable designed mitigation measures. I accept that in the context of the receiving environment and its characteristics and species and having regard to the details of the proposed development, there would not be any significant cumulative impacts on the surface water flow, on water quality or on related ecology.
- 8.12.6. Regarding impacts on ecology in general as a result of the concurrent construction of the substation, roadway and the windfarms, the cumulative loss of habitat would result in less places of refuge from noise and disturbance for the duration, which constitutes a temporary and slight negative impact on birds and mammals. Taking into account the mitigation measures to protect bats and birdlife and the distance from designated sites and the nature of the habitats which would be affected, I consider that the cumulative impacts on ecology would be deemed to be acceptable and in particular in relation to Natura sites and qualifying interests is considered to be insignificant.

- 8.12.7. I consider that there are no potential cumulative impacts related to slope failure and soils and geology taking into account the proposed substation, road and wind turbines.
- 8.12.8. I consider that there is potential for cumulative effects on human beings as a result of road traffic related disturbance in the event of the concurrent construction of the grid connection and the private roadway, substation and the wind turbines. The effects would be short-term and the increased traffic levels would not be significant compared with the construction of the wind farm in itself and the impact would be localised and not of significance in terms of the region traffic flow.
- 8.12.9. Potential cumulative socio-economic impacts are described by the first party as positive. I consider that the presence of the additional wind energy development in this area including the substation will benefit individual landowners and give rise to some employment but also may deter investment in other sectors such as recreation and on balance I consider that the cumulative socio-economic impacts would be best considered to be neutral.
- 8.12.10. I consider that it can be concluded that the cumulative effects of the developments would be positive in terms of operation phase Air and Climate impacts.
- 8.12.11. In relation to the Lee Valley , due to topography and distance in particular I consider that there is no likelihood of significant additional impacts relating to landscape / visual impacts or ecology including birds and that these matters have been properly considered in the applicant's proposals as well as under previous applications.
- 8.12.12. In relation to any pending impacts including from the proposed substation near Dunmanway these would fall to consideration under any future applications or appeals.
- 8.12.13. In conclusion having regard to the cumulative impacts arising from planned and existing developments and in particular from the Shehy More grid connection, the 150m roadway, the proposed wind turbines and the substation, there would be no potential for significant adverse cumulative impacts, which would warrant to be addressed by condition.

### 8.13. Other issues

- 8.13.1. Regarding the matter of project splitting I note the appellant submissions relating to cumulative assessment being one part of the EIA process but not a replacement or substitute for an EIS of the single development. The applicant also notes that the project splitting issues are complicated by the assertion that the substation is intended to serve windfarms in the 25km radius.
- 8.13.2. In my opinion there is no attempt to avoid EIA and no issue of 'project splitting'. In this regard I note and concur with the applicant's statements that the individual and cumulative assessment of impacts has taken place, that there is no requirement for EIA to be undertaken in relation to the substation and no reason for it to be incorporated into the project as part of the current application / appeal for the wind turbines. The concurrent assessment of the two cases by the Board is appropriate and would ensure avoidance of gaps in the assessment process.

## 9.0 APPROPRIATE ASSESSMENT

- 9.1.1. The application is accompanied by a Screening for Appropriate Assessment. The screening assessment concludes that having regard to the conservation objectives of the European sites the proposed development would not be likely to have significant effects on the European sites.
- 9.1.2. I consider it appropriate in considering the requirement for AA that the Board have regard to the recent legal decisions, including that of People over Wind v An Bord Pleanála. In relation to the items, which might be left to be decided between the planning authority and the developer including drainage details, the question of whether or not such details can be agreed post-consent is one which falls to be considered depending on the context and the sensitivity of the receptors.

### **European sites potentially impacted by the proposed development**

- 9.1.3. There are no Natura 2000 sites in the immediate vicinity of the proposed development site (PDS). Natura 2000 sites within 15km are The Gearagh SAC and Gearagh SPA, Bandon River SAC and Mullaghanish to Musheramore Mountains SPA. These sites are potentially impacted having regard to the conservation objectives and the nature of the development.



- 9.1.4. The separation distances from the PDS to the Natura sites is 6.7km and 6.8km in the case of the Gearagh SAC / SPA and 10.8 km to the southwest in the case of the Bandon River SAC. The Mullaghanish to Musheramore Mountains SPA is within the 15km radius of the site.
- 9.1.5. The receiving environment is connected to the Lee (which contains The Gearagh sites) by the Bride and the Cummer rivers. The northern end of the PDS drains by way of the Cummer River to the Lee. A tributary of the Bride is south of the PDS.
- 9.1.6. I am satisfied that there is no other Natura site which could be affected by the proposed development.

### **Conservation objectives**

#### Bandon River SAC (site code 002171)

- 9.1.7. The conservation objectives are to maintain or restore the favourable conservation condition of the Annex I habitats and / or the Annex II species for which the cSAC has been selected. The qualifying interests are:

- Floating River Vegetation
- Alluvial Forests
- Freshwater Pearl Mussel
- Brook Lamprey.

#### The Gearagh SAC (site code 000108)

- 9.1.8. There are detailed site specific conservation objectives for this site, which were published on 15<sup>th</sup> September 2016. The qualifying interests are:

- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260]
- Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation [3270]
- Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]
- Lutra lutra (Otter) [1355]

- 9.1.9. The detailed conservation objectives aim to define favourable conservation condition for a particular habitat or species at the site. For each of the qualifying interests the conservation objective is to maintain the favourable conservation condition of the habitat or species, which is defined by a list of attributes and targets.
- 9.1.10. The site is of most importance for its extensive alluvial woodlands. Otter occur throughout the site. The Gearagh also supports part of an important wintering bird population including Whopper Swans, Teal, Mallard, Tufted Duck, Golden Plover, Dunlin, Mute Swans, which appear in late summer and Greylag Goose and Great Crested Grebe.
- 9.1.11. The targets and attributes are to be found in the relevant NPWS publication. For otter one of the attributes is the extent of freshwater (river) habitat. The target is that there would be no significant decline in this available habitat the length of which is mapped and calculated as 10.6km. The availability of food supply in terms of biomass, the prevention of barriers to movement and other targets are included.

The Gearagh SPA (site code 004109)

- 9.1.12. The birds listed as special conservation interests are:

- Teal
- Wigeon
- Mallard
- Coot

- 9.1.13. The conservation objective is also to acknowledge the importance of Ireland's wetlands to wintering waterbirds and the second conservation objective is:

- To maintain or restore the favourable conservation condition of the wetland habitat at The Gearagh SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Mullaghanish to Musheramore Mountains SPA (Site code 004162)

- 9.1.14. The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as special conservation interests for this SPA:

- Hen Harrier.

## **Potential for likely significant effects**

9.1.15. Potential impacts on European sites that may arise are indirect effects as a result of the development:

- Siltation or pollution of watercourses during construction and operation of the wind farm in particular due to spillages, soil handling and storage and from increased surface water runoff leading to pollution of watercourses draining to the Gearagh SAC and / or the Bandon SAC resulting in potential direct effects in terms of the loss or degradation of habitats and potential indirect effects in terms of effects on species which use European sites.
- Disturbance / displacement / collision impacts on birds from the Gearagh SPA and the Mullaghanish to Musheramore Mountains SPA during construction and when operational.
- In combination effects related to the above from construction and operation of the development and other significant developments in the zone of influence.

## **Evaluation of potential effects**

9.1.16. I consider that the potential effects for each of the European sites is as follows.

### Bandon River SAC (site code 002171)

9.1.17. There is no significant watercourse within the PDS or in the immediate vicinity. The site is elevated and drains towards the Lee catchment. As such there is no hydrological connectivity between the site and the Bandon SAC.

9.1.18. In view of the above, the proposed development is not likely to have significant effects on the Bandon River SAC in light of the conservation objectives of the site.

### The Gearagh SAC (site code 000108)

9.1.19. The watercourses draining the PDS ultimately connect to the Lee at a point downstream of the Gearagh SAC / SPA. As such any sedimentation or other pollutants which could enter the water course would flow away from the designated habitats and the habitats on which the designated species are reliant. The point at which the Cummer reaches the Carrigadrohid reservoir (the impounded Lee) is 11.5km downstream of the proposed development site. There is thus very limited

likelihood of significant effects. However, there is potential that adverse water quality impacts could affect mobile species including otter.

9.1.20. In terms of proximity to watercourses T1 and T2 are about 600m from the rising of the Cummer River and T4 and T2 are closer, 111m in the case of T4. T6 is shown as being over 200m from the Bride. These separation distances are greatly in excess of any required buffers which would be required to ensure water quality protection including in the construction phase, which I consider is the main risk period, notwithstanding some risk in the operational period from increased surface water runoff. For these reasons it is considered highly unlikely that any silt-laden runoff or pollutants that may arise during the construction or operation of the wind farm would enter the watercourses draining to the Lee or would come into contact with mobile species such as otter or adversely affect the foodstuffs on which otter relies.

9.1.21. I am satisfied that the proposed development is not likely to have significant effects on The Gearagh SAC in light of the specific conservation objectives of the site.

The Gearagh SPA (site code 004109)

9.1.22. The SPA is part of an impounded section of the Lee. It is a shallow lake, which is fringed by wet woodland, scrub and grassland that is prone to flooding and the site supports important populations of species of national importance (Mute Swan, Wigeon, Teal, Northern Shoveler, Coot, Golden Plover) and regular visitors (Whooper Swan, Tufted Duck, Lapwing).

9.1.23. The conclusions above in relation to the potential for significant effects arising from silt pollution or other pollution entering watercourses apply also to the birds and habitats of the SPA. I consider that such effects can be discounted.

9.1.24. The Winter Birds surveys concluded that there is low level usage of the PDS by wintering birds, which conclusion I accept. Therefore, I consider that there is no aspect of the proposed development which would be likely to give rise to significant effects on the special conservation interests of this Natura site as a result of disturbance or displacement impacts or indeed collision.

9.1.25. In view of the above, the proposed development is not likely to have significant effects on The Gearagh SPA in light of the conservation objectives of the site.

Mullaghanish to Musheramore Mountains SPA (Site code 004162)

9.1.26. The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as special conservation interests for this SPA:

- Hen Harrier.

9.1.27. There is no reference in the bird surveys to use of this site by Hen Harrier, or in the third party submission. The grassland habitat on site would not be preferred habitat for the species. There is no likelihood of significant interference in the construction period with nesting or foraging habitats. In the operational period the only potential risk would relate to collision or displacement as the species to avoid the lands in the immediate vicinity of turbines. Given the results of the survey and on the basis of very occasional presence of the species which may from time to time overfly the area, these potential impacts can be eliminated. I conclude that there is no aspect of the proposed development, which would be likely to give rise to significant effects on the special conservation interests of this Natura site as a result of disturbance or displacement impacts or collision in view of the low level usage of the environs.

9.1.28. In view of the above, the proposed development is not likely to have significant effects on the Mullaghanish to Musheramore Mountains SPA (Site Code 004162) in light of the conservation objectives of the site.

#### In combination effects

9.1.29. As the proposed development would not give rise to direct or indirect effects on any Natura 2000 site, its effects in combination with other projects, including the existing turbines in the vicinity, the proposed access road and substation, or the proposed Carrigarierk or Shehy More developments and other developments would not be significant.

#### **Conclusion**

9.1.30. It is therefore reasonable to conclude on the basis of the information available, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on any European site, and in particular the SAC and SPA at the Gearagh (site codes 000108 and 004109) respectively, or the SPA at the Mullaghanish to Musheramore Mountains (site code 004162) or Bandon River SAC

(site code 002171) in view of those Sites' conservation objectives. An Appropriate Assessment is therefore not required.

## 10.0 Recommendation

I recommend that permission be granted for the reasons and considerations and subject to the conditions below.

## 11.0 Reasons and Considerations

Having regard to –

- (a) National policies to increase the proportion of energy that is generated from renewable sources including wind set out in the Renewable Energy Directive 2009/28/EC and the National Renewable Energy Action Plan which sets a target that 40% of the electricity generated in Ireland would be from renewable sources by 2020.
- (b) The provisions of the Cork County Development Plan 2014-2020, including objective ED-4 and ED 6-1 and the location of the site within an area where wind energy is acceptable in principle and the provisions to facilitate where practical and feasible infrastructure connections to wind farms and other renewable energy sources subject to normal planning considerations.
- (c) The planning history of the site and surrounding area.
- (d) The nature of the landscape and the absence of any specific conservation or amenity designation for the site and immediate environs.
- (e) The submissions on file.
- (f) The documentation submitted by the applicant including the appropriate assessment screening report;

### Environmental Impact Assessment

The Board considered the case concurrently with the appeal under PL04.238152 for a substation. The Board considered that there was no 'project splitting' in this case and no avoidance of any requirements under Environmental Impact Assessment. The Board noted that the concurrent consideration of the proposed substation and

the windfarm together planning history details of other developments related to renewable energy and / grid connection in the area ensured that all impacts including direct, indirect and cumulative impacts were comprehensively assessed for the purposes of Environmental Impact Assessment.

#### Appropriate Assessment

The Board noted that the proposed development is not directly connected with or necessary for the management of a European site.

In completing the screening for appropriate assessment, the Board accepted and adopted the screening assessment and conclusion carried out in the Inspector's report in respect of the identification of European sites which could potentially be affected and the identification and assessment of the potential likely significant effects of the proposed development, either individually or in combination with other plans or projects, on these European sites in view of the site's conservation objectives. The Board was satisfied that the proposed development, either individually or in combination with other plans or projects, would not be likely to have a significant effect on European sites Nos. 002171, 000108, 004109, 004162, or any other European site in view of the sites Conservation Objectives.

It is considered that, subject to compliance with conditions below, the proposed development would not seriously injure the residential amenities of the area or of property in the vicinity, would be acceptable in terms of visual amenity and traffic safety and would not be detrimental to other aspects of the environment. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

## 12.0 Conditions

1. The proposed development shall be carried out and completed in accordance with the plans and particulars of the application to the planning authority on 19/12/2014 as amended by the submissions received by the planning authority on 26/05/2015, 5/06/2015, 20/07/2015 and 10/09/2015 and the further details received by An Bord

Pleanála, 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 undertaker shall agree such details in writing with the planning authority prior to the commencement of development and the proposed development shall be carried out in accordance with the agreed particulars.

**Reason:** In the interest of clarity.

2. The period during which the development hereby permitted may be carried out shall be ten years from the date of this order.

**Reason:** To facilitate the completion of the development.

3. This permission shall be for a period of 25 years from the date of commissioning of the wind farm.

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

4. All mitigation measures identified in the Environmental Impact Statement as amended on 10/09/2015 and in the other particulars submitted on behalf of the applicant shall be implemented in full by the developer except as may otherwise be required in order to comply with the following conditions. The developer shall appoint a person with appropriate ecological and construction expertise as an environmental manager to ensure that the mitigation measures identified are implemented in full.

**Reason:** In the interest of clarity and to protect the environment.

5. The following shall apply to the development:

- (a) The permitted turbines shall have a maximum tip height of 131 metres.



Details of the turbine design, height and colour shall be submitted to, and agreed in writing with, the planning authority, prior to commencement of development.

(b) Cables from the turbine to the substation shall be run underground within the site.

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

(d) Transformers associated with each individual turbine and mast shall be located either within the turbine mast structure or at ground level beside the mast.

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

(f) The access tracks within the site shall be surfaced in suitable material, acceptable to the planning authority, and shall not be hard topped with tarmacadam or concrete.

(g) Roads, hard-standing areas and other hard-surfaced areas shall be completed to the written satisfaction of the planning authority within three months of the date of commissioning of the windfarm.

(h) Soil, rock and other materials excavated during construction shall not be left stockpiled on site following completion of works. Excavated areas including the borrow pits and areas of peat placement shall be appropriately restored within three months of the date of commissioning

of the wind farm, to details to be submitted to, and agreed in writing with, the planning authority.

**Reason:** In the interest of the amenities of the area.

6. Wind turbine noise arising from the proposed development, by itself or in combination with other existing or permitted wind energy development in the vicinity, shall not exceed the greater of:

5 dB(A) above background noise levels or

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

when measured externally at dwellings or other sensitive receptors. All of the noise mitigation measures set out in the submitted documentation shall be fully complied with.

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, including any mitigation measures such as the de-rating of particular turbines. 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.

7. The following shall apply to the development:

(a) The proposed development shall be fitted with appropriate equipment and software to suitably control shadow flicker at nearby dwellings, including control of turbine rotation, in accordance with details which shall be submitted to, and agreed in writing with, the planning authority prior to the commencement of development.

(b) Shadow flicker arising from the proposed development, by itself or in combination with other existing or permitted wind energy development in the vicinity, shall not exceed 30 hours per year or 30 minutes per day at existing or permitted dwellings or other sensitive receptors.

(c) A report shall be prepared by a suitably qualified person in accordance with the requirements of the planning authority, indicating compliance with the above shadow flicker requirements at dwellings. Within 12 months of commissioning of the proposed wind farm, this report shall be submitted to, and agreed in writing with, the planning authority. The developer shall outline proposed measures to address any recorded non-compliances, including control of turbine rotation. A similar report shall be provided by the developer to the planning authority at such time intervals as may be required by the authority.

**Reason:** In the interest of residential amenity.

8. 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 the commissioning of the turbines, the developer shall inform the planning authority and the Irish Aviation Authority of the co-ordinates of the as-constructed tip heights and co-ordinates of the

turbines and wind monitoring mast.

**Reason:** In the interest of air traffic safety.

9. Prior to the commencement of work the developer shall submit for the written agreement of the planning authority a detailed Construction and Environment Management Plan and an Environmental Emergency Response Plan for the proposed project.

This shall include details of construction practice for the development including hours of working, noise management measures and off-site disposal of waste. Surplus excavation material to be taken off site shall only be recovered or disposed of at an authorised site in accordance with the Waste Management Acts.

**Reason:** In the interests of residential amenity, public health and safety and the protection of the environment.

10. Site development and building works shall be carried out only between the hours of 08.00 to 19.00 Mondays to Fridays inclusive, between 08.00 to 14.00 on Saturdays and not at all on Sundays and public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.

**Reason:** In order to safeguard the amenities of property in the vicinity.

11. The following requirements relating to noise during construction shall be complied with in the development:

Noise monitoring locations and a schedule for the submission of noise monitoring results for the purposes of the construction phase of the proposed development shall be agreed in writing with the planning authority prior to the

commencement of any development on site.

Construction noise levels shall be in accordance with the limits set out in the TII document, 'Good Practice Guidelines for the Treatment of Noise during the Planning of National Road Schemes' (2014).

**Reason:** To protect the amenities of property in the vicinity of the site.

12. Prior to the commencement of any other development works on the application site, the developer shall have completed, to the written satisfaction of the planning authority, the upgrading works to the existing site access arrangements and the associated road improvement works along the public road.

The provision of the required upgrading of the site access arrangements and the associated road improvement works on the public road at the accesses shall be undertaken at the expense of the developer.

**Reason:** In the interest of proper planning and sustainable development and in the interest of pedestrian and road traffic safety.

13. Prior to commencement of development, details of the following shall be submitted to, and agreed in writing with, the planning authority:

(i) a condition survey of the roads and bridges along the haul routes to be carried out at the developer's expense by a suitably qualified person both before and after construction of the wind farm development. This survey shall include a schedule of required works to enable the haul routes to cater for construction-related traffic. The extent and scope of the survey and the schedule of works shall be agreed with the planning authority/authorities prior to commencement of development.

(ii) detailed arrangements whereby the rectification of any construction damage which arises shall be completed to the satisfaction of the planning authority/authorities.

(iii) detailed arrangements for temporary traffic arrangements/controls on roads.

(iv) a programme indicating the timescale within which it is intended to use each public route to facilitate construction of the development.

(b) All works arising from the aforementioned arrangements shall be completed at the developer's expense, within 12 months of the cessation of each road's use as a haul route for the proposed development.

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

**Reason:** To protect the public road network and to clarify the extent of the permission in the interest of traffic safety and orderly development.

14. 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 shall be removed and all decommissioned structures shall be removed, and foundations removed or covered with soil to facilitate re-vegetation, within three months of decommissioning.

**Reason:** To ensure satisfactory reinstatement of the site upon cessation of the

project.

15. Water supply and drainage arrangements including the disposal of surface water shall comply with the requirements of Irish Water and the local authority for such works in respect of both the construction and operation phases of the proposed development.

**Reason:** To ensure adequate servicing of the proposed development and prevent pollution.

16. Any over ground tanks containing liquid fuels shall be contained in waterproof bunded areas of sufficient volume to hold 110% of the value of the largest tank within the bund. All valves on the tank shall be contained within the bunded area. The bunded area shall be fitted with a locking penstock valve, which shall be opened only to discharge storm water to the interceptor. The developer shall ensure that this valve is locked at all times.

**Reason:** To protect the environment.

17. 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 relating to the proposed development.
- b. Employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.
- c. Delimit a buffer zone of 100m around each of the recorded monuments CO094-036 and CO083-078 in advance of construction

and shall implement the recommendations of the site archaeologist in this regard.

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 by record and protection of any archaeological remains that may exist within the site.

18. Prior to commencement of development, the developer shall agree a protocol for assessing any impact on radio or television or other telecommunications reception in the area. In the event of interference occurring, the developer shall remedy such interference according to a methodology to be agreed in writing with the planning authority, following consultation with other relevant authorities and prior to commissioning the turbines.

**Reason:** In the interest of residential amenity.

19. 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 which 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.

**Reason:** In the interest of traffic safety and the proper planning and sustainable development of the area.

20. 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 orderly development and visual amenity and to ensure satisfactory reinstatement of the site.

21. 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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Mairead Kenny

Senior Planning Inspector

18<sup>th</sup> January 2019