# An Bord Pleanála

# Inspector's Report

## Development

25 wind turbines, 4 borrow pits, a substation, a mini-substation, peat disposal areas, clear-cutting of conifer plantation, and associated site development works at Straboy, Meenalargan, Loughcrillen, Mulnamin Beg, Derk Beg and Derryloughan Townlands, Glenties, Co. Donegal.

## Planning Application

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| Planning Authority: | Donegal County Council |
| Planning Authority Register Reference: | 11/30127 |
| Applicant: | Straboy Wind Energy Limited |
| Type of Application: | Permission |
| Planning Authority Decision: | Grant |

## Planning Appeal

| | |
|---|---|
| Appellant(s): | Michael Quinn<br>Anne Marie McDermott<br>Fiona Hardy<br>Catherine Histon & Ezio Vaccari<br>Seamus Mac Goillabhuí<br>Liam Millar<br>Gweebarra Conservation Group<br>Michael McGeehan<br>Peadar Ó Baoill |

| | |
|---|---|
| | M.J. Cooke<br>Irish Peatland Conservation Council<br>Joseph & Declan Brennan<br>Damien McCallig<br>Golden Eagle Trust<br>Liam McLaughlin |
| Type of Appeal: | Third Party |
| Observer(s): | Alternatives to Pylons (ATP) & Coiste Timpeallacht Gaoth Dobhair<br>Breezy Kelly<br>Mary Brown<br>Rosaleen & Brian McElhinney<br>Imelda O'Donnell<br>Clodagh Duggan<br>Rian O'Donnell<br>Teresa Bonner<br>Maresa Campbell<br>Brian Campbell<br>Margaret Campbell<br>Danny Doherty & Rita Breslin<br>Glenties Tidy Town Committee<br>Ronan O'Donnell<br>Helen McNelis<br>Kevin McHugh<br>Cheryl McLoone<br>Siobhan Browne<br>Linda McGrath<br>Pat Cunningham<br>Breege McGrath<br>Peter & Christine Sharkey<br>Brenda McElhinney<br>Catherine Breslin & Caroline Boyle Carr<br>Brian & Margaret Gildea, Carol & Bella McGill<br>Breda Lawlor<br>Bernadette Donoghue<br>Angela McCahill<br>Pedro Soltani<br>Mary Kellie<br>Bernard Quinn |

Philomena Boyle
Louis & Joan Hanlon
Eli Gothill
Pat Browne
Maria Craig
Queen Mary University of London
Patrick & Janet McGill
Una Brennan
Vincent Breslin
Belina Boyle
Ernan O'Donnell
Kathleen Bonner, Brian & Breege McDevitt
Anne McLoone, John Malone, Edwina Sweeney
An Taisce
Alun Evans
Seamus & Máire Ní Fhioghaire
Cumann Iascairí Bhaile na Finne
Donna Ní Fhioghaire
Dominic Ó Baoill
Deborah Ní Fhioghaire
Margaret McCallig
Triona Soltani
The McGettigan Family
Glenties Wind Farm Information Group
Charles Swingler
C.R. Nethercoat & Others
Rosa Flannery
Patricia Sharkey
Councillor John Campbell
Councillor Seamus Ó Domhnaill
Joan O'Donnell
Felix Jackson
Denise Boyle

Date of Site Inspection: 2nd – 4th October, 2012

**Inspector:** **Kevin Moore**

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## 1.0 DESCRIPTION OF PROPOSED DEVELOPMENT

Overview

The nature and extent of the development detailed in the public notices submitted to Donegal County Council was described as follows:

"*Straboy Wind Energy Limited are applying to Donegal Co. Co. for permission for 25 no. wind turbines, of 64 metre hub height and with 71 metre rotor diameter, 4.0 metre wide trackways, four borrow pits, a substation, a mini-substation, peat disposal areas, clearcutting of conifer plantation and associated site development works at Straboy, Meenalargan, Loughcrillen, Mulnamin Beg, Derk Beg and Derryloughan Townlands, Glenties, Co. Donegal ...*"

The scheme would have an installed capacity of 50 Mw. It is submitted that the windfarm would be connected to the ESB grid via a 110kV line connection to the proposed 110kV switching station at Tievebrack 900 metres away from the site.

A series of access roads would be provided within the site, totalling a length of just over 11km.

An Environmental Impact Statement was submitted as part of the application. Additional details included an address list of landowners, a Certificate of Incorporation for Straboy Wind Energy Ltd., and a complete schedule of plans and other drawings. Furthermore, extracts from the Agreements for Lease giving landowner consent to make the application were submitted.

The site comprises an area of 474 hectares.

Details of the Scheme

Along with the erection of the turbine structures, the development would include the construction of site roads and hardstanding areas for each of the proposed 25 turbines. There would be an on-site electrical station that would be located on the lower slopes of the site at the south-east corner.

*Turbines*

There would be a total of 25 turbines, each comprising a 64m hub height and with a 71m rotor diameter. They would be a generic three blade type, with a tubular tower, 4.13m at the base, tapering to 2m at the nacelle. Each would be up to an overall height of 99.5m.

Specific details of the composition, delivery and construction of the turbines are provided in Section 3.4.2 of the EIS.

Start-up would be achieved at wind speeds of 2.5m/sec, with optimum power generation seen to be at approx. 12.5m/sec. The turbines would shut down at wind speeds greater than 28-34m/sec.

Each turbine would generate electricity power of 2,000 kW.

The turbines would be light grey in finish.

The turbines would be located at elevations of between approximately 192m OD to 301m OD.

*Grid Connection*

The project has a grid connection application for the ESB Networks Group Processing Approach Gate 3. The turbines would be interconnected by underground cable to the on-site substation. From the substation it would be connected by 308m underground and 677m overhead lines to the national grid at the proposed Tievebrack switching station.

The substation would comprise two single storey buildings consisting of a control room and fenced-in compound to house electrical equipment. This would be sited at a low part of the site near the R250 and would be surrounded by a 2m high security fence.

The applicant has stated that the Tievebrack switching station has a proposed capacity to connect a power output of 110 MW to the grid. It is further stated that the Board granted permission for a wind energy development with 30 MW and that, with the proposed development having a 50 MW generation capacity, this would leave 30 MW remaining.

*Roads*

Roads are generally intended to follow site contours to allow interception of surface water flows. Both conventional and floating road construction is intended. The latter is proposed to reduce the volume of disturbed peat where peat is at its deepest. The access tracks would be 4m in width and would be finished in a quarry dust locally sourced.

*Peat Extraction and Borrow Pits*

Excavated peat is proposed to be used to landscape road verges and turbine foundations and to restore areas of cutaway bog, as well as to restore on-site rock borrow pits.

Rock for the roads and hardstanding areas would be sourced from four on-site borrow pits and would be won using a rock breaker. Rock would be processed on site with a mobile crusher and screen.

The volumes of excavated peat are estimated as follows:

| | |
|---|---|
| Hardstandings | 22,330 cu.m |
| Proposed Roadways | 43,276 cu.m |
| Borrow pits/substations | 3,546 cu.m |
| | |
| Total | 69,152 cu.m |

*Construction Phasing*

It is proposed to construct the scheme over two phases. Phase 1 would consist of the construction of trackways, hardstanding and foundations. Phase 2 would consist of the cabling and substation construction and erection of turbines. The overall construction period would be 24 months.

*Employment*

The applicant submits the construction of the development will create 20 positions providing short term employment opportunities. At the operation stage, it is stated that the development will provide 8 full time jobs for maintenance and turbine servicing.

Decommissioning

At the decommissioning stage, it is proposed that the turbines and substations would be removed. The site would then be hydromulched without any additional soil cover. This layer would be at least 7cm thick and would consist of wood mulch combined with tackifier and fertilizer. It would also contain locally sourced seeds and cuttings from heather and grass.

## 2.0 SITE DETAILS

### 2.1 Site Inspection

I inspected the appeal site on 2nd – 4th October, 2012 and photographs taken on those dates are appended at the back of the report.

## 2.2 Site Location and Description

The site forms part of a mountain range which extends from Glenties to Fintown in south-west County Donegal. It lies on the slopes and ridges of Meenalargan Hill, Straboy Hill, Derkbeg Hill and Mulnamin Hill parallel between the Gweebarra and the Stracashel/Shallogan River valleys. This area forms part of the northern foothills of the Blue Stack Mountains. The site is located on an open, exposed area on the top and upper part of a mountain chain approximately 1.5km north of Glenties in County Denegal within the townlands of Loughcrillan, Meenalargan, Mulnamin Beg, Derk Beg, Derryloughan and Straboy. It is accessed from the R250 regional road and a minor local road.

The site is used at present for rough grazing, historically in parts for turf cutting and in the south east corner of the site and for a small area in the centre of the site for conifer plantation. Blanket bog and bedrock outcrop prevail within and across the site. Lough Nacroaghy is located in the centre of the site in the basin formed by Straboy Hill, Meenalagan Hill, Derkbeg Hill, and Mulnamin Hill. Improved grassland exists to the north of the lake where there are a number of derelict dwellings and associated structures. Coniferous forestry abuts the site to the north-west, north and east.

The overall land area associated with the development is some 474 hectares and is all in private ownership. It has a maximum elevation of 330m OD, reducing to 110m OD.

The mountain chain of which it forms a part runs parallel to the valleys of the Stracashel and Shallogan Rivers, which feed into the Owenea River.

## 3.0 DONEGAL COUNTY DEVELOPMENT PLAN 2012-2018

Wind Energy

The Plan states that an analysis of areas suitable for wind energy development within the county has been undertaken, having identified 'Areas Open to Consideration' and areas 'Not Favoured'. The 'Areas Open for Consideration' were identified having regard to a range of factors, including wind grid connections, natural heritage designations and landscape sensitivity, and road infrastructure. 'Not Favoured' areas include SAC and SPA sites, NHAs, unspoilt areas of Especially High Scenic Amenity, Areas of Fresh Water Pearl Mussel, and important views and prospects. Map 9 of the Plan highlights these areas.

The appeal site lies within an 'Area Open for Consideration'.

Objectives include:

E-O-5: To ensure that wind energy developments meet the requirements and standards set out in the DEHLG Wind Energy Development Guidelines 2006, or any subsequent related Guidelines (or as may be amended).

Policies include:

E-P-11 It is the policy of the Council to:

(1) Facilitate the development of appropriate wind energy proposals in the "Area Open for Consideration" as identified on the Wind Energy Map No. 7, and
(2) Not favourably consider wind energy proposals in those areas identified "Not Favourable" on the Wind Energy Map No. 7.

E-P-12 It is a policy of the Council to encourage all wind energy developers to engage in pre-planning consultation with the Planning Authority in relation to development proposals. Developers are also encouraged to engage with the local community to investigate the potential for local community benefit that may arise, and/or arrangements for local community investment.

E-P-14 It is a policy of the Council to support voluntary initiatives from developers/wind farm operators for local community benefits, in accordance with other policies of the Plan and the proper planning and sustainable development of the area.

(Examples could include shared ownership of development proposals, financial dividends, the development of improved local infrastructure, etc.)

E-P-16 It is a policy of the Council to support the clustering of wind farms within the vicinity of existing or proposed grid connections and existing operational and approved windfarms to achieve economies of scale and to minimise the spatial extent of environmental impacts.

E-P-17 It is a policy of the Council to strengthen and enhance the capacity and critical mass of existing wind farms, within the local environmental capacity including the sustainable upgrade/replacement of older turbines with newer and more efficient models.

E-P-19 It is a policy of the Council to ensure that all roads associated with the development of wind farms are maintained or repaired at the developer's expense to the satisfaction of the Council.

E-P-20 It is a policy of the Council that potential impacts on natural, built and cultural heritage including impacts on archaeological monuments and watercourses are assessed as part of windfarm development proposals. Where such impacts are

identified, mitigation measures such as buffer zones, separation distances and access arrangements should be employed as appropriate.

*Development and Technical Standards – Wind Energy*

Wind energy proposals are to be screened for Environmental Impact Assessment and Appropriate Assessment.

The following is required to be considered in the preparation of wind energy proposals:

- Geological assessment of the locality.
- Geotechnical assessment of the overburden and bedrock.
- Assessment of local and migratory flora and fauna.
- A Peat Stability Assessment to determine the possibility of a bog burst or landslide.

No fencing is to occur on any part of the site except for around ancillary developments such as substations.

All grid cable connections within the site are to be undergrounded.

Wind turbines must meet the requirements and standards set out in the DEHLG Wind Energy Development Guidelines 2006, or any subsequent related Guidelines and in addition must not be located within:

(a) The zone of visual influence (ZVI) of the Glenveagh National Park.
(b) The zone of influence / flight path at Donegal Airport.

In defining Glenveagh National Park, the Plan states that the environmental and visual character of the Park consists of the geographic extent of the park and its immediate environs and that the implementation of the relevant policy should not be interpreted as relating to lands with limited physical or visual connection to the park. The onus is on the applicant to demonstrate the extent of the potential impact a proposed wind energy development has on the National Park.

<u>Natural Heritage</u>

*Sites Outside Designated Areas*

The Plan states that the EU Birds Directive requires member states to protect the habitats of important species outside of designated areas. It is acknowledged that Donegal is important for a range of species of high conservation value, which occur in the wider countryside outside designated areas, which should also be protected.

*Protection of Wetlands*

The Plan notes that Ireland is a signatory to the International Ramsar Convention on the conservation and wise use of wetlands. Wetland habitats, such as peat bogs, are noted to have a high ecological value and are seen to have a role in the carbon cycle, helping to mitigate against climate change.

*Conservation*

To protect the most sensitive landscapes from intrusive and/or unsympathetic developments, Areas of Especially High Scenic Amenity (EHSA) have been identified in the Plan and are illustrated in Map 8.

The appeal site lies outside of these designated areas.

Objectives include:

NH-O-1: To protect the rich biodiversity of County Donegal for present and future generations.

NH-O-3: To maintain the conservation value of all existing and/or proposed SACs, SPAs and NHAs and RAMSAR sites including those plant and animal species that have been identified for protection.

NH-O-4: To protect and improve the integrity and quality of Designated Shellfish Waters, and Fresh Water Pearl Mussel Basins and to take account of any relevant Shellfish Reduction Programme or Fresh Water Pearl Mussel Sub-Basin Plan.

NH-O-8: To protect the character of the landscape where and to the extent that the proper planning and development of the area requires it, including the preservation of views and prospects and the amenities of places and features of natural beauty or interest.

Policies include:

NH-P-1 It is a policy of the Council to ensure development proposals do not damage or destroy any sites of international or national importance, designated for their wildlife/habitat significance.

NH-P-5 It is a policy of the Council to require consideration of the impact of potential development on habitats of natural value that are key features of the County's ecological network and to incorporate appropriate mitigating biodiversity measures into development proposals.

NH-P-12 It is a policy of the Council to safeguard prominent skylines and ridgelines from inappropriate development.

NH-P-15 It is a policy of the Council to ensure the protection of Cró na mBraonáin habitats and Grouse sanctuary given its high concentration of Red Grouse and its importance to the national Red Grouse population, which is a protected species under the EU Birds Directive.

The Gaeltacht

Objectives include:

CCG-O-6: To continue to promote the appropriate and sustainable linguistic, cultural, social, physical and economic development of the Gealtacht subject to normal planning & environmental considerations and to maintain the primacy of the Irish language and its associated culture.

## 4.0 PLANNING HISTORY

Planning Authority Ref. 09/30230 – Permission was granted for the erection of a meteorological measuring mast.

Planning Authority Ref. 10/30221 – An application for 38 no. wind turbines of 64m hub height with 74m rotor diameter, 4.5m wide trackways, four borrow pits, a substation, peat disposal areas and associated site development works was withdrawn following a request for further information from the planning authority.

## 5.0 THE DECISION OF THE PLANNING AUTHORITY

The application was received by Donegal County Council on 7th April, 2011.

The reports to the planning authority were as follows:

### 5.1 Submissions from Prescribed Bodies

Submissions were received by Donegal County Council from a range of Prescribed Bodies. A synopsis of the submissions made is as follows:

*Irish Aviation Authority*

The Authority seeks an aeronautical obstacle warning light for the development and details of the turbine coordinates and elevations.

*Inland Fisheries Ireland*

IFI set down needs in relation to drainage and control of surface waters

*Department of Arts, Heritage and the Gaeltacht*

Archaeology

The Department set out its requirements for archaeological monitoring.

Natural Heritage

The Department noted the potential effects of the development on freshwater habitat, on heath/bog habitat, on lake habitats, on breeding and migratory birds, and on terrestrial mammals. Concerns are raised about the EIS in relation to water quality and salmonids and Freshwater Pearl Mussel, and borrow pits and water quality. Concerns arising from peat impacts on tributaries of the Stracashel and Shallogan Rivers and downstream effects for the West of Ardara / Maas Road cSAC are also alluded to. The applicant was asked to provide additional information to address the concerns raised.

*An Taisce*

This submission focuses on the impacts of the development on peatland, monitoring of avifauna, and impact on bats.

*Heritage Council*

Concerns were expressed about the impact of the proposed development on Red Grouse.

## 5.2 Submissions from within Donegal County Council

The reports to the Planning Section were as follows:

The Environmental Health Officer reported on the issues of noise, shadow flicker and foul effluent. Conditions to attach to a grant of permission were scheduled.

The Roads and Transportation Engineer was generally satisfied with the detail provided in the application. A bond as protection against damage to roads was requested.

The Planner set out the planning history for the site. The hills forming part of the site were noted and it was submitted that the height of their peaks and their visibility from the public road network means the scattered location of the turbines on all sides of the hills will result in a highly visible windfarm development from both distant views and in closer proximity to the site. It was noted that the road network is in reasonable condition but that it will be under pressure with the traffic movements associated with the proposal. The submissions received by third parties were scheduled and responses were provided. An assessment of the proposal was carried out under the headings Compliance with the County Development Plan, Compliance with National Policy & Guidelines, Impact on Human Beings, Ecology and Drainage Issues, Traffic Impact, and Landscape & Visual Impact. A request for further information was recommended.

On 26th May, 2011, Donegal County Council sought further information in relation to the natural heritage issues raised by the Department of the Environment, on improved quality photomontages, and on land registry maps.

A response to this request was received by the Council on 14th October, 2011.

Following this, the reports to the Planning Authority were as follows:

The Department of Arts, Heritage and the Gaeltacht submitted that it was satisfied with the level of bird survey work and believes the mitigation measures proposed are sufficient to ensure there will not be a significant impact on any Natura 2000 site or on nature conservation.

The Planner noted the responses to the further information request. Turbines 3, 4 and 5 were recommended to be omitted as a result of their intrusive nature on the landscape. Issues raised by third parties were considered. A grant of permission subject to conditions was recommended.

On 19th January, 2012, Donegal County Council decided to grant permission for the development subject to 21 conditions. Condition no. 2 required the omission of Turbine Nos. 3, 4 and 5.

### 5.3 Submissions from the Public

Submissions were received by Donegal County Council from:

<u>In support of the scheme</u>:

John McGarvey

Opposing the scheme:

Catherine Histon & Ezio Vicarri
Michael Quinn
Cheryl McLoone
Liam McLaughlin
Patricia Sharkey
Alun & Kathleen Evans
Shamus Kelly
Dr. M.J. Cooke
Heidi Nguyen
Anne Marie McDermott
Richard Tobin
ATP/Coiste Timpeallacht Gaoth Dobhair
Ernan O'Donnell
Damien McCallig
Cumann Iascairí Bhaile na Finne
Dr. F.M. Hardy
Joseph & Declan Brennan
Golden Eagle Trust Ltd.
Gweebarra Conservation Group
Liam Miller
Kevin Deering
Bridget Miller
Michael Miller
Moira Miller
John Griffin
Louis & Joan Hanlon
Peadar Ó Baoill
Dr. Siobhan Sharkey
Margaret McCallig
Michael Devine
Johnny Boyle
Denise Boyle
Séamus Mac Giollabhuí/Comhlacht Traenach na Gaeltachta Láir Teo.
Irish Peatland Conservation Council
Michael McGeehan
Máire Ní Fhioghaire
Ger Roche
Breezy Kelly
Breda Lalor
Conor Kane
Eli Gothill
Christine Sharkey

Rosa Flannery
Bridget Herron
Linda Bonnar

The issues raised are addressed in the appeal and observation submissions to the Board.

## 6.0 THIRD PARTY APPEALS

### 6.1 Appeal by Michael Quinn

The appellant lives in Straboy. The grounds of the appeal may be synopsised as follows:

- The proposal was dealt with in a shambolic and highly questionable manner by the planning authority by failing to apply a rigorous and robust EIA.
- There was a lack of public consultation.
- The proposal will have an extremely detrimental and profound visual impact on the area.
- The development should be viewed with other massive development in the Straboy area, namely the 110kV power lines and switching station. The cumulative effect would be a step too far.
- There are a total of 6 separate applications for windfarms in the Glenties area for a cumulative total in excess of 100 turbines. The cumulative impact will have a devastating impact on the area.
- The proposal will result in 'sky-lining' contrary to Development Plan requirements.
- The proposal is in a well populated area and will seriously injure residential amenity in terms of visual impact and noise. It will also detract from the appearance of Glenties.
- There are concerns about the health effects of the proposal on local families.
- The noise forecasting method used in the application is seriously flawed and inaccurate.
- No breeding bird survey was undertaken.
- The proposal will cause significant damage to tourism.
- The proposal will devalue property.
- The construction phase will have adverse impacts on local residents in relation to traffic.

### 6.2 Appeal by Anne Marie McDermott

The appellant lives in Stranaglough, Glenties. The grounds of the appeal may be synopsised as follows:

- There was inadequate public consultation.
- The planning authority's procedures process was lacking in the context of handling submissions after the further information request. Details in the applicant's submissions were inadequate and the provision of files after the further information submission was deficient.
- The proposal will have adverse impacts for residents in relation to noise, the visual effect, proximity of peat disposal areas, light pollution, shadow flicker, community divisiveness, and $CO^2$ emissions.
- The visual impact will be the death knell for tourism in Glenties.
- The impact on the area's wildlife is noted, notably on the watercourses, Swans, Brent Geese, red grouse, falcons, snipe, red squirrel, hare, and bats.
- There is concern about the possible pollution of Lough Derkmore to the north which is the drinking supply for Leitirmacaward and parts of Dungloe due to surface and sub-surface drainage northwards.
- The proposal will seriously compromise the geological attractions of the area, namely Pollnapaste.
- The proposal will have detrimental effects on fish stocks.

### 6.3 Appeal by Fiona Hardy

The appellant, with an address at Letterlilly, Glenties submits grounds of appeal which may be synopsised as follows:

- The siting of 17 of the 22 turbines is contrary to the Development Guidelines and Technical Standards of the County Donegal Development Plan, notably the distance from lakes and streams. They should be omitted by condition.

### 6.4 Appeal by Catherine Histon & Ezio Vaccari

The appellants, with an address at Dirlaught, Leitirmacaward, submit grounds of appeal relating to the following:

- Ground stability issues, with regard to karst and limestone in the area of the site, subsidence, and history of bog slide.
- Subsurface drainage issues due to karst and limestone and pollution of water courses.
- The lack of consideration in the EIS of the Leitirmacaward Water Treatment Plant with its source at Lough Derkmore.
- The failure to address in a detailed geotechnical manner the effects on drainage to the north of the site, including the catchment of the Gweebarra River.

Other issues raised relate to insufficient reference made to loss of local grazing lands, inadequacy of illustrations in the EIS, and outdated photographs.

### 6.5 Appeal by Seamus Mac Giollabhuí / Comhlucht Traenach na Gaeltachta Láir Teo

The grounds of appeal relate to the adverse impact the proposed development would have on tourism in the area by its effects on the receiving environment, inadequacy of photomontages, contradiction with visitor attitude surveys, health concerns and the proximity to Glenties, and the impacts arising from the karst and limestone formation in the vicinity.

### 6.6 Appeal by Liam Miller

The appellant resides in Derryloughan, Doochary. The grounds of appeal relate to the proximity of the development impacting on the financial value of the appellant's home, its amenity value, and the health impacts on the household, notably by noise, the visual impact, and shadow flicker. It is further submitted that the planning authority did not assess the environmental impact of the scheme in accordance with the requirements of the EIA Directive. A request is also made that Strategic Environmental Assessment be undertaken.

### 6.7 Appeal by Gweebarra Conservation Group

The grounds of appeal relate to the following:

- Procedural errors and serious data omissions.
- Impact on ecology.
- Adverse health impacts.
- The intrusive visual impact.
- Lack of public consultation.
- Impact on the effective use of adjacent farmland.
- Impact on the Gaeltacht.
- Adverse tourism impacts
- Effects on natural resources.
- Concerns relating to geology, soils and hydrology.
- Archaeological impacts.
- Water quality impacts.
- Traffic effects.

- Noise from the scheme.

The proposed development is compared with guidelines and precedents.

### 6.8 Appeal by Michael McGeehan

The grounds of appeal may be synopsised as follows:

- The scheme will destroy a precious habitat.
- It will be dangerous to human health.
- It will pose a major threat to the tourism industry.
- It will have an adverse effect on views from roads.

### 6.9 Appeal by Peadar Ó Baoill

The grounds of appeal may be synopsised as follows:

- The appellant is a fisherman and local who is concerned about the damage and pollution that would result for watercourses.
- The development conflicts with the County Development Plan policy on protecting the linguistic and cultural heritage of the Gaeltacht. The proposal will have significant adverse effects on the ways, traditions and community of this Gaeltacht area.
- The planning authority's dealings of the application with the appellant failed to comply with the provisions of the legislature on communication through the Irish language.
- There is no reference to correspondence with Údarás na Gaeltachta, Department of the Gaeltacht or organisations associated with the development of the Gaeltacht.
- The proposal has been very divisive.
- Concerns are raised about the geology and hydrogeology of this location and the lack of understanding about it.

### 6.10 Appeal by M.J. Cooke

The grounds of appeal may be synopsised as follows:

- Residents living within 1.5km of the development will suffer serious health complications if it is allowed to proceed, notably from low frequency noise and vibration.

- The Wind Energy Guidelines are seriously flawed as they don't take into account scientific and medical research over the last 15 years and are out of step with current European and WHO guidelines.
- The scheme results in huge industrialisation of a beautiful rural area.
- The release of vast amounts of $CO^2$ by the construction is contrary to the scheme being seen as 'green'.
- The local road network is inadequate for the construction.
- It is unsuitable adjacent to conservation areas and would endanger protected flora and fauna on and adjacent to the site, as well as posing a risk to watercourses.
- It would impair mountain views and would have a disastrous impact on the skyline.
- It would contravene Development Plan policy on managing and promoting the natural, built and cultural heritage.
- Subsidisation of the wind industry is called into question.

### 6.11 Appeal by Irish Peatland Conservation Council

The grounds of appeal may be synopsised as follows:

- While recognising the importance of increasing the renewable energy sector, the development cannot be supported as it is at the expense of the protection of internationally endangered habitats and the conservation of biodiversity.
- There is an obligation to protect the rare and threatened blanket bog habitat.
- The proposal is adjacent to a large number of areas designated for nature conservation. This highlights the importance of the area for biodiversity and the need for it to be managed accordingly. These sites support a wide variety of Annex I habitats. The overall status of these habitats is either 'Poor' or 'Bad'. The proposal is not conducive to the required restoration of these areas.
- The area is known to support a number of protected birds. Study has found that 7 of 12 endangered bird species show significantly lower frequencies of occurrences closer to turbines, with a large number of these endangered species found in the development area.
- Red Grouse is present on and adjacent to the site and is a Red Data Book species. This species has not been given due assessment by the planning authority.
- The developer has not undertaken adequate stress testing of the peat substrate.
- It needs to be questioned if the expected savings in carbon emissions will be offset by the increased carbon losses associated with its construction.

### 6.12 Appeal by Joseph & Declan Brennan

The grounds of appeal relate to the following:

- Concerns for the Red Grouse habitat, Cró na mBraonáin, on the northern side of Achla Mountain.
- The impact on the Golden Eagle project.
- The visual intrusion on the landscape and the inaccuracy of photomontages.
- The applicant has not illustrated that there will not be an impact on Freshwater Pearl Mussel by way of runoff into the Shallogan and Stracashel Rivers upstream of the Owenea River as requested by way of further information.
- The developer has paid no regard to the site's unstable geology.
- The inadequacies of the EIS and adherence to precedents established by the Board in recent decisions.

### 6.13 Appeal by Damien McCallig

The grounds of appeal relate to the following:

- Invalidity of the application
- Inadequate EIS.
- The impact on Golden Eagles and Red Grouse.
- The negative impact on tourism.
- The inadequate assessment of the turbine delivery route.
- The inadequate assessment of the impact on the local population.
- Proximity of the turbines to adjacent landholdings.
- The unduly strident impact on the visual amenity of the area.
- Failure to adequately address fire safety issues.

### 6.14 Appeal by Golden Eagle Trust

The grounds of appeal relate to the following:

- The lack of any Breeding Bird Survey.
- The inadequacy of robust and detailed avian surveys.
- The loss of Golden Eagle territory from wind farm development.
- The siting of turbines within 2km of a nest site.
- The further information response still falls far short of an acceptable EIS without a breeding bird survey or an adequate Golden Eagle survey across the whole year and following recognised vantage point methodologies.
- The use of Straboy Hill and Derkbeg Hill by Golden Eagles and the consequent sensitivity of the site being 'high' and significance of impacts being 'high'.
- The unreliability of Vantage Point survey work undertaken by the applicant.

### 6.15 Appeal by Liam McLaughlin

The grounds of appeal may be synopsised as follows:

- There is no evidence of an Eirgrid Gate connection for the scheme.
- There is no evidence the grid infrastructure in Donegal can support the extra loading.
- There has been no prior consultation with local residents.
- No provision has been made for damage to roads or bridges during construction.
- The turbine delivery route has not been properly assessed.
- The project will have a detrimental effect on tourism.
- It will cause untold damage to unique flora and fauna.
- The EIS is inadequate.
- The number of inaccuracies in the application could be a deliberate effort to mislead.

## 7.0 APPLICANT'S RESPONSE TO APPEALS

The following is noted in the overview of the applicant's submission:

- The proposed windfarm has a valid grid connection application for the ESB Networks Group Processing Approach Gate 3.
- All landowners associated with the proposal had given consent to the application on their lands and to the location of turbines within 500m of their dwellings.
- The proposed development is located in an area of Donegal where applications for wind energy projects are assessed on their own merit (a 'preferred' area in the draft Donegal County Development Plan 2012-2018), being located outside the zone of visual influence of Glenveagh National Park, outside an Especially High Scenic Amenity Area, with no views or prospects, and with no designations.

### 7.1 Response to Appeal by Michael Quinn

<u>Location of Proposed Development</u>

- The site is, in strategic terms, where there is support in principle for wind energy development.
- There is no exclusion on wind energy developments being located close to small urban nodes in the Guidelines or Development Plan.
- The optimum layout has been determined for the scheme.
- It avoids spatial dominance.
- Key grid infrastructure has been taken into account.

Efficacy of the Application process

- The application was subject to a comprehensive and robust assessment.
- The EIS does include a birds breeding survey and the methodology for the survey work was agreed with the Golden Eagle Trust.
- The Gweedore River catchment has not been impacted.
- On return of submissions in response to the further information, the Council was acting in accordance with the Regulations.

Public Consultation

- There is no mandatory requirement for formal public consultation.
- The applicant engaged with the statutory bodies.
- The application was subject to Regulation requirements in relation to public notices.
- The response to the further information request was advertised.
- The proposal did not constitute Strategic Infrastructure, which would have required a more comprehensive level of engagement with members of the public.

Visual Impact

- The visual impact was comprehensively assessed in the EIS.
- The degree of visibility has been accounted for in the choice of siting and elevation.
- The ZVI shows the development will be visible over a wider area but in generally very distant views.
- The nature of the layout does not give rise to skylining.
- Visual impact will be most significant from the R250 near Straboy and from all other locations the impact will be moderate.
- 3 turbines were omitted by condition to preserve the visual amenities of the area and this was not appealed.
- The proposed 110kV line will help to assimilate the development. (Additional photomontages attached).

Cumulative Impact

- Cumulative impacts with other windfarms are negligible because of the distance between them, the respective locations and the typography.

Noise

- Impacts at construction stage will be of a temporary nature.

- The applicant is willing to accept a condition that noise levels measured at the nearest noise sensitive location shall not exceed 43 dB(A)LAeq(15mins).
- Monitoring within six months of commissioning shall be arranged.

Impact on Health

- In the absence of national/international evidence to the contrary, or of any policy direction on the issue, the Board is asked to set aside this ground of appeal.
- No significant effects arise from shadowing. 'Shut down' of appropriate turbines to protect residential amenity can apply if there are complaints.
- The applicant is willing to accept a condition for monitoring of shadow flicker.

Hydrological Concerns

- The immediate area is serviced by mains water, sourced from Lough Anna in the Owenea River catchment but not downstream of the site.
- There are no wells in the immediate environs.
- There will be no impact on septic tanks.

Landslide

- Site specific mitigation measures are proposed.

Breeding Birds

- In relation to the bird breeding survey, the 2-4 July are close enough to the end of June so as not to materially depart from best practice (April-June).
- The range of bird species recorded was in line with expectations.
- The Department of Arts, Heritage and the Gaeltacht, in response to the further information, were satisfied with the level of bird survey work.
- Monitoring recommendations were made. This could be conditioned.

Tourism

- The site is removed from the county's main tourist attractions.
- There is no evidence to suggest the narrow gauge railway operating in the area will cease to operate as a result of the development.
- The tourist's view of an area is entirely subjective.
- Given the area has no landscape or environmental designation, its location relative to the amenities of Gweebarra Bay, and the absence of any dedicated tourist infrastructure on the site, the proposal will not result in significant adverse impacts on tourism.

Devaluation of Property

- There is no evidence a wind farm has a lasting negative effect on house prices.

Local Road Capacity

- The public road structure and carrying capacity should safely accommodate the heavy traffic associated with the deliverance of exceptional loads.
- The attachment of a bond is acceptable.

## 7.2 Response to Appeal by Dr. Catherine Histon & Prof. Ezio Vaccari

Karst & Limestone

- The Falcarragh Limestone Formation does not underlie any part of the development, or at least has no surface expression.
- The cave system in the area is not extensive. Pollnapaste is 2.1km away.
- If the formation is at depth with no surface expression it would be isolated from surface water flow and therefore karst features would not develop.

Subsidence

- There are no bedrock formations on the site that would be susceptible to collapse.

History of Bogslide/Peat Landslide

- Site specific mitigation measures are proposed to reduce the likelihood of a peat landslide from 'likely' to 'unlikely'.

Subsurface Drainage Issues

- The surface water catchment areas were shown in the EIS. As turbines are not located within the Gweebarra River catchment, this catchment is not shown.
- The bedrock is not karstified.
- Lough Derkmore is acknowledged as a drinking water source. It is not karst in origin. Water abstraction is upstream of the Pollnapaste cave system. Runoff from the scheme will not flow north to the lake.

Drinking Water Abstraction from Lough Derkmore

- Lough Derkmore drinking water source was not mentioned in the EIS and this is regrettable. However, the surface water runoff from the site does not flow to the north.
- There are no public water abstraction points downstream of the site.
- It is impossible for surface water from the borrow pits to gravity flow to the lake.

Catchment and Drainage of the Gweebarra River

- The development site does not fall within the catchment of the Gweebarra River.

Other Matters

- Adequate assessment and provisions have been made in relation to Freshwater Pearl Mussel and Red Grouse and Golden Eagle.

### 7.3 Response to Appeal by Fiona Hardy

- The turbines are each not located within 150m of lakes and streams.

### 7.4 Response to Appeal by Anne Marie McDermott

In relation to the issues of location, public consultation, handling of the application, noise, visual impact, tourism, surface and sub-surface drainage, the applicant's response has been set out in previous responses above. Responses to other issues can be synopsised as follows:

Deferment of Information

- All conditions attached to the planning authority's decision are necessary, relevant, enforceable and reasonable.

Drawing Materials

See above in relation to Lough Derkmore.

Distance from Houses

- The distances of houses from T24 and T25 are 507m and 530m.

Glinting

- With the proposed finish and colouring, glinting will not occur.

Impact on Wildlife

- Attention was paid during bird vantage point surveys to movements of large wildfowl.
- Snipe is likely to occur in the winter months.
- A bat survey was undertaken.

Impact on Waterways

- All waterways were assessed.
- An ecological management plan has been prepared with mitigation to protect watercourses.

Loss of Forestry

- The forestry on site is commercial forestry.

Peat Disposal Areas

- The site contains natural features which pose hazards for children. The peat regeneration areas will be surrounded by properly constructed clay berms.

Light Pollution

- No issue was raised by the IAA.

### 7.5 Response to Appeal by Seamus Mac Giollabhuí

In relation to the issue of tourism, the applicant's response has been set out in previous responses above. Responses to other issues can be synopsised as follows:

Impact on the Gaeltacht

- There will not be any impact on the Gaeltacht area. The site lies outside of the Gaeltacht area defined in Map 11 of the Development Plan.

Impact on Fintown Tourist Railway

- The impact from View 12 in the EIS is a fair depiction, representing the terminus of the railway, and the development will have a slight visual effect.

Visual Impact

In addition to the general response to this issue, the applicant submitted:

- There are high elevations with limited or no accessibility in the National Park where the proposed development might be visible. The southern boundary of the National Park is a distance of 16.4km to the nearest turbine (T10). The visual impact is negligible.
- The decision of the Board in PL07.238734 cannot apply as the site is in an area where wind energy is acceptable in principle.
- The trackways will blend into the existing landscape colouring.

Other

- There are no recorded archaeological, architectural or cultural heritage features within the land take.
- No evidence is submitted to support the assertion the development will impact on health or ecology.
- Taller turbines would give rise to a pronounced visual impact over a larger area.

### 7.6 Response to Appeal by Liam Miller

In relation to the issues of noise, public health impact, property devaluation, and procedures, the applicant's response has been set out in previous responses above.

### 7.7 Response to Appeal by Gweebarra Conservation Group

In relation to the issues of procedures and the Marsh Fritillary, the applicant's response has been set out in previous responses above. Responses to other issues can be synopsised as follows:

Data Omissions

In addition to the response to this issue earlier, the applicant submitted:

- The applicant is obliged to protect common frog.

- Marsh fritillary could possibly occur on lowlying parts of the site. A condition could require a project ecologist to survey the site and to integrate into the Ecological Site Management Plan a programme of management.
- The grid connection is not part of the application and will be subject to permission in the event of permission being granted for the development.
- Carbon losses are calculated and details are attached and the carbon payback is estimated at 2.4 years.

Impact on Blanket Bog

- As the habitat surveys were undertaken in March 2010 and February 2011 a comprehensive inventory of plant species on site could not be compiled. However, it was possible to assess the composition of dominant and many characteristic species, habitat structure, and important features of the ecosystem function.
- Table 2.12 in the further information sets out habitat loss. Only a fraction of the site will experience habitat loss and disturbance.

Rare Plants

- Bog orchid and Lady's-Tresses were not recorded within the site. The latter does not favour upland areas. A condition requiring a programme of monitoring for bog orchid could be applied.

Freshwater Ecology

- The EIS, AA, Ecological Site Management Plan and Surface Water Management Plan all deal comprehensively with the issue of identifying, assessing and proposing measures to protect sensitive watercourses and associated fauna.

In relation to bats, Derkmore Wood pNHA, scenic landscapes, impact on health, shadow flicker, archaeological and linguistic heritage, public consultation, and geology see earlier responses.

Other

- No otter were detected and Lough Nacroaghy is likely to be too elevated to support resident otters.
- The applicant is not aware of any right of way in any folio maps.

### 7.8 Response to Appeal by Michael McGeehan

The issues of the impacts on the natural environment, health, tourism and Fintown Railway, and visual impact have been addressed above.

### 7.9 Response to Appeal by Peadar Ó Baoill

The issues of impact on cultural heritage and procedural matters are addressed above.

### 7.10 Response to Appeal by Dr. M.J. Cooke

The issues of impact on health and environmental impact are addressed above.

### 7.11 Response to Appeal by Irish Peatland Conservation Council

In relation to the issues of impact on habitats and carbon footprint, the applicant's response has been set out in previous responses above. Responses to other issues can be synopsised as follows:

Blanket Bog

- The objective is to direct development away from the sensitive 'best quality' examples of such habitats within designated sites.

Habitat Surveys

- Two separate habitat surveys were undertaken and this had an input into design and positioning.

Designated Sites

- The assessment on designated sites is comprehensively addressed in the NIS.

Red Grouse

In addition to the response to this issue earlier, the applicant submitted:

- While improving habitat for Red Grouse at Straboy is proposed, care must be taken not to attract foraging Golden Eagle into an area in which the prey base has been enhanced. It is proposed to work closely with NPWS, the Golden Eagle

Trust and projects such as at Aghla to find the best approach to Red Grouse habitat enhancement in the Glenties area.

Peat Stress Testing

- The results obtained in the Straboy site were considered by UCD to be in the stronger end of the range for peat.
- Undisturbed peat samples collected on the wet heath represent low risk of peat slippage.
- The assessment used a combination of factors to assess risk of peat landslide.

Habitat Loss

- Regeneration of blanket bog would take a greater time to develop than wet heath. Habitat compensation is ongoing on other windfarms and the applicant will liaise with parties undertaking such work.

Impact on the Frog

- The developer is obliged to protect or translocate under licence.

An Dough Mountain

- The Straboy site falls short of representing 'best examples' of upland habitats such as blanket bog, wet heath, etc. The upland habitats are of National rather than International status.
- Comparisons are made with the Dough Mountain windfarm site.

### 7.12 Response to Appeal by Joseph & Declan Brennan

In relation to the issue of local geology, the applicant's response has been set out in previous responses above. Responses to other issues can be synopsised as follows:

Impact on Red Grouse and Golden Eagle

- While it is correct to say that a detailed Red Grouse survey was not undertaken as part of the EIS, Red Grouse was considered in detail as part of the avian impact assessment.
- The value of the site for Red Grouse is accepted.
- Bird survey work was undertaken during the critical period.
- It is accepted that insufficient consideration of movements between Straboy and Achla was included in the EIS. It is noted that there could be some exchange of

birds between Straboy and Achla. However, Straboy is somewhat isolated in the landscape from other areas of high ground.

- Studies show no evidence that wind farms cause a decline in local populations.
- In relation to Golden Eagle, bird survey work was undertaken for the period July 2010 to July 2011, though vantage point survey work was not undertaken in April-June 2011.
- The EIS noted the recording of two birds in September 2010.
- The nearest known breeding site is 10km south of Straboy.
- The EIS clearly identified the uncertainty with respect to Golden Eagle.
- An increase in the level of the Golden Eagle in and around Straboy would increase the site's sensitivity to High. With a magnitude of impacts of Low to Medium, the significance of impacts would be Low to Medium.

Photomontages

- The photomontages represent an accurate portrayal of the proposed layout.
- On visual impact see above.

Freshwater Pearl Mussel and Water Quality

- A comprehensive assessment was included in the EIS and particularly in the further information.

### 7.13 Response to Appeal by Damien McCallig

Invalidity

- The proposed site location in the Gaeltacht is referenced in the EIS.
- The extent of lands for which consent is required was provided.

Inadequate EIS

In addition to the response to this issue earlier, the applicant submitted:

- The applicant is committed to commencing breeding bird monitoring in April 2012, with particular attention to Merlin.
- A full year of monitoring of Golden Eagle will commence in April 2012.
- Measures to avoid or reduce impact on streams are scheduled and there will be no residual impact on hydrology or surface water quality.

Visual Impact

- The effects of the layout and siting of turbines compared with the previously withdrawn application are evaluated and changes are detailed. It is concluded that the planning authority is satisfied with revised siting and locations of turbines.

Fire Safety

- In the absence of no guidance on this issue, this ground of appeal should be set aside.

With regard to all other issues these have been addressed above.

### 7.14 Response to Appeal by Golden Eagle Trust

- The extent of survey work was repeated in response.
- It is accepted that it cannot be stated with certainty that Merlin do not use the site.
- On the vantage point survey, the surveyor was not visible to birds of prey.
- It was not possible to find VP positions outside the site that would have adequately covered the site.
- On Red Grouse, extreme caution is urged on the view by GET that there is an opportunity for wind farm developments to benefit local Red Grouse populations by habitat management. This would attract Golden Eagle to forage over the site in Straboy putting them at risk of collision. Habitat improvements should be undertaken offsite close to known or potential eagle nesting sites.

On all other issues raised see above.

### 7.15 Response to Appeal by Liam McLaughlin

The issues raised in the appeal are addressed in the responses above.

## 8.0 PLANNING AUTHORITY'S RESPONSE

The response to the appeals may be synopsised as follows:

Public Consultation

- Public consultation is not a mandatory requirement or something that can be required after the formal submission of an application.

Impact on Households

- None of the turbines are located within 500m of any dwelling.
- On the basis of the applicant's noise assessment and the Windfarm Guidelines, the proposal is acceptable in terms of noise levels.
- On the basis of the analysis in the EIS, the anticipated shadow flicker is within normal acceptable levels. As no turbines are within 500m of any dwelling it is considered acceptable that no turbines need to be omitted or relocated.

Impact on Tourism

- There is no evidence to support the claim the development will have an impact on tourism in the area.

Impact on Wildlife/Environment

- The implementation of all proposed mitigation measures will ensure the development will not have a significant negative impact on the receiving environment or wildlife.

Impact on Water Supplies

The proposed development will not have a significant impact on water supplies/sources in the area.

Site Stability

- The planning authority is satisfied that the detailed mitigation measures in the Peat and Surface Water Management Plan will ensure peat stability and surface runoff is controlled and managed in agreement with NPWS.

Visual Impact

- The site is located outside of towns and villages, not on designated lands, and is not within an Especially High Scenic Area. The most appropriate definition for the site is 'mountain moorland'. The Guidelines consider such landscapes open for consideration. The Guidelines note that in such landscapes large wind energy development with random layout, irregular spacing and high turbines can be appropriate given the scale of the receiving environment. This pattern of spacing and layout has been used. The exposure of the mountain range will result in the development being highly visible. Three turbines were omitted as they were the most incongruous and prominent.

Health Impact

- While aware research is being carried out by independent practitioners in relation to wind farm effects on humans, the information is not to date included in current policies or guidelines for assessing applications in Ireland.

Proximity to Lakes/Streams

- It is noted that four of the turbines (T6, T22, T24 and T25) are located within 150m of local streams. The planning authority is satisfied the works and mitigation measures will ensure these streams will not be negatively impacted upon.

## 9.0 OBSERVATIONS

The issues raised by the Observers include the following:

- Destruction of the environment
- Impact on human health
- Noise
- Inefficiency of wind energy
- Property devaluation
- Peat instability
- Lack of public consultation
- Proximity to Glenties
- Impact on residential amenity
- Tourism impact
- Inadequate turbine delivery route
- Impact on protected structures by delivery
- Cumulative impact with other windfarms
- Cumulative impact with 110kV development
- Cumulative impact with a quarry development at Strangalough, Glenties
- Impact on avian species
- Shadow flicker
- Light pollution
- Visual impact
- Ineffectiveness on fossil fuel reduction
- Inadequate bonds/security
- Impact on animals and livestock health
- Impact on bats
- Impacts on Irish Hare
- Failure to respond to the further information request
- Contravention of Development Plan with regard to proximity to lakes/streams

- Impact on walking routes and cycleways
- Impact on Lough na Cruaiche
- Impact on schools in Glenties
- $CO^2$ emissions from developing the scheme
- Impact from drainage and peat storage areas
- Handling of the application by the planning authority
- Inadequate survey work and monitoring
- Impacts on wells and Lough Derkmore water source
- Impact on walking routes
- Distractions to traffic
- Fire hazard
- Impact on rights of way
- Impact on the Freshwater Pearl Mussel
- Impact on Red Squirrel
- Development Plan review and separation distances
- Turbine blade failure
- Inadequate public notice
- Lack of impartiality of applicant and his agent
- Impact on communications

## 10.0 ASSESSMENT

### 10.1 Introduction

A very significant number of issues have been raised by third parties and observers. I propose to address most of the principal planning concerns under the following headings:

- Compliance with Policy
- Impact on Public Health
- Landscape and Visual Impact
- Ecological Impact
- Considerations on Peat
- Noise
- Cultural Heritage
- Traffic Impact

It is intended that focusing substantively on these issues invariably addresses the main concerns of all. In acknowledging the range of other concerns by many individuals, the Board will note that I have also attempted to offer considerations on many of these. I am satisfied that the range of issues covered in my assessment adequately relates to the extent of submissions made by third parties and others and I wish it noted that any failure to acknowledge and openly consider any other issue raised is unintentional.

## 10.2 Compliance with Principles and Policy

### 10.2.1 International Policy

*United Nations Kyoto Protocol to the Convention on Climate Change*

The Kyoto Protocol is an international agreement that sets limits and reduction targets for green house gases for developed countries. It came into effect in 2005 and its emission reduction targets are binding. Ireland is a signatory to the Agreement and, for the period 2008-2012, is required to limit its greenhouse gas emissions to no more than 13% above 1990 levels. These commitments are in the interest of promoting sustainable development and this includes the development and increased use of renewable forms of energy.

With current estimated greenhouse gas emissions acknowledged to be well above the target set under the Kyoto agreement, the principle of promoting and developing wind farm projects such as that proposed would be compatible with the objective which aims to see Ireland achieve its required targets.

### 10.2.2 European Union Policy

*Directive 2001/77/EC*

This Directive, dating from September, 2001, was on the promotion of electricity from renewable sources in the internal electricity market. This placed an obligation on Member States to establish a programme to increase the gross consumption of renewable energy-based electricity generating plant. The indicative target addressed to Ireland was to increase green electricity from 3.6% of gross electricity consumption in 1997 to 13.2% by 2010.

*Directive 2009/28/EC*

This Directive, adopted in April, 2009, is on the promotion of the use of energy from renewable sources and it establishes binding targets of 20% of overall EU energy consumption to come from renewable sources by 2020. Ireland's target under this Directive is for renewable resources to account for 16% of total energy consumption by 2020.

It is evident that the pursuit of the principle of development such as that proposed is in keeping with Ireland's obligations to meet with established EU targets.

### 10.2.3 National Policy

*Sustainable Development: A Strategy for Ireland*

This publication, dating from 1997, had the purpose of providing a comprehensive analysis and framework to allow sustainable development to be taken forward more systematically in Ireland. Initiatives indicated in the Strategy included an estimated further growth of installed electricity generating capacity from renewables to 14% of total installed capacity by 2010 and new incentives to encourage investment in renewable energies. There was an emphasis in the reduction and more efficient use of energy and the greater use of renewable energy to contribute towards mitigating global problems such as climate change.

The nature of the proposed development is in keeping with the intent of this Strategy.

*National Climate Change Strategy*

The Strategy was first published in October 2000 and its implementation seeks to ensure Ireland meets the commitments under the Kyoto Agreement. It proposes a number of approaches and one of the key measures for the energy sector is the expansion of renewable energy. Fuel switching to renewables is supported, with the Strategy considering the maximisation of renewable capacity as being essential towards meeting the Kyoto Protocol target.

A second National Climate Change Strategy 2007-2012 was published in April, 2007. Therein it is acknowledged that the EU has set targets in the reduction in greenhouse gas emissions by at least 20% on 1990 levels by 2020. These targets were generally supported by Ireland at the time of publication although Ireland's precise contribution was not stated. Ireland's commitment to limiting emissions for 2008-2012 to 13% above the 1990 level was re-stated. Emphasis was placed on the opportunity for increased investment in energy efficiency and renewable resources. The Strategy acknowledges that investment in modern energy infrastructure, including the progressive deployment of emerging technologies, will, over the longer term, contribute to greater reductions in emissions by increasing the efficiency and sustainability of energy consumption. It is also acknowledged that electricity generation from renewable sources provides the most effective way of reducing the contribution of power generation to Ireland's greenhouse gas emissions. It was stated that national targets for the contribution of renewables to power generation were: 15% of electricity consumed to be from renewable sources by 2010 and 33% by 2020.

The contribution by increases in energy from wind would be perceived as an important component in seeking to achieve the targets set out in the Strategy.

*The National Development Plan*

The National Development Plan 2000-2006 sought the promotion of alternative energy and noted that special efforts were necessary to expand the use of renewable energy and

to promote the development of technology which contributes to the abatement of $CO_2$. One of the main environmental challenges to be addressed by the Plan was seen to be meeting Ireland's Kyoto commitment to limit the growth of greenhouse gas emissions.

The National Development Plan 2007-2013, under the Sustainable Energy Sub-Programme, acknowledges the commitment in the previous Plan to renewable energy and energy efficiency. The Plan details that investment in the sustainable energy sector during the 2007-2013 period is to encompass focusing on achieving Government targets for renewable energy production and meeting policy goals with regard to competitiveness, environment, security of supply, R & D, and the development of a sustainable all-island energy market. The primary focus is to be on large scale deployment of wind, the emerging potential and deployment of biomass and bio-fuels, preparatory action on ocean energy and deployment of other technologies such as solar and geothermal technologies.

It is apparent that the continued development and expansion of wind energy infrastructure is a targeted priority for economic infrastructure improvement.

*The National Spatial Strategy 2002-2020*

Prime considerations in terms of spatial policy are referred to in the Strategy and include key infrastructure and energy in particular. This includes strengthening energy networks in the North West and Border areas and enhancing the robustness and choice of energy supplies across regions through improvements to the national grid for electricity.

The Board will recall the relatively recent decision to permit the development of the 110kV powerline running from Binbane to Letterkenny and through the environs of Glenties. This is developed in accordance with the national strategy to improve grid capacity and it is envisaged that the proposed development would be connected to an associated substation.

### 10.2.4 Regional Policy

*The Border Regional Authority Regional Planning Guidelines 2010-2022*

The Guidelines acknowledge that the development of more sustainable, competitive, diverse and secure supplies of electricity to support economic and social development is a key challenge for the Region. The Guidelines schedule the principal challenges for the Region. A significant challenge is seen to be growing the share of energy derived from renewable sources, whilst conserving and protecting the extensive ecological and environmental assets of the region. Under the heading 'Infrastructure Strategy' reference is made to the Renewable Integration Development Project (RIDP) where it is stated that Eirgrid is working with the electricity utilities in Northern Ireland to identify the most optimal solution for the network to cater for renewable generation in the north west of the island. It is acknowledged that by the year 2020, should all the Gate 3 wind farms

connect, there is the potential to have 660 MW of wind generation in County Donegal alone. It is further noted that significant reinforcements will be required in County Donegal. With specific reference to renewable energy, the Guidelines note considerable potential exists for the exploitation of renewable energy generation, particularly wind, wave and tidal energy. The Border Region strongly supports the national targets for renewable energy and reducing energy consumption. The Regional Authority, in partnership with local authorities, is proposing to develop an integrated Regional Energy Strategy on renewable energy generation, to identify an optimal mix of renewable energy sources and proposed locations for development, to ensure consistent and complementary development across the region. The proposed strategy is to align and comply with national and international policy directives, in particular the EU Habitats and Birds Directives. The Guidelines state that such a strategy should include and prioritise wind energy as the region is seen to be ideally located to make significant contributions to the revised targets for renewable energy generation of 40%. Local authorities are to provide landscape sensitivity analysis in support of the strategy to further refine locations suitable for development.

Under the Section 'Environment and Amenities', the following is noted:

With regard to natural heritage, policy includes:

ENVP5: All development plans and projects within the Border Region shall conserve and protect biodiversity and the ecological integrity of

- All designated sites, or any new or extended ecological sites during the life of the Guidelines, of international and national importance, and sites proposed for designation, in particular European sites, and Ramsar sites, NHAs and statutory Nature Reserves;
- Species listed under Annex I – Natural Habitats, Annex II – Animal and Plant Species, and Annex IV – Animal and Plant Species of Community Interest in need of strict protection of the Council Directive 92/43/EEC.

Strategic objectives for natural heritage include:

ENVO5: Through development plans, identify and protect ecological networks linking protected designated important sites within each council area, in accordance with Article 10 of the Habitats Directive.

With regard to landscape, policy includes:

ENVP7: Protect, conserve and manage the quality, character and distinctiveness of the landscape.

In relation to Tourism, the Guidelines note the region is rich in natural resources but that the sector is one with much potential yet to be realised. The lack of progress is seen to have been linked to poor infrastructure in the past and lack of access. Under the heading of 'Regional Economic Strategy', tourism is seen to be an important enterprise sector in the region. Glenveagh National Park is acknowledged as the major tourist attraction in County Donegal. The re-introduction of the Golden Eagle into the local habitat is referenced. The Guidelines note that it is the landscape on which the tourism industry is largely based and that this will play an important part in securing future prosperity by supplementing the local economy. Area branding based on aspects of the natural environment is seen to strengthen cultural identity.

Under the section 'Social Infrastructure and Community Development' and with regard to the Gaeltacht, the Guidelines acknowledge and support the importance of the protection and development of the Gaeltacht area as a place for speaking Irish and for the conservation of this unique part of culture. The existing infrastructural and economic deficiencies of the Gaeltacht are noted as a significant challenge. The key challenge is seen to be maintaining the critical linguistic sustainability threshold. It is a Strategic Objective to promote the social, physical and economic development of Gaeltacht areas.

The principle of the development now proposed at Straboy, as a renewable energy project, is compatible with the relevant energy provisions of the Regional Planning Guidelines. How the proposal fits with the issues of heritage, tourism and the Gaeltacht require more detailed considerations later in this assessment.

### 10.2.5 Local Policy

*Donegal County Development Plan 2012-2018*

Wind Energy

The Plan states that an analysis of areas suitable for wind energy development within the county has been undertaken. 'Areas Open to Consideration' and areas 'Not Favoured' are identified. It is stated that the 'Areas Open for Consideration' were identified having regard to a range of factors, including wind grid connections, natural heritage designations and landscape sensitivity, and road infrastructure. 'Not Favoured' areas include SAC and SPA sites, NHAs, unspoilt areas of Especially High Scenic Amenity, Areas of Fresh Water Pearl Mussel, and important views and prospects. Map 9 of the Plan highlights these areas.

Wind energy objectives include:

E-O-5: To ensure that wind energy developments meet the requirements and standards set out in the DEHLG Wind Energy Development Guidelines 2006, or any subsequent related Guidelines (or as may be amended).

Policies include:

E-P-11 It is the policy of the Council to:

(1) Facilitate the development of appropriate wind energy proposals in the "Area Open for Consideration" as identified on the Wind Energy Map No. 7, and
(2) Not favourably consider wind energy proposals in those areas identified "Not Favourable" on the Wind Energy Map No. 7.

E-P-12 It is a policy of the Council to encourage all wind energy developers to engage in pre-planning consultation with the Planning Authority in relation to development proposals. Developers are also encouraged to engage with the local community to investigate the potential for local community benefit that may arise, and/or arrangements for local community investment.

E-P-16 It is a policy of the Council to support the clustering of wind farms within the vicinity of existing or proposed grid connections and existing operational and approved windfarms to achieve economies of scale and to minimise the spatial extent of environmental impacts.

E-P-17 It is a policy of the Council to strengthen and enhance the capacity and critical mass of existing wind farms, within the local environmental capacity including the sustainable upgrade/replacement of older turbines with newer and more efficient models.

E-P-19 It is a policy of the Council to ensure that all roads associated with the development of wind farms are maintained or repaired at the developer's expense to the satisfaction of the Council.

E-P-20 It is a policy of the Council that potential impacts on natural, built and cultural heritage including impacts on archaeological monuments and watercourses are assessed as part of windfarm development proposals. Where such impacts are identified, mitigation measures such as buffer zones, separation distances and access arrangements should be employed as appropriate.

*Development and Technical Standards – Wind Energy*

Wind energy proposals are to be screened for Environmental Impact Assessment and Appropriate Assessment.

The following is required to be considered in the preparation of wind energy proposals:

- Geological assessment of the locality.
- Geotechnical assessment of the overburden and bedrock.
- Assessment of local and migratory flora and fauna.
- A Peat Stability Assessment to determine the possibility of a bog burst or landslide.

No fencing is to occur on any part of the site except for around ancillary developments such as substations.

All grid cable connections within the site are to be undergrounded.

Wind turbines must meet the requirements and standards set out in the DEHLG Wind Energy Development Guidelines 2006, or any subsequent related Guidelines and in addition must not be located within:

(c) The zone of visual influence (ZVI) of the Glenveagh National Park.
(d) The zone of influence / flight path at Donegal Airport.

In defining Glenveagh National Park, the Plan states that the environmental and visual character of the Park consists of the geographic extent of the park and its immediate environs and that the implementation of the relevant policy should not be interpreted as relating to lands with limited physical or visual connection to the park. The onus is on the applicant to demonstrate the extent of the potential impact a proposed wind energy development has on the National Park.

I note that the appeal site lies within an 'Area Open for Consideration' as designated in the Plan. The issues of pre-planning consultation, the cumulative effects of clustering of wind farms in this area, the effects on the local road network, impacts on natural and cultural heritage, adequacy of the applicant's assessment, grid connection, and impacts on Glenveagh National Park will each be considered later in this assessment. In principle, the proposed development seeks to meet the wider policies and objectives of the County Development Plan that relate to expanding renewable energy and wind farm development within the county.

There are an array of relevant provisions, policies and objectives of the County Development Plan that relate to natural heritage, tourism, the Gaeltacht, etc. How the development meets with the Plan requirements in relation to each of these will be discussed under the relevant headings addressed later in this assessment.

## 10.3 Impact on Public Health

The impact on public health arising from the operation of the proposed wind farm is one of the most prevalent issues raised by third parties and observers. There is a genuine concern among the residents of Glenties and its environs about how the development would affect the health of residents, and children in particular. The submission by Dr. Chris Hanning on behalf of the third parties at the Oral Hearing focused on these impacts in particular. Reference is made to wind turbine noise having a low frequency component and having an impulsive nature that has an adverse effect on sleep. It is submitted that about 15% of the population is noise sensitive and that they are more likely to be found in quiet rural areas such as Straboy. Furthermore, the view that background noise masks turbine noise is rebutted, with reference being made to studies showing that such noise is not masked as well as current models predict. Dr. Hanning has submitted that the turbines of the size proposed for Straboy pose an unacceptable risk to the sleep quality and health of receptors who live within 1.5km of the wind farm, totalling approximately 120 receptors.

In response to the submissions on public health impacts, the applicant notes the work of the scientific advisory panel of the American and Canadian Wind Energy Associations (AWEA and CanWEA) which drew the following conclusions:

- There is no evidence that the audible or sub-audible sounds emitted by wind turbines have any direct adverse physiological effects,
- The ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans, and
- The sounds emitted by wind turbines are not unique.

The applicant submits in addition that the operational phase of the wind farm would have positive direct effects on the air due to the abatement of greenhouse gases. The Board is asked, in the absence of national/international evidence to the contrary, or of any policy direction on the issue, to set aside this ground of appeal.

In looking to this issue, I must first note the lack of public consultation by the applicant through the planning application process. The dearth of information about public health impacts from the proposed development has added to the fears and concerns of residents. I further note the degree of conflict in literature reviews on public health impacts from wind farms presented by both sides in the appeal process. The volume of such conflicting public health reviews presented at the Oral Hearing ably demonstrates this. The conflict of opposing findings only adds to the difficulties in the assessment of this issue. The extent of confusion, lack of clarity and, most importantly, lack of appropriate guidance on the assessment of public health impact makes the Board's task of adequately assessing this issue improbable. I must, therefore, indicate at the outset that the need for the provision of suitable guidance to adequately assess public health impacts from wind

farms falls outside the scope of this assessment. However, the issue merits highlighting due evidently to the epidemiological evidence that continues to mount that wind farms cause adverse effects on public health in contrast to the widely held views to the contrary. While being constrained in the ability to assess such an emotive issue, the Board cannot ignore the reality of significant community concern by not addressing this issue which goes to the heart of determining environmental impact on human beings and to the need to fulsomely undertake environmental impact assessment where it applies, as in this instance.

Turning to the Wind Energy Guidelines, the inadequacy of guidance on this issue is well demonstrated therein. This is despite the clear responsibility under European law in relation to EIA to assess this issue in the context of impact on human beings. The Guidelines, in my opinion, fall far short of that needed for assessment on public health. I accept that reference is made in the document to dangers arising from unsuitable ground conditions for construction and to the operational impacts arising from noise and shadow flicker. The Guidelines allude to setting noise limits, they are extremely general on separation distances and they fail to analyse sensitivity, actual health effects, the potential effects of infrasound, and any necessity for greater constraints relative to vulnerable receptors. In light of this, along with the increasing epidemiological studies countering the generally held views that public health effects are not a significant issue (i.e. with the application of restricted separation distances), and with the international reviews and application of varying guidance on the adequacy of and need for greater separation between turbines and occupied residential properties, it raises the need for greater guidance to allow planning authorities to make adequately informed decisions on such a critical issue. I submit that on this issue much can be learned from international best practice. However, I must also note that the guidance to which the Board would ultimately be required to have due regard when considering this application remains that set out by the Department of the Environment at present in the Wind Energy Guidelines.

The matters of public safety and wellbeing arising from peat slippage from the proposed peat repositories, from noise and shadow flicker have been dealt with elsewhere in this assessment. The impacts from peat failure are not a matter that correctly falls under the heading of impacts on public health as understood by the third parties in that the emphasis has been placed on the effects from the operating rotors on public health. While I consider the impacts from shadow flicker are unlikely in themselves to significantly adversely affect any occupied residence in the area because of the low likelihood of effects and because of the ability to resolve problems by controlling effecting turbines, the issue of audible noise raises some concern, as has been addressed in my noise assessment. This is because the residents in the immediate vicinity of the appeal site experience at present an environment where there are low background noise levels generally. As a consequence, wind turbine noise would be perceived by those sensitive to noise to change the character of this noise environment where it is audible. For those most sensitive, this change will constitute a nuisance and indeed a disturbance, particularly at night time, and will result in stress. The proposed development, therefore,

has the potential to impact on sleep patterns and thus adversely affect public health. In acknowledging this potential, the ability to quantify the effects in the instance of the proposed development is very much restricted and can be dependent upon anecdotal references to experienced impacts by appellants and observers to the appeal (such as those by Joan Hanlon) and to reliance upon literature review findings that are readily rebutted by conflicting reviews presented by the applicant.

In conclusion, it is my submission that those particularly sensitive to noise, in the quiet rural noise environment of Straboy to which established residents are accustomed, would likely experience disturbance by the wind turbines and the response to this disturbance could affect public health. How this can be quantified is an unknown. How significant the impact would be is also an unknown. The inability to adequately draw conclusions on this issue remains as a consequence.

## 10.4 Landscape and Visual Impact

### 10.4.1 Introduction

The impact on landscape character and the overall visual impact is a most important issue relating to the proposed development. The anticipated impacts by third parties, along with peat slide concerns and impacts on public health, are probably the greatest concerns arising for the local community in Glenties. The concerns include a focus on the proximity to Glenties and the highly visible nature of the development, skyline impacts, visibility from the public realm over a wide area, effects on Glenveagh National Park, and the cumulative visual impacts with other existing and proposed developments in the area.

### 10.4.2 Landscape Character

Turning first to the provisions of Donegal County Development Plan, I note that it is an objective of the Plan (Objective NH-O-7) to prepare a Landscape Character Assessment for the county. Therefore, the Plan itself is to some degree limited in its determination on landscape character. I do, however, note that a map illustration (Map 8) shows the Areas of Especially High Scenic Amenity throughout the county. These are areas determined to be of the highest landscape quality, characterised by wilderness and few, if any, man-made structures and primarily comprise upland, mountain and coastal areas. The appeal site falls outside of the EHSA areas. The Plan also acknowledges that the Donegal landscape is a national asset where the changing character of the physical landscape needs to be managed in a sustainable manner in order to retain, conserve and protect the quality of the landscapes. The objectives of the Plan include:

NH-O-8: To protect the character of the landscape where and to the extent that, the proper planning and development of the area requires it, including the

preservation of views and prospects and the amenities of places and features of natural beauty or interest.

The policies of the Plan include:

NH-P-10: To protect landscapes of Especially High Scenic Amenity (EHSA) and views and prospects and to preserve the character of distinctive regional, local and cultural landscapes in the county.

NH-P-12: To safeguard prominent skylines and ridgelines from inappropriate development.

These provisions, objectives and policies are important to consider in the case of the proposed development now before the Board. It is clear that managing the landscape in a sustainable manner, protecting the character of the landscape, amenities and features of natural beauty and interest, preserving the character of distinctive landscapes, and protecting prominent skylines and ridgelines are all relevant considerations for this development. These provisions culminate in a significant degree of protection afforded to important landscapes within the Plan.

In looking to assess the development against these provisions, the character of the landscape must first be determined.

The applicant submits in the EIS that the area is composed of a number of landscape qualities that include mountain views and small loughs. It is submitted that the area is primarily defined by topography, with the majority of the landscape being between the 110 and 330 metre contour. It is acknowledged that the landscape is composed of hills, and a river valley with scattered dwellings. The Blue Stack Mountains are seen to form a backdrop to the south. The applicant's position is that the landscape character type is *Mountain Moorland* according to the Wind Energy Guidelines. Further to this, the applicant submitted at the Oral Hearing on landscape character that the site is located on an exposed hill chain and is set in a landscape which is composed of pasture and coniferous forestry. It is noted that the site forms part of a mountain chain that extends from Glenties to Fintown. It is further noted that it lies on the slopes and ridges of Meenalargan, Straboy, Derkbeg and Mulnamin Hills and is parallel between the Gweebarra and the Stracashel/Shallogan river valleys. The area is acknowledged as belonging to the northern foothills of the Blue Stack Mountains. The applicant at the Hearing acknowledged the location of Glenties town when describing the landscape character. It was repeated that the landscape character type is *Mountain Moorland* according to the Wind Energy Guidelines.

The Wind Energy Guidelines refer to six landscape character types to represent most situations as a basis for the Guidelines. They note that it is common that a wind energy development could be located in one landscape character type but is visible from another.

Importantly in the context of the proposed development the Guidelines state that the entire visual unit should be taken into consideration. The key characteristics of the *Mountain Moorland* landscape character type are stated to be:

- Peaked, ridged or rolling mountains and upland with steep sides or gently formed valleys;
- Generally unenclosed;
- Landcover comprising blanket bog, a mottling of heather, wild grasses and some rush in wet flushes; and
- A landscape type of relative remoteness and often comprising pristine, unspoilt and remote landscapes.

The Guidelines note the exposure of mountains and that the preference for wind energy developments to be located at high elevations results in high visibility. It is further noted that this landscape may be inappropriate for wind energy development for reasons of natural heritage and the fact that some of these landscapes are of rare scenic quality and/or support some of the last wilderness areas of relatively pristine, unspoilt and remote landscapes.

At first glance one could readily concur with the position that the site falls neatly within the *Mountain Moorland* landscape character type. The appeal site certainly comprises peaked and ridged mountain terrain on which the turbines are proposed to be sited. It is primarily unenclosed. The dominant landcover is blanket bog and there are wet flushes, heather, etc. Where the development is to be constructed it is definitively remote and, throughout most of it, it exhibits a pristine, unspoilt character where turbines and the internal road network are to be sited. However, isolating this landscape character type as being that within which the site falls cannot be accepted, in my opinion. Acknowledging the visibility from another landscape character type and taking into consideration the entire visual unit must prevail.

There are two other landscape character types that require to be considered as follows:

The *Transitional Marginal Landscapes* have the following key characteristics:

- Comprising something of both mountain moorland and farmland, thus involving a mix of small fields, tight hedgerows and shelterbelts;
- May include relatively rugged and rocky terrain, and thus a reasonable degree of spatial enclosure;
- Higher ground tending to be wet and boggy. Lower areas are usually cultivated and managed as fields;
- Houses and farmsteads are usually fairly common; and
- The landscape type bridges the organised and intensively managed farmland and the more naturalistic moorland.

The Guidelines go on to state that the essential key here is one of respect for scale and human activities. The landscapes are acknowledged as often being relatively small-scale due to spatial enclosure provided by hills and it is stated that wind energy developments should respond sensitively to this intimacy. These landscapes are seen to be visually complex due to diverse landform and landcover, as well as houses and power and telegraph poles and lines. The Guidelines state that wind energy developments should avoid adding to such complexity due to the risk of creating visual confusion and conflict.

It is my submission to the Board that part of the appeal site clearly comprises a *Transitional Marginal Landscape* type. This is the area in the immediate vicinity of Lough Nacroaghy. Here there is mountain moorland and farmland and small managed fields. There is also rugged and rocky terrain and spatial enclosure. The upper areas frequently comprise wet and boggy areas and the lower areas on the approach to the lake are managed. Former houses are dotted within this area and buildings are still used as outbuildings associated with farming practices. The visual quality of this landscape around the lake is very high, arising from the area's remoteness, the traditional farm practices that have prevailed, and the highly scenic framing of this landscape character area by the uplands in the vicinity.

A second landscape character type that merits consideration in the context of the Guidelines is the *Urban Landscape Type*. I note that this alludes to built-up areas and settlements and the defined characteristics in the Guidelines demonstrate this. However, it is the matter of acknowledging the visibility of the proposed development from this landscape character type and taking into consideration the entire visual unit that needs to be addressed in this instance due to the proximity of the proposed wind farm to the town of Glenties. It is particularly pertinent to note that the Guidelines when discussing this landscape character type chooses to demonstrate visually in its illustrations such developments in proximity to urban settlements in a manner, which I would suggest, is reflective of the circumstances within which the proposed development would find itself relative to Glenties (and even further therefrom when considering illustration 5(e) of the Guidelines). Reference to applying rational order and simplicity, visually relating to the functional nature of these landscapes, achieving visual integration, etc. are all relevant issues. Avoiding the spatial domination of a hill and town (see illustration 5(a)) is particularly relevant in considering the appeal site. The Guidelines, on the issue of cumulative effect, also suggest that in urban areas there is little tolerance of more than one wind energy development due to the likely sense of clutter and possible feeling of dominance. This is a notably relevant consideration in the context of the significant issue of cumulative effects arising from existing and proposed development in the Glenties area.

Having regard to the above, one cannot then easily determine that the appeal site fits neatly within the *Mountain Moorland* landscape character type as defined in the Guidelines and then assess it in isolation. The impact of the proposed development on

landscape character is particularly complex in this instance. Overall, it is my submission that the proposed development, in terms of impacting on landscape character, would produce a very significant negative impact by reducing the quality of the range of landscape character types it would influence. It does what the Guidelines say should be avoided. In coming to this conclusion, I submit the following:

- In the context of the *Mountain Moorland*, the proposed turbines and the associated internal road network are to be developed on a highly exposed site, much of which is proposed to be sited on elevated ridgelines. The very high natural heritage value of the site (albeit the site lies outside of designated conservation sites), based upon the extent of Annex I habitats and Annex II and Red listed species clearly evident on and in the vicinity of this site, point to very grave impacts on this important natural heritage. The extensive areas of remoteness and very obvious unspoilt and pristine qualities of much of the site suggest substantive difficulties with protecting this wilderness landscape.

- In the context of the *Transitional Marginal Landscape*, the Guidelines emphasise respect for scale and human activities. This landscape character type will be totally dominated by the proposed development. The intimacy of the landscape character around Lough Nacroaghy will be entirely lost by the siting of the turbines around the lake environs. This is a most unique landscape at this location whereby describing its diverse range of qualities is difficult to elucidate. It is a small pocket of traditionally farmed land, in distinct contrast with the ruggedness of its surrounds. It is a notable enclosed, readily definable area of significant tranquillity. It remains somewhat unaffected by modern living and work practices. While isolated behind Straboy and Meenalargan Hills, it is easily accessible. The value of this landscape character area would be destroyed by the imposition of the development around it. The cumulative impact on the landscape by the clear negative impacts on important habitats and species exacerbate the problem with the development on this landscape. There is no sensitivity to the landscape's intimacy by the proposal. There is direct conflict in landscape impact terms. It is not a question of omitting a few turbines to address these concerns. The sheer scale of the development can only gravely impact on this landscape.

- In the context of the *Urban Landscape*, it would be remiss to not consider the inter-visibility between the development and the town of Glenites in landscape impact terms. A critical issue for the Board to acknowledge is the context in which Glenties is located. This town, regularly nationally acknowledged for its visual qualities, is dependent upon such accolades deriving from its natural setting first and foremost. From its natural setting comes all else, and in particular its tourism value. The natural setting of Glenties allowed for the formation of a town nestled below hills and mountains that create the fringe of the town. These hills and mountains frame the town. They are an integral part of the definition of the town because they contain it. One cannot separate the visibility of the town from

the visibility of its hills and mountains. And what is critically important for the Board to note in the instance of this proposed development is that Straboy, Loughcrillan, Mulnamin and Derkbeg Hills are the most distinguishable of all the framing uplands when viewed from the public realm within Glenties environs. These hills are effectively inseparable from understanding the context of the town itself. To superimpose the proposed turbines and the associated lengthy internal road network onto these hills has a very significant landscape and visual impact for the town. Due to the sheer scale of the development and the prominence of the hills, the function of these hills as part of a natural framework for the town gets irreparably damaged, indeed permanently distorted and disfigured. Contrary to the Guidelines, there is not and cannot be visual integration when pursuing this proposal at this location. This development would dominate the hills on which it is set and would be a most overbearing influence on the town itself by its inability to integrate.

I can, thus, only conclude that the proposed development would culminate in a significantly negative landscape impact. I am firmly of the position that the Wind Energy Guidelines support such a conclusion.

### 10.4.3 Visual Impact

*Zone of Visual Influence*

As part of the applicant's assessment of visual impact of the proposed wind farm, the generation of a Zone of Visual Influence (ZVI) map of a 20 x 20 kilometre tile, centred on the appeal site, was undertaken. This illustrated the visibility of the turbines, accounting for both visibility of the hub and blade tips. Appendix 3 of the EIS maps the ZVI. The analysis illustrated the extent and number of turbines visible. The model employed did not take into account any screening effects of buildings or vegetation.

It is clear when considering the analysis that the visibility of the turbines is particularly notable to the south (around and within Glenties), the south-east and south-west, to the north-west and to the north. Notwithstanding the caveat that the screening effects of buildings and vegetation are not accounted for, it is evident that the proposed development would be highly visible from the nearby town of Glenties and that most of the proposed turbines would indeed be viewed. This, in my opinion, reinforces my conclusions drawn above that the visual dominance of this development on the town will be very significant. The effects are multiplied by the proximity to the town and the scale of the development. The ZVI further demonstrates that the potential visual impact is also particularly notable for the nearby coastal locations around Gweebarra and Trawenagh Bays and for the remoter uplands to the north as one proceeds in the direction of the Derryveagh Mountains. Clearly with distance the visual dominance dissipates. However, the prominence of this scale of development from coastal and upland areas, ably

demonstrated by the ZVI, suggests that this contribution to the landscape is an interference, a distortion that imposes upon the highly valuable natural qualities of the landscape in this area and the visual experience of it. What is a very real detrimental impact of the development when viewed from each of these settlement, coastal, and upland locations is that many of the turbines would fail to retain any significant mountainous backdrop, thus producing isolated prominent skyline development.

Another relevant issue that should not go unnoticed, when considering the visual influence of the proposed development, is that the prominence of the proposal to the south and south-east would be compounded by the necessity to feed the energy generated into the national grid by a connection via a new overhead line from the proposed on-site substation to the distant Clogher station (as discussed under the heading of 'Grid Connection' in this assessment). While the routing of this line would be the subject of a separate planning application, I would be of the firm opinion that the sensitive landscape it would traverse would be further eroded by the necessity to provide such supporting infrastructure. This cumulative visual influence of the proposal should not be ignored in my view and is a further indication that this proposal would have an adverse visual impact on a sensitive landscape.

One final relevant issue when considering the ZVI arises from an issue of community concern, namely the visual influence of the development on Glenveagh National Park. At the Oral Hearing, I asked the planning authority to clarify for the Board the physical extent of Glenveagh National Park as considered by its reference in the Donegal County Development Plan. A series of four maps were produced in response – an outline of the Park area (extending from Lough Barra in the south-west to the Owencarrow River to the north-east and from Dooish Mountain in the north-west to Glendowan in the south-east) and then three maps showing this outline superimposed on the Special Protection Area at this location, the Special Area of Conservation, and the proposed Natural Heritage Area. The relevance of Glenveagh National Park for the proposed development relates to the County Development Plan provisions which require that wind turbines must not be located within the zone of visual influence of the Park. The Plan goes on to state that, in defining Glenveagh National Park, the environmental and visual character of the Park consists of the geographic extent of the park and its immediate environs and that the implementation of the relevant policy should not be interpreted as relating to lands with limited physical or visual connection to the park. The onus is on the applicant to demonstrate the extent of the potential impact a proposed wind energy development has on the National Park. The first point to be made is that the application was made prior to the making of the new Development Plan and that the applicant did not demonstrate the extent of potential impact on the National Park. None of the submitted photomontages demonstrate how the proposal would appear relative to the Park. I note that there have been many photographs submitted by third parties and observers and I would draw the Board's attention to those received by the observer Patricia Sharkey which show a view towards the site across Lough Barra from the National Park. There is no doubt, in my opinion, that the proposed development would be within the zone of visual influence of

the Park. It is the degree to which it influences the environmental or visual character of the Park that is important. The applicant has submitted at the Oral Hearing that the southern boundary of the Park is a distance of 16.4km to the nearest turbine (T10) and that at this distance the wind turbines would only be seen in very clear visibility as a minor element in the landscape. I accept that the visual influence has to have a negative impact on the natural environment from views within the National Park. However, with distance, such impacts are significantly reduced and clearly the topographical character of the Park influences the degree of visibility southwards towards the wind farm site. I note for the Board that there is an example of a wind farm in a much closer location to the National Park at Cronalaght north of Lough Nacung and west of Mount Errigal. This is a long established wind farm and is likely a good example of determining whether such structures have a significant degree of influence on the Park. I accept this is a small-scale wind farm with smaller turbines but they demonstrate that such developments have been sited closer to the fringe of the Park. The proposed development is a significantly greater distance in comparison to Cronalaght. One other feature which may be considered relevant in the context of the assessment of impact on the National Park is the limited definition of its boundaries. For example, it is apparent from the planning authority's definition that Errigal, the Poison Glen, part of Slieve Snaght, Crocknafarragh, Glendowan Mountains, etc. are excluded from the Park area. It is difficult to easily separate such areas from what could reasonably be understood as the natural environment that effectively defines it and which comprises its totality. Notwithstanding this, if one was to conclude that this more extensive area was to be perceived as the natural National Park area, its influence on wind farm development for vast areas of the county would be most prohibitive. In conclusion, it is reasonable to state that the proposed development would have a visual influence on the National Park and the effects on the perceived landscape character of this natural environment could not be construed as positive. However, the distance of the proposed site from the defined National Park significantly reduces that influence which may result in a conclusion being drawn that the impact is relatively marginal and therefore tolerable.

*Photomontages and Visibility from the Public Realm*

In addressing this matter, I propose to offer considerations on the photomontages presented as part of the EIS, as part of the further information response and as part of the applicant's submission to the Oral Hearing. The first observation I make is that those submitted as Appendix C of the EIS included many of particularly poor quality, making the turbines appear almost invisible at times and at other times hard to define. The planning authority recognised this and requested revised photomontages with an improved quality as part of its further information request. A second observation is that the photomontages submitted at the Oral Hearing included additional montages. It may be viewed that the improved quality photomontages present a fair and reasonable representation of the likely visual impact arising from views into the site from a wide

range of areas in most directions. This conclusion will be challenged at times in this assessment.

**Photomontage No. 1**

View no. 1 is taken from the R262 south-west of Glenties on the approach to the town at a distance stated to be 5.6km to the nearest turbine. The viewpoint is stated to be 3km south-west of the town. All of the development would be seen from this location. The applicant has determined the impact to be 'moderate'.

In my opinion, this is a very good example of the likely visual impact of the development for the Glenties area. My own photographs attached show the full extent of visibility of the hills and the approach to Glenties from this location. The photomontage ably demonstrates the significant extent of skyline development arising from the proposal. The knowledge of the location of the nearby town demonstrates the extent of dominance such a development would have on the town. In my opinion, the effects on the natural framing of the town by the turbines would irreparably damage this setting and the development could not be seen as visually integrating with its context. An overbearing influence would comprise the most notable attribute of the wind farm when viewed from this location.

**Photomontage No. 2**

View no. 2 is taken from the N56 on the approach from the west into Glenties. The turbines visible are stated to be a distance of 4.4km. The viewpoint is stated to be 2km south-west of Glenties. The applicant has determined the impact to have slight visual effects.

The first point I must make on this montage is with reference to the Wind Energy Guidelines. Appendix 3 of the Guidelines refers to the landscape impact assessment of wind energy development proposals and specific detail is provided on selection of viewshed reference points. Therein it is stated that the selection of viewpoints should always represent the worst case (most open) available view from any given location. Choosing the location for View 2 is most unrepresentative of a view from the N56 on the approach to Glenties. Hiding the visibility of the structures behind dense hedgerow and trees is somewhat elusive and even disingenuous in this instance. If one stands either side of this vegetation one gains extensive views of the hills on which the development is proposed to be sited. Consequently, the extent of development that would be visible would represent most, if not all, of the turbines in the general views available in this area. Skyline development and dominance of the ridgelines prevails in the same manner as that espoused in View 1. My own photographs demonstrate the visibility of the site in this area close to the Owenea River adjoining the N56. The impact remains detrimental to the setting of Glenties and the proposed development's dominance cannot be avoided.

**Photomontage 3**

Photomontage 3 is a more fair representation of views from the N56 on the approach into Glenties. The distance to the nearest turbine is stated to be 4.1km. The viewpoint is stated to be 1.5km south-west of Glenties. The applicant submits that the proposal generates moderate visual effects and that the scale of the development is equivalent to the scale of existing wirescape and vegetation.

What is notable about this view is that all of the turbines are visible in this view and the skyline is broken throughout. This montage, along with Photomontage 1, demonstrates well that there is no backdrop to the development to lessen the significant visual presence resulting from the imposition of the turbines on these hilltops. Comparing wirescape and vegetation with the scale of the development and its degree of visibility is misplaced in this instance, in my opinion. The turbines would be vastly greater in visibility terms and their siting would exacerbate their impact. The fact that they are not static structures, with blades turning, further influences their degree of visual impact.

**Photomontage 4**

View 4 is again taken from the N56 and the viewpoint is stated to be 1.7km south-west of Glenties.

This montage is deserving of the same consideration as that of View 2. It is an unreasonable representation in light of the requirements of the Wind Energy Guidelines. If one stands either side of the copse of trees one obtains a wholly different view of the wind farm site.

**Photomontage 5**

This view is taken from the R250 in Glenties at a distance of 1.8km to the nearest turbine. The applicant states in the EIS that 17 turbines would be perceptible and it is concluded that the turbines would generate moderate visual effects. The applicant submitted to the Oral Hearing that the scale of the development would be equivalent to the scale of the existing houses, wirescape and vegetation and notes some turbines are screened by trees at this location.

An important point to note is that this view is taken from within the town of Glenties. The viewpoint is a short distance north-east of the town's second level school. The question of impacting on ridgelines, skylining, and lack of any backdrop to the development remain evident in this view. I am not satisfied that the submitted montage accurately demonstrates the degree of visibility of this development on the town given the site's proximity to the town. I note a relative similarity in distance terms between this view and for example View 7. I cannot but note that turbines in View 7 appear as much more prominent and larger structures than those in View 5 and I am of the opinion that the

prominence of the structures would be significantly greater from this urban location. I cannot accept that the development would be comparative to houses, wirescape or vegetation having regard to this proximity, to its ridgeline siting, and the rotating components of the development. Real landscape and visual impact changes for the inhabitants of the town can be denoted from impact on views from this location.

**Photomontage 6**

This view is taken just beyond the edge of the town at the junction of the R250 and a minor local road on the approach to Meenalargan. At a distance of 1.7km, 11 turbines are visible. The applicant describes the visual effects as 'moderate' and compares the scale of development with the scale of existing wirescape and vegetation.

This photomontage is a poor representation of this location for a number of reasons. Firstly, it is fortuitous that a small section of hedgerow can block out a view of some of the more prominent turbines, i.e. Turbines 22 and 26. Secondly, it is a poor representation of the overall context within which the development would be viewed. I would suggest that a panoramic view presentation is demanded in this general area and this panoramic view would correctly demonstrate the scale and extent of the development's impact on this approach into the town of Glenties, in such close proximity to it, as well as demonstrating how the degree of visibility produces a cumulative impact with the recently erected powerline structures and the significantly greater dominance of the wind turbines when compared with this. In my opinion, it is wholly misplaced to compare the development with the wirescape and vegetation at this location for the reasons already alluded to earlier. If there is one aspect of the montage of value that can be gauged from it, it is that the domineering effects of the turbines on the houses at Meenalargan are clear. These structures will produce a degree of perceptible overbearance on the residents at Meenalargan.

**Photomontage 7**

This view is taken north-east of View 6 from the R250. It is stated that 12 of the turbines would be visible at a distance of 1.5km to the nearest turbine. The new montage submitted at the Oral Hearing shows the newly constructed timber polesets and angle masts of the 110kV line at this location. The applicant concludes that the development generates significant visual effects.

This viewpoint is at a location where there are expansive views of the landscape. The presentation of the montage in separate parts and the failure to reflect the panoramic view obtainable undermine the ability to accurately reflect the true impact of the proposed development from this location on the approach into Glenties. A most significant observation to make is the comparative impact between the 110kv development and the proposed turbines. There can be no doubt that the proposal constitutes a much greater visual and landscape impact and that its effect in terms of skylining and clear distortion

of the ridgelines are evident. I concur with the applicant's position that the visual effects are 'significant'.

**Photomontage 8**

This view is taken again from the R250, getting closer to the approach to the proposed entrance to the wind farm site. The EIS acknowledges that the landscape in this area is open in character and that there will be a close proximity view of the proposal. 13 turbines are stated to be visible at a distance of 1.1km to the nearest turbine. The applicant again submits that the development would generate significant visual effects.

I again concur with the applicant's conclusion that the visual impact of the proposed development from the R250 in this area would be 'significant'. The proposed development would appear as highly prominent and intrusive on the approach to the town and would dominate the landscape. The skyline impact and sheer scale of the turbines would permanently alter views of the natural uplands. The Board should note that even the evergreen forestry, in the main, fails to penetrate the ridgelines. The character of the landscape is greatly affected by the insensitivity of the placing of the turbines. I am also convinced that a greater number of turbines would be visible from this stretch of the R250 and that upper parts of several other turbines would be constantly prominent additional features. Once again I would also note that the scale of development relative to the 110kV line development is comparatively very much greater and fails to in any way integrate in a manner that the wooden polesets on lower lands more successfully do.

**Photomontage 9**

This view is again taken from the R250 and is a short distance north-east of the proposed entrance to the wind farm site. The EIS states that 10 turbines are noticeable from a distance of 1.4km to the nearest turbine. The EIS further states that the turbines "create a landmark in an otherwise featureless landscape and generate significant positive visual effects."

I note the applicant's consideration on the impact of the development in this view. I queried the conclusion drawn at the Oral Hearing. I cannot concur with the applicant's conclusion in this instance and consider the conclusion drawn as entirely subjective. This is a prominent view of Derkbeg and Straboy Hills on the approach into Glenties. It is in many ways an unspoilt view of the hills and its environs. To suggest that the landscape is featureless fails to acknowledge the natural character of this landscape and its consequent value. To impose dominant man-made structures of the scale proposed constitutes intrusion. The development irrevocably alters the landscape character in this view and completely overtakes all else in terms of what would be absorbed by the viewer.

**Photomontage 10**

This view is taken further out along the R250 at a stated distance of 3.6km to the nearest turbine. It is stated in the EIS that 12 turbines are visible and the applicant concludes that it would generate moderate visual effects.

My own photographs show the panoramic views available from this general location. The extent of evergreen forestry on the foothills is acknowledged. However, what is understood as the uplands is clearly discernible and the appeal site evidently falls within this. There would be a significant skyline impact resulting from the development of the wind farm. A notable impact results for a relatively unspoilt landscape, that heretofore has escaped significant man-made intrusion, and particularly for the many ridgelines visible in this area. The array of uninterrupted ridgelines is apparent from the view of the wider context. The development's contribution, in my opinion, could not be construed as positive in such a setting.

**Photomontage 11**

This view is taken some 4.3km north-east of Turbine 1 from the R250. Considerations of the value of this are reflected in my submissions on Views 2 and 4.

**Photomontage 12**

This view is again taken from the R250 at a distance of almost 6km from the site. The EIS notes that 7 turbines can be seen and it is considered they generate slight visual effects.

This viewpoint is considered sensitive by a number of third parties and observers given this general location's proximity to the Fintown tourist railway development. Clearly the visual impact lessens with distance. However, the development becomes a significant focus when it interrupts the natural skyline and imposes on the varying ridgelines where such interruption does not prevail at present. The extent of visibility of the wind farm increases over that demonstrated as the upper parts of turbines and rotating blade tips also come into view.

**Photomontage 13**

This view is taken at a distance of 7.3km from the site from the road linking Doochary to Leitirmacaward. The EIS states that 14 turbines are noticeable if the weather is clear. The visual effects are considered to be slight.

It is my opinion that the proposed turbines pose a striking silhouette, notwithstanding the distance involved, the weather being overcast and the light being poor in this view. It is notable that for the first time in the photomontages that there is a slight backdrop obtained for Turbine 2. Skylining and placing of structures on ridgelines, however,

continue to be problematic features overall. The applicant stated at the Oral Hearing that, in terms of their size and scale, the turbines appear as part of the landscape in this location. I cannot concur with a position that suggests that the turbines could appear as part of the landscape here. It is very much a view of the natural landscape where there is little intrusion by structures and none which dominate the skyline as the proposal does.

**Photomontage 14**

This view is taken south-west of View 13 from the same local road. The view is stated to be 6.4km from the appeal site. The EIS states that 14 turbines would be seen and it is concluded that the development generates slight visual effects.

This location allows for a very clear view of Derkbeg Hill. Again the montage is presented where the weather is overcast and when daylight is particularly poor. I attach photographs that present a similar view in significantly improved conditions taken in the afternoon of early October. It is obvious that the development will be constantly recognisable in this general area and will be a focal point from this road, where more than half of the turbines are highly visible and break the skyline. Several others will be prominent as rotating blades project over the ridgelines. There is notably more than a slight effect resulting from these structures where the varying ridgelines have not been interrupted up to this point by man-made structures.

**Photomontage 15**

This view is taken from Meenacarn, approximately 5.1km north-west of Turbine 10. 10 turbines are visible in this view. The EIS states that the blade tips of a further 8 are visible also. The applicant submits that the development generates slight visual effects.

This location allows for a view south-eastwards towards Derkbeg and Mulnamin Hills. It demonstrates from yet another different location that it compares well to all those previously referred to above by producing a development that continues to have no backdrop to lessen the highly visible nature of it, creating significant skyline development that dominates the viewable ridgelines. At this point in reviewing the photomontages, it can be determined that the highly visible impact, by the isolated nature of the hills, is evident and that the prominence of the development is apparent whether in close proximity to the site, within the environs of Glenties or from many rural locations south, east and north of the development. With the development's prominence, there is no visual relief for much of the area in which the proposal is sited. It would be a most visually strident development on the landscape.

**Photomontage 16**

This view is again taken in the Meenacarn area, closer to the proposed development at approximately 3.6km north-west of Turbine 11. The EIS states that 5 turbines would be

visible, with the blade tips of 4 others being visible also. The turbines are considered to generate moderate visual effects.

This view is effectively a close-up of View 15. The skyline impact is increased with proximity. The prominence of Turbines 10, 11 and 12 dominate the view. They produce significant distortion of the natural ridgelines. The exposed nature of the wider landscape is not readily evident from this close-up view of the site. At such close proximity, the turbines become very much a focal point in the view to an extent that I would suggest they exceed a determination that the visual effect is 'moderate'. The overall visual composition would be affected by the proposal and the scheme would detract from the quality of the landscape.

**Photomontage 17**

This view is taken from the vicinity of the public car park at Dooey Beach some 7.9km north-west of Turbine 13. The EIS states that 13 turbines are perceptible and that the development generates slight visual effects. It is further stated that the turbines appear as part of the overall pattern of the landscape.

The views from this area generated significant public comment in the submissions to the Board. I attach my own photographs which show the site in context from this general location. I also draw the Board's attention to my own photographs from within the site in the direction of Gweebarra Bay. The latter are particularly important as they demonstrate that what can be seen from the site also represent from where the site can be seen. What is most important in considering the relevance of this photomontage is the effect the development would have on views in the vicinity of Gweebarra Bay and the beaches in particular. There can be no doubt that the visibility gained from just above ground level on Mulnamin and Derkbeg Hills obviously demonstrate that the 99 metre high turbines will prove to be highly visible from Gweebarra Bay and its associated beaches, inclusive of Dooey. The skyline nature of the development prevails yet again and the turbines sit uncomfortably on the ridgeline. Despite a distance of almost 8km, they would be very striking features. To suggest they have a 'slight' impact from such a sensitive location and that they appear part of the overall pattern of the landscape is underplaying the effect in my opinion. I further note the relationship of the development with the Loughderryduff Hill wind farm and it was remiss of the applicant, in my opinion, not to demonstrate the inter-visibility of the schemes from this location. What I would indicate to the Board on this latter development is that the siting of that development allowed for a substantive upland backdrop which significantly reduces its visual prominence and skyline potential (see View 17B) unlike the proposal now before the Board.

**Photomontage 18**

This view is taken from Mín an Ghabhann to the west of the N56 and approximately 3.8km from the site. The EIS states that 13 turbines are visible and that they appear small in scale, with the visual effects created being determined to be 'moderate'.

The first point I make in relation to this montage is how the turbines appear smaller in the landscape and less prominent when compared for example to View 10 which is quite a similar distance. As has been alluded to above, this general area is clearly visible from within the site, thus the visibility of the tall structures would be expected to be marked from such a location. While this is a rural location of no notable amenity value of its own, the approaches to Gweebarra Bay and the associated beaches from the N56 are an integral part of the tourism and amenity experience and this development would be a dominant feature on the landscape in this area, which alters the more natural character that prevails at present.

**Photomontage 19**

This view is from the N56 at a distance of 3.5km from the site east of Maas. The EIS states that 16 turbines would be visible. The applicant submits that, in terms of size and scale, the turbines appear as part of the landscape and it is concluded that the visual effects are moderate.

This is an important view from the N56. This is a busy tourist route, linking Donegal to Dungloe and onwards towards Letterkenny. The view is at a location where the road skirts Gweebarra Bay. As can be viewed from my own photographs, the totality of the context of this view includes panoramic views of Gweebarra Bay immediately west of the view shown, Gweebarra Bridge and onwards towards the Derryveagh Mountains. The Board should note also that this view is in the immediate vicinity of where it is proposed, under the recently approved N56 Road Improvement Scheme, to develop a viewing point. This location for a viewing point was undoubtedly selected for the high quality of the view attainable from this actual location. The imposition of the proposed wind farm will radically alter this view. It is seriously downplaying the impact of the development on this view by suggesting the impact is 'moderate'. The structures would be visually strident features and they will suppress many of the natural characteristics that make the views from this location of merit and worthy of protection. The structures would not appear as part of the landscape. They would directly conflict with the quality of this view.

**Photomontage 20**

This view is from the N56 west of Glenties at a distance of 2.1km to the nearest turbine. The EIS states that 20 turbines would be noticeable in this view. The applicant acknowledges they would be clearly seen against the skyline and it is considered the impact generates moderate visual effects.

This view is taken from a location between a filling station and a bungalow on the outskirts of Glenties in an area where there is a line of houses on the approach into Glenties. The road then starts to climb as it proceeds past Lough Kip and on towards Letterlilly. Approaching the town from Letterlilly one gains panoramic views of the setting of the town and the linear pattern of the hills of which the appeal site forms a part. View 20 only captures a small part of this panoramic landscape and fails to draw attention to the setting of the town and the vast extent of the landscape of which the site forms a part. This view once again reinforces the isolated nature of this site as the turbines sit prominently on the ridgeline and command the viewer's experience of the landscape as there is no ability to screen the skylining resulting.

**Photomontage 21**

This view is a new view submitted to the Oral Hearing and is taken from the R250 in the general vicinity of Views 6 and 7. It is taken at a distance of 1.6km from the nearest turbine. This is introduced to demonstrate the cumulative effects of the proposal with the 110kV powerline recently erected. The applicant submits that the preload will be slight given the size of the poles and angle masts in relation to the turbines. The cumulative effects are regarded as negligible.

In considering this view, I suggest the Board consider View 7 in the new collection of montages submitted by the applicant to the Oral Hearing where the polesets associated with the 110kV line are also shown. There can be no doubt from the applicant's presentation that the proposed turbines completely dominate the view. If one was considering this the other way around, i.e. the wind farm in place and the impact of the 110kV line being introduced, one could readily determine that the cumulative effect of the polesets, placed down notably from the ridgeline and discretely masked by their colour, scale and general form, is not in any way substantive or significant. However, it is apparent that the turbines have a completely opposite effect. The 110kV polesets have a negligible impact. The turbines do not. The cumulative effect by introducing the proposed development categorically undermines the degree of man-made interference on the landscape. The sheer scale, extent and highly visible siting of the turbines cause significant visual distortion of the view experience. Another very important factor to note when considering View 21 is to not assess it in isolation, as View 7 adequately shows that many more turbines would be notably visible to the left of this photograph. Finally, while I understand the photographs are not directly comparable, I draw the attention of the Board to the common standard of view presented by the applicant prior to this photomontage. I note how from a similar distance in for example View 7 the turbines can be considered to be significantly greater in scale. This is the image expected to represent best the likely view experience. This reinforces the concerns already raised.

**Photomontage 22**

This again is a new view and is taken from the Straboy to Graffy Road at a distance of 2.6km from Turbine 1. It again seeks to represent the cumulative effect of the development with the 110kV powerline proposal.

This view illustrates once again the carefully planned siting of the powerline development and the ability to avoid skylining in a sensitive location. The wind turbines on the other hand directly contrast in form, scale and siting and, while the powerline has a notable effect on the view, the addition of the turbines significantly heighten the man-made interference with the landscape, albeit that this view is taken from a lightly trafficked local road.

**Photomontage 23**

This new view is similar to View 9 but presents the structures as more distant elements in the view. It also seeks to represent the cumulative effect of the proposal with the 110kV line.

My considerations on View 9 remain and my conclusions on the cumulative effect are similar to those for View 21. The failure to produce visual sensitivity, the starkness of the prominent turbines, and the inability to integrate prevail in contrast to the polesets.

**Photomontages 24-27**

These are views produced from the Meenalargan Road. It should be noted that this road is routed along the base of Straboy and Meenalargan Hills. This realisation of being somewhat 'under' the development, in close proximity, and the screening by houses, structures and vegetation result in the visibility of turbines to likely be more limited. The applicant considers the visual effects to be slight-moderate.

Photomontage 24 is at the entrance to a house that can be readily seen in View 7. It is a poor example to select as the nearest turbines appear sited over the ridgeline and the house appears secluded by outbuildings, structures and the front of the hills.

Photomontage 25 is at the entrance to another house further west of that in View 24. I suggest View 7 ably demonstrates how the turbines would directly impact visually on the houses in this view, with Turbines 14, 24 and 25 being highly dominant structures. The montage poorly demonstrates the scale of the turbines for those residing at this location and allows the structures to appear more distant in the view despite being only 1km away. Contrast this montage with View 7 and one sees how the scale of the development now appears to be substantively reduced in View 25. The impact will be very substantial for those residing here.

Photomontage 26 is at the entrance to a house further west again along the road. I must again offer the same considerations on this montage as above as it fails to reasonably present the likely visual impact for the residents at this location. At only 800 metres from the nearest turbine, the structures appear to be well set back into the distance. Contrast this again with View 7 and one sees how this montage fails to be accurate in its portrayal of the likely visual impact. Turbines 23 and 24 will prove to be vastly more prominent than is exhibited here. The development will have a very significant visual impact for the houses at this location. This conclusion is an unavoidable reality for residents if the development is to proceed at this location.

Photomontage 27 is further west again, with turbines at 900 metres distance. This shows houses with Turbines 21, 22, 23 and 24 being the dominant structures. The undulating landscape and vegetation masks the base of structures but the montage fails to reasonably demonstrate the scale of the top of the structures appearing to overhang the dwellings. Again I would ask the Board to consider View 7 in order to understand the scale of impacts on these properties. There would always be an appearance of overbearance associated with the structures' impact on these properties.

**Photomontage 28**

This final view is taken directly west of the proposed site at a distance of 8.2km from a minor road south of the R261. The wind farm development is central in the view and is the main focus of it.

In conclusion on the photomontages, I submit that, while with distance the visual impact is expected to lessen, it is striking that the proposed development fails at any time and from any direction to produce a development that provides some degree of a backdrop that allows the development to in some way integrate with its setting. At all times this development produces skylining and the turbines continually present themselves along ridgelines in a prominent format, dominating the view and becoming the focus in the view. This is the singular most detrimental characteristic of this development in the context of visual impact. The views from all directions demonstrate the likely dominance of the wind farm development in the immediate and wider environs. Accepting the development is accepting a notable negative visual and landscape impact for this area, which should not be tolerated for its impact on the town of Glenties, for impact on critical views on important tourist routes, and for the sheer scale of the development being an overbearing visual influence and intrusion on nearby residents. Finally, I note that there were no attempts to represent views from within the town of Glenties. The applicant has submitted that there will not be views of the development from here. It is my submission, having examined views from the main street of the town and from several main approach roads and from side streets within the town, that much of the proposed wind farm will indeed be visible and, as one moves north-westwards along the main street, views of

Meenalargan and Loughcrillen open up, as will views of the turbines if they are constructed where proposed.

### 10.4.4 Cumulative Visual Impact

This is a particularly important issue in the context of landscape and visual impact. The potential cumulative impacts arise from the recently developed (and developing) 110kV powerline in the vicinity of the site and from existing and proposed wind farm developments in the area.

The EIS offers considerations on the impact of the 110kV line and adjoining wind farm developments. It is concluded on the former that the cumulative impact would be negligible. With regard to the latter, reference is made to the nearest constructed wind farm at Loughderryduff, a permitted wind farm near Graffy, and another at Garvegort Glebe. It is again determined that the cumulative visual effects would be negligible because of distance. It is acknowledged that there will be some locations along the R261 near Kilclooney Beg where the Loughderryduff and Straboy wind farms would be visible in the same direction in the background in four and ten kilometre distance. The applicant's submission to the Oral Hearing repeated these considerations.

With regard to the cumulative impact of the development with the 110kV line, the Board will note that I have offered considerations above in relation to Photomontages 21, 22 and 23. Clearly, the proposed wind farm development causes a very much greater visual impact than the 110kV polesets and the photomontages ably demonstrate this. The placing of the 110kV line development appears to have been undertaken sensitively in response to the context in which it was being set, i.e. behind housing at this location and yet avoiding ridgelines and skyline development. The turbine development above and behind the 110kV line would be the dominant intrusion in prominent views from the R250. The totality of the effect of both developments would exacerbate the man-made intrusion on the uplands and detract from the visual and natural qualities of it.

In relation to other wind farm developments, I firstly note the applicant's map submission to the Oral Hearing showing the existing and permitted wind farms in relation to Glenveagh National Park. Looking at these locations in the context of the natural terrain prevailing in the wider context, one sees that if the town of Glenties is observed it can be acknowledged that upland areas prevail immediately north, east and south of the town and that lands rise westwards out of the town before becoming more undulating in nature beyond Letterlilly. An important observation, in my opinion, following on from this is to note where existing and proposed wind farm developments are sited – to the north at Straboy, to the east at Mully/Graffy, to the south-east at Cronacarkfree, to the south-west at Garvegort Glebe, and to the north-west at Loughderryduff. In the context of these observations, there can be a reasonably understanding of why the community in Glenties

perceive the town to be surrounded (or likely to be surrounded) by existing and proposed wind farm development.

If one examines the scale and extent of permitted and proposed development at this location then one can also start to understand, without the aid of a visual demonstration, that one's visual experience between Ardara, Narin, Doochary, Fintown, and for parts of the N56, the R253 and the R262, i.e. on all main approaches to the town of Glenties, is significantly influenced by wind farm development. I accept that the degree of inter-visibility is particularly hard to quantify. However, the interruption to the natural setting in which the town is placed has to be evident. I am not suggesting that all of these wind farms would be visible from the town. However, the natural environment that surrounds it is greatly altered by such development. It should be further noted that the scale of development one is considering in the context of cumulative effect is notable. The proposed Straboy development comprises 25 turbines. Garvegort Glebe comprises 4 turbines. Loughderryduff has 9 turbines and there is permission for another 11. Graffy has permission for 32 turbines. Clonacarkfree has permission for 13 turbines. If all of this development was to proceed then it is clear that there would be up to 94 turbines developed in what could reasonably be termed the wider environs of Glenties. One can understand a perception that wind farm development appears to be clustering around this area where Glenties is in a central position, representing the main urban settlement in this area. If one moves away from a position that cumulative impact is determined solely on the degree of inter-visibility between these wind farms and perhaps considers cumulative impact on the wider environs of this settlement, then, in my opinion, one can see the impact of landscape and visual change derived from the accumulation of wind farms in this area. This may not accurately represent an understanding of 'cumulative impact' but the accumulation of wind farm developments around Glenties merits mention. The change associated with it for the upland and prominent areas surrounding and on the approaches to the town is significant as each upland area becomes dotted with tall structures that impress upon views from the public realm, as each impinge on the quality of the natural landscape and as new development proposals further erode this quality.

### 10.4.5 Miscellaneous Issues on Visual and Landscape Impact

Final considerations are offered on a range of issues to complete the assessment on landscape and visual impact. A number of matters arising from the Wind Energy Guidelines are noted in particular.

- The Wind Energy Development Guidelines classify turbine heights as being tall, medium or short. A height to blade tip of over 100 metres is regarded as tall. It is reasonable to conclude that the proposed 99 metre height to blade tip in this instance brings the development very close to determining the turbines as 'tall' structures. The proposed development is contained in a landscape that is intimate in the context of the setting of Glenties and yet it would remain highly visible

from shoreline and mountains distant from the town. It is sited close to houses and the public road network. As a consequence, views to the site are available close to and far away from the site. With such high structures proposed, many will have a distinct landscape and visual impact for residents and those travelling the road network. The siting on the ridgelines of the four hills exacerbates the visibility of these high structures. In the overall context of impact on landscape and the visual amenity of the area, an enforced reduction in height of the turbines is not likely to produce any significant gain to the amenity of the area.

- With regard to the spatial extent and scale of the proposed development, it is my submission that the spatial extent is not balanced or in scale with its landscape context. Spatial dominance would prevail with the development of this scheme in such close proximity to Glenties. It also dominates each of the hills that form a chain of hills framing the town, proving too spatially extensive relative to the scale of the chain of hills.
- In relation to spacing, the position of turbines relative to one another and the gaps between turbines can be relevant issues when assessing the visual impact of wind farm development. I note that minimum gaps between turbines are technically necessary to achieve maximum efficiency. I note the Guidelines refer to regular spacing being more appropriate in unenclosed flat landscapes, irregular spacing being more appropriate in hilly or rugged landscapes, and that, generally, spacing should be of a uniform type in any wind energy development. In the case of the proposed development there is no distinct regularity associated with the spacing and there is no deliberate graduated or irregular spacing of turbines. The turbines have been spaced to maximise the potential of the site. I submit to the Board that the issue of spacing is not one of paramount concern in visual terms because the site is not necessarily suited to a definitive type of spacing, i.e. regular, irregular, or graduated. The topographical characteristics of this site could lend itself to a variety of spacing arrangements. Adjusting spacing arrangements in this instance would not address the accentuation of the prominence of the turbines on the ridgelines.
- On the issue of layout, I note the Guidelines promote the appropriateness of a circular / oval cluster or linear layout on hilltops. It is my submission that there is a somewhat random approach to the proposed layout and there is no true conformity to this recommendation in the Guidelines. I would, however, accept that it is extremely difficult to attain a uniform type of layout that could prove acceptable. It is my submission on the visual impact arising from the layout of the development that views from the public realm will result in the development being perceived as a range of layout types depending on where it is viewed from, with particular reference to the layout being linear or staggered linear. In reality, the random layout of the development on this landscape does not affect the degree of visual impact arising from the development. The exact siting of the turbines and achieving some sort of order to the layout is not a particularly relevant concern when this proposal is being viewed from the public realm as such an

enforced order would not be understood throughout the entire area where the development may theoretically be viewed from.

- On the issue of the landscape impact by the construction, I am of the view that this would be limited due to the temporary nature of the construction phase. It is a matter of site management primarily to minimise adverse impacts. Overall, it is a much less significant impact visually when compared to the completed development.
- On the issue of associated development, an additional visually significant component of the overall development will be the development of the internal road network. The effects of this network have not been displayed in any of the submitted photomontages. However, it is my submission that this network of 4 metre wide roads, particularly along Straboy and Meenalargan Hills, will prove prominent in themselves, producing a notable scar on the landscape. These hills are highly exposed to views from the R250. The roads would be placed on slopes, close to and on hilltops that heretofore have experienced no such interference. The effect cannot be masked by the use of local crushed stone finish on moorland that starkly contrasts with it. Banking edges, reseeding and placing some of the route through forestry would help to reduce impact. However, the vast extent of 11km of access roads on such exposed hills cannot be satisfactorily screened and would add greatly to the sense of intrusion resulting from the scheme. With regard to the grid connection, this issue has been referred to earlier. The sense of increased clutter for this area arising from the grid connection is another unwelcome component of the adverse visual impact of this development. Finally, the proposed control building and compound, while sited further upslope than the general siting of dwellings on the Meenalargan Road, would be relatively small in scale and would be afforded the backdrop of the existing evergreen forestry. This siting on the lower part of the overall site should result in this feature of the scheme not being particularly intrusive.

### 10.4.6 Conclusions on Landscape and Visual Impact

There can be no doubt that the proposed development will have a very significant landscape and visual impact, when viewed both locally and over great distances from roads, coastline and mountains up to and beyond 20km from the site. The height of the structures and the scale of a development encapsulating 25 tall turbines must ensure this development will be highly visible. The photomontages submitted as part of the EIS clearly demonstrate the development will have such a significant visual impact and emphasise the exposed nature and prominence of the wind farm in almost every direction. As a consequence, the understanding of the landscape will be changed. The development would have a dramatic effect over a wide area. While subjectivity inevitably comes into play when considering the aesthetics of a scheme such as that proposed, it is my submission that, for reasons set out above, the proposed development would cause very

real damage to the visual and landscape qualities of the Glenties area. It is incongruous, ill-placed, dominant development.

With due regard to these impacts, the conclusions on the resulting adverse impact this development would have on the valuable tourism industry in this area derived from the area's natural amenities should not be underestimated. The effects on tourism and the tourism product have been espoused by many in submissions to the Board. Tourism is perhaps the area's most important industry. It has many facets in Glenties but all of it centres on the natural qualities of the landscape and the visual qualities of this natural landscape. Seriously detracting from the landscape and visual qualities of this area results in the tourism product being seriously eroded. This development would have a tangible impact on the area's tourism product, i.e. its distinguished ridgelines that define the natural setting of the town and the edging of the natural wilderness just beyond this urban centre.

Returning then to the provisions of the Donegal County Development Plan where my landscape and visual impact assessment commenced, I must conclude that the proposed development would have significant negative impacts on the understood character and quality of the landscape in this area. The effect cannot be abated. The result is that the proposal directly conflicts with Policy NH-O-8 and Objective NH-P-12 of the Plan, in my opinion. It is clear that managing the landscape in a sustainable manner, protecting the character of the landscape, amenities and features of natural beauty and interest, preserving the character of this distinctive landscape framing Glenties, and protecting the prominent skyline and ridgelines around Glenties are not achieved by this development. Due to its prominence, scale and siting, it cannot be construed as just one more element in the landscape in this instance. It would have a very significant disproportionate landscape and visual effect, failing to relate to the functional nature of the landscape, failing to achieve visual integration, and failing to avoid spatial dominance of the hills on which it is set and of the town of Glenties. The landscape on which the proposed development is sited does not have the ability to visually absorb the proposed turbines.

In conclusion, I submit that the prominent ridges of Meenalargan, Straboy, Mulnamin and Derkbeg Hills are uninterrupted by any man-made interference in general. These hills are an integral part of the important natural amenities of Glenties and this part of south Donegal. The prominent siting of the proposed development would significantly puncture the quality of this natural landscape. It would produce unacceptable intrusive development and the inability of this landscape to in any way significantly reduce or mitigate the adverse visual impact arising indicates the inappropriate site selection for a development of this type and scale.

## 10.5 Ecological Impact

### 10.5.1 Background

*Third Party Concerns*

Many concerns have been raised by third parties and observers in relation to the potential fragmentation, damage and destruction of habitat and loss / displacement of protected and vulnerable species arising from the proposed development. I draw the attention of the Board to the submissions by the Irish Peatland Conservation Council, by Golden Eagle Trust and by Joseph and Declan Brennan in particular. Some of the principal issues raised are:

- The development cannot be supported as it is at the expense of the protection of internationally endangered habitats (threatened blanket bog) and the conservation of biodiversity.
- The proposal is adjacent to a large number of areas designated for nature conservation. This highlights the importance of the area for biodiversity and the need for it to be managed accordingly.
- There is a failure to demonstrate that there will not be an impact on Freshwater Pearl Mussel by way of runoff into the Shallogan and Stracashel Rivers upstream of the Owenea River.
- The development would adversely impact on the Golden Eagle project by the loss of Golden Eagle territory from the wind farm development. The use of Straboy Hill and Derkbeg Hill by Golden Eagles leads to the consequent sensitivity of the site as being 'high' and significance of impacts as being 'high'.
- Red Grouse is present on and adjacent to the site and is a Red Data Book species. This species has not been given due assessment by the planning authority. Furthermore, there are concerns for the Red Grouse habitat at Cró na mBraonáin on the northern side of Achla Mountain.

I further note the submissions by Peadar Ó Baoill and Cumann Iascairí Bhaile na Finne in relation to the potential adverse impacts on fish arising from the effects on water quality and the many other submissions relating to a wide range of species and habitats potentially affected by the proposed scheme.

*The Applicant's Ecological Assessment Methodology*

Appendix F of the EIS constitutes the applicant's ecological report associated with the application. A Natura Impact Statement is submitted as part of this appendix, along with a peat management plan, surface water management plan and an ecological site management plan. This was revised in response to the planning authority's request for further information.

At the Oral Hearing, the applicant submitted that the key aspects of the development that pertain to the ecological assessment are:

- Physical works and associated habitat removal and/or disturbance from the construction of turbines, access roads and substation, the use of borrow pits, etc.;
- Associated impacts on i) designated sites, ii) sensitive habitats and species or iii) on protected, rare or notable habitats, plants or animals using the site;
- Disturbance during construction works;
- The consequences of peat removal / risk of peat slippage;
- Potential changes to the site's hydrology and/or negative impacts on surface water quality and aquatic biodiversity in neighbouring waterbodies; and
- Displacement, disturbance and/or collision risk to bird or bat species using the site.

It is apparent that these key aspects directly relate to the principal issues of concern for the third parties and observers.

The applicant's survey work included the following:

The Habitat Survey produced a habitat map of the site which illustrates that the site is mostly upland blanket bog.

The Freshwater Ecology Surveys included assessment of watercourses within and adjacent to the study area, providing baseline data on water quality, fisheries and riparian habitat data, and a survey of Lough Nacroaghy. Reference was also made to a study by Dr. Evelyn Moorkens on Freshwater Pearl Mussel in the Owenea River. I note that Dr. Moorkens was not involved in the preparation of this planning application, had no involvement in the EIS, was not asked to make to make any assessment of the potential environmental impact of the proposed development on freshwater pearl mussels, and did not look at any plan or proposed mitigation measures. (See Report of Oral Hearing).

The assessment of impact on Birds is detailed in Chapter 3 of the ecological impact assessment. The applicant's submission to the Hearing was that the bird surveys undertaken were designed with the aims of assessing the breeding and wintering bird populations present in the area and to evaluate their conservation importance, assessing the usage of the site by raptors and other birds potentially at risk, considering the degree to which Golden Eagle are utilising the site and environs, considering the distribution of designated sites and whether birds of conservation concern are listed as qualifying interests for Natura 2000 sites, considering if the site may lie on flight paths of importance, and considering if the site or its environs support any rare bird species.

The bird surveys undertaken were the subject of extensive consideration at the Hearing and will be discussed in detail later in this assessment.

### 10.5.2 Natura 2000 Sites

Natura 2000 sites, i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), are of European importance, designated to protect biodiversity. A total of 12 Natura 2000 sites are located within 10km of the proposed site. These are:

West of Ardara / Maas Road SAC
Lough Nillan Bog SAC
Lough Nillan Bog SPA
River Finn SAC
Glenveagh National Park SPA
Cloghernagore Bog and Glenveagh National Park SAC
Coolvoy Bog SAC
Gannivegil Bog SAC
Meenaguse Scragh SAC
Meenaguse/Ardbane Bog SAC
Sheskinmore Lough SPA
Inishkeel SPA

Some of these sites have little or no ecological connectivity with the site. It was, therefore, considered reasonable by the applicant to conclude that impacts arising from the proposed development with the potential on those sites conservation objectives are not possible.

The following cSACs considered to have potential connectivity with the appeal site are:

*West of Ardara / Maas Road SAC*

The nearest parts of this extensive cSAC are located 900m south-east of the site and 1.9km north-west of the site. It includes the Owenea river system. Its special conservation interests include blanket bog, wet heath, oligotrophic lakes, freshwater pearl mussel, otter and Atlantic salmon. The conservation area is also known to support nationally important numbers of Eider and is important for Merlin, Peregrine Falcon and Hen Harrier, which are Annex I species in the Birds Directive.

*Gannivegil Bog cSAC*

Gannivegil Bog cSAC is located 3.3km to the north of the site. Its special conservation interests are blanket bog, wet heath, and oligotrophic lakes. Winter feeding sites for Greenland White-fronted Goose occur to the north and south of Lough Gannivegil. Red Grouse occurs within the site and Golden Plover are thought to breed in the area.

*Lough Nillan Bog cSAC*

This bog is located 3.6km to the south of the site and its special conservation interests are blanket bog and oligotrophic lakes.

*River Finn SAC*

This conservation site lies 4.9km north-east of the site. Its special conservation interests include blanket bog, oligotrophic lakes, wet heath, and Atlantic salmon. It also supports Red listed Red Grouse and Ring Ousel. Golden Plover, Peregrine Falcon and Merlin breed in upland areas of the site.

The following SPAs are in the wider environs:

*Lough Nillan Bog SPA*

Lough Nillan Bog SPA is located 3.6km to the south of the site. It comprises an extensive complex of blanket bog, wet heath, lakes, rivers and streams. Its special conservation interests are Golden Plover (breeding), Merlin (breeding), Greenland White-fronted Goose (wintering), and Dunlin (breeding), each of which are listed on Annex I of the Birds Directive. Red Grouse, a Red Data Book species, is also resident.

*Derryveagh and Glendowan SPA*

This SPA is located 8.3km to the north-east of the site and its special conservation interests are Red-throated Diver (breeding), Peregrine (breeding) Merlin (breeding), Dunlin (breeding), and Golden Plover (breeding). Blanket bog and heath comprise the principal habitats of this site.

*Sheskinmore Lough SPA*

This SPA is located 9km to the west of the site and its special conservation interest is Greenland White-fronted Goose (wintering).

*Inishkeel SPA*

Inishkeel SPA is located 9.5km to the west of the site and its special conservation interest is Barnacle Goose (wintering).

### 10.5.3 Natural Heritage Areas (NHAs)

NHAs are designated to protect habitats, flora, fauna and geological sites of national importance. The following are noted in the general area in which the site is located:

Derkmore Wood Nature Reserve pNHA is submitted by the applicant to be located 500m to the north of the proposed site. This supports an area of oak-dominated semi-natural woodland.

Lough Finn pNHA is located 4km to the north-east of the site. This is an acid lake fringed by scrub and blanket bog that supports a population of Arctic charr.

Gallwollie Bog pNHA is located 4km to the north-west of the site and comprises blanket bog.

Meenmore West Bog pNHA is located 4.5km to the north-west of the site and comprises upland blanket bog.

### 10.5.4 Habitats at the Proposed Site

The applicant's habitats survey confirms that the site is dominated by a mosaic of upland blanket bog, wet heath over shallow peat and rock outcrops. Other habitats acknowledged to be within the site include poor fen and flush, upland acid grassland, eroding blanket bog, cutover bog, conifer plantation and wet grassland. The Board will note from Figure 2.2 of Appendix F that the majority of turbines are proposed to be sited on blanket bog, with a few proposed to be located on eroding blanket bog on Straboy and Meenalargan Hills. The peat disposal areas are also similarly to be sited primarily on blanket bog.

Waterbodies on the site include Lough Nacroaghy which is an acid oligotrophic lake, a dystrophic lake at the north-eastern end of the site between Derkbeg and Straboy Hills, and a number of streams that form tributaries of the Stracashel, Shallogan and Maas Rivers. Lough Nacroaghy is considered to correspond to the habitat '*oligotrophic to mesotrophic standing waters with vegetation of Littorelletalia uniflorae and/or of the Iseoto-Nanojuncetea* – 3130', which is a habitat listed on Annex I of the EU Habitats Directive. It is seen to potentially support good densities of small brown trout. A number of the streams throughout the site are also seen to have potential for salmonids. The EIS recognises that the smaller watercourses can act as conduits for pollution to downstream more sensitive watercourses.

### 10.5.5 Flora at the Proposed Site

Five plant species listed in the Red Data Book have been recorded from the 10 km grid square in which the site is located, namely heath cudweed, bog orchid, bird cherry, small white orchid, and Killarney fern. None of these species were recorded during the habitat surveys, although the applicant acknowledges that the time of year of the surveys would not have been suitable for detecting most of the species. The applicant acknowledges that

parts of the site have the potential to support bog orchid, Killarney fern, and heath cudweed.

### 10.5.6 Fauna at the Proposed Site

*Mammals*

Badgers were not identified within the site. While otter was not detected during the survey work, the applicant suggests that it may occasionally use the site for foraging. Red deer have been recorded on the site by Coillte and the applicant suggests that Sika deer may also be present in the locality. Neither was recorded during the applicant's survey work. In relation to bats, it is submitted that few buildings offer roost potential and that bat feeding potential lies along the local road to the south of the site and at forestry edges. Bat activity was recorded to the south of Straboy Hill.

Birds:

**Breeding**

A summary of the species found on the site during the survey in early July 2010 is presented in Table 3.12 of Appendix F of the EIS. Three Red Grouse were observed in two locations on the site.

**Wintering**

Thirteen species were recorded from the January, February and March 2011 surveys. Snipe and Golden Plover were recorded. The only raptor species recorded was Common Buzzard. Red Grouse was recorded at three locations. A summary of species found during the January transect survey is given in Table 3.13 of Appendix F of the EIS and for the February vantage point survey is given in Table 3.14.

The EIS notes also that during the course of survey work in March 2010 seven Red Grouse were recorded on the site. Snipe were flushed on the lower slopes of Derkbeg Hill. In addition, consultation with NPWS is recorded. Reference was made to records from the 10km grid square within which Straboy is located and include Red-throated Diver, Merlin, Golden Plover and Greenland White-fronted Goose, with Golden Eagle recorded as possible. Furthermore, it was stated that during the course of bat survey work in September, 2010, two Golden Eagles were recorded, one of which was flying over the southern part of the site and the other being outside the site boundary.

**Golden Eagle**

While Golden Eagle was recorded in September 2010, none were recorded during the course of Golden Eagle surveys that were undertaken in July, August and September 2011. Buzzards were the most commonly encountered bird of prey followed by Kestrel. Peregrine Falcon was also noted. Red Grouse were flushed on the way to vantage points.

*Amphibians, Reptiles and Invertebrates*

Abundant spawning common frog populations were recorded throughout the site during the habitat survey. The time of year of survey was unsuitable for a thorough assessment of terrestrial invertebrate populations on the site. The applicant suggests that species typical of upland blanket bog and associated habitats are likely to be present. It is submitted that the marsh fritillary butterfly, an Annex II species, is unlikely to be present on the site due to the low abundance of devil's bit scabious, its larval food plant. The site is also seen to contain suitable habitat to support common lizard.

*Aquatic Fauna*

The Owenea catchment is classified as an important system for Atlantic salmon and sea trout. It is recognised that, due to the connectivity of the Stracashel and Shallogan Rivers, salmon and sea trout may migrate upriver where suitable accessible spawning grounds exist. Salmonids are also noted as acting as hosts for freshwater pearl mussel larvae and are thus of considerable importance. The applicant submits that the upper reaches of the rivers within the site are unlikely to be used by Atlantic salmon or sea trout for spawning due to the predominantly shallow water and the limited distribution of hard substrates or presence of potential spawning gravels. The lower channel gradient areas within sections of streams on the site are seen to have potential for resident populations of small brown trout that would occupy the pools and deeper glide habitats.

There are no known records of freshwater pearl mussel in Lough Nacroaghy or the Shallogan, Stracashel and Maas Rivers. However, populations are known to be present in the Owenea River directly downstream of the confluence of the Stracashel River with the Owenea, approximately 3km downstream of the site.

### 10.5.7 Water Quality at and in the Vicinity of the Proposed Site

The applicant's physiochemical analysis noted:

- Two significant stream tributaries to the south and east of the site flow from Straboy Hill into the Shallogan River. Two large stream tributaries flow southwards from Meenalargan Hill on the western half of the site and are

tributaries of the Stracashel River. Two additional small stream tributaries flow westward from Meenalargan and Derk Beg Hills into the Maas River.

- Water chemistry analysis was conducted on the Shallogan, Stracashel and Maas River tributaries downstream of the site and from Lough Nacroaghy. The physiochemical testing found that all tributaries were in compliance with levels required under the Salmonid Water Regulations implementing the Freshwater Fish Directive (78/659/EEC) with one exception where the pH level was found to be very low and conductivity was significantly elevated.
- Dissolved oxygen levels were high in all watercourses surveyed, indicating that all of the surface waters have levels of oxygen present that are capable of supporting healthy salmonid populations.

Macro-invertebrate samples were analysed for the tributaries of the Stracashel, Shallogan and Maas Rivers. A littoral macro-invertebrate sample was also collected from within Lough Nacroaghy. The diversity of invertebrates was found to be generally low in the streams sampled. However, the species present were generally indicative of unpolluted water quality. The macro-invertebrate survey of Lough Nacroaghy recorded a total of 8 invertebrate families and indicated a moderate invertebrate diversity at the lake. The lake habitat as a whole was found to correspond to the EU Habitats Directive Annex I habitat '*oligotrophic to mesotrophic standing waters with vegetation of Littorelletalia uniflorae and/or of the Iseoto-Nanojuncetea* – 3130'.

Of the six sites analysed, it was found that all are either pristine or have light siltation and thus have no artificially elevated levels of silt. Of six watercourses analysed, two Maas River tributaries, the Lough Nacroaghy tributary and one of the Stracashel tributaries were found to be all within the thresholds specified in the Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009.

### 10.5.8 Applicant's Overall Site Evaluation

Overall, the site and its environs are considered by the applicant to be of National Importance for nature conservation. This results from the presence of ecological features such as extensive areas of habitats listed on Annex I of the Habitats Directive, presence of significant populations of freshwater pearl mussel downstream of the site, moderate to good potential for salmonid fish, and the dominance of the site by large tracts of semi-natural habitat.

### 10.5.9 The Potential Impacts

The potential impacts arising from the proposed development at its construction and operational phases are seen to include:

- Disturbance and removal of habitats by the construction of turbines and access roads and by the development of the peat repositories and borrow pits and associated drainage accommodation works;
- Drying out of bog;
- Sedimentation and pollution of watercourses and changes to the site's hydrology;
- Loss of and disturbance to fauna using the site;
- Collision of avian fauna; and
- Risk of peat slides.

### 10.5.10 The Proposed Mitigation

The following are some of the main mitigation measures proposed:

*Habitats and Flora*

The applicant has submitted an Ecological Site Management Plan and includes mitigation in the form of habitat protection, remediation works, and monitoring. These include the following:

- Provision of buffer zones bounding the access tracks and turbine areas,
- Holding areas for storage of machinery and construction materials,
- Location of peat repositories and some of the turbines to avoid impacts to sensitive locations,
- Use of upper layers of peat being removed for re-vegetation and capping,
- Trialling of different hydroseeding approaches,
- Floating roads on deep peat and designed road drainage methodology, and
- Maintenance of low intensity grazing levels during the operational phase.

*Mammals*

In addition to the above:

- Works and traffic movement during the construction phase to be carried out in daytime hours.

*Birds*

- A programme of ecological monitoring to be carried out by a suitably qualified specialist during construction and for a period following the commissioning of the development. This is to include breeding bird monitoring, a repeat of the Red-throated Diver surveys, winter bird monitoring, a pre-construction survey to quantify the number and distribution of Red Grouse on the site, and continuation of vantage point survey work focusing on Golden Eagle.

*Amphibians, Reptiles and Invertebrates*

- Rock extraction will not commence during the frog spawning season.
- Where avoidance is not possible frogs and spawn to be translocated.

*Water Quality and Aquatic Fauna*

- A contractor with experience of working with peat to be engaged for the construction works,
- A method statement for all earthworks to be provided by the contractor and this is to be informed by the Peat and Surface Water Management Plans that forms part of the planning application,
- Peat excavation not to be carried out during prolonged heavy rainfall events,
- Detailed methods provided in the Peat and Surface Water Management Plans on containing emergency peat spillage episodes.
- Temporary protective bunds to be placed outside of works areas in the vicinity of watercourses,
- Peat storage areas near watercourses to have clearly marked boundaries with minimum 20m buffer zones,
- Sedimentation ponds constructed adjacent to peat disposal areas to attenuate solids,
- SUDS methodologies applied for turbine sites,
- A method statement to be prepared for the construction of the culvert in the Stracashel tributary and the culvert to be fish passable.

### 10.5.11 The Natura Impact Statement

A description of the relevant Natura 2000 sites identified in the submitted Natura Impact Statement (NIS) is detailed above. The general conservation objectives for these sites are to maintain or restore the favourable conservation condition of the habitats and/or species listed as special conservation interests of the site.

The NIS notes that there would be no direct impact on any Natura 2000 sites as the proposed wind farm site is not within or adjacent to any such sites.

The primary sources of potential impact on Natura 2000 sites are seen as:

- Transfer of peat sediments and other construction-related pollutants via watercourses
- Disturbance or destruction of semi-natural habitats
- Disturbance or displacement of bird or other fauna populations during operation
- Risk of mortality via bird strike.

*Screening*

At the screening stage, the applicant determined that there is the potential for significant impacts from the proposed development for West of Ardara / Maas Road cSAC, Lough Nillan Bog SPA, Sheskinmore Lough SPA, Derryveagh and Glendowan Mountains SPA, and Inishkeel SPA. It was recognised that the appeal site is connected ecologically with the West of Ardara / Maas Road cSAC via tributaries of the Shallogan and Stracashel Rivers that flow through the site and that there is the potential for negative impacts on special conservation interests from peat sedimentation and other water quality impacts. The potential for impacts on the SPAs relate to impacts on bird populations that form conservation interests in the event birds from these sites use or pass through the proposed wind farm site.

The applicant determined, at the screening stage, that impacts on the other Natura 2000 sites (i.e. Lough Nillan Bog SAC, River Finn SAC, Cloghernagore Bog and Glenveagh National Park SAC, Coolvoy Bog SAC, Gannivegil Bog SAC, Meenaguse Scragh SAC, and Meenaguse/Ardbane Bog SAC) are not possible due to the lack of ecological connectivity to the proposed wind farm. Therefore, Appropriate Assessment was not undertaken for these sites.

I consider that the applicant's determination on screening out the aforementioned cSACs is acceptable for the reason given.

*Appropriate Assessment*

**West of Ardara / Maas Road cSAC**

The applicant submits that, in the absence of mitigation, the integrity of the site will be significantly reduced due to losses of freshwater pearl mussel populations, reduction in salmon spawning sites, and possible reductions in habitat quality for otter.

The mitigation measures to be put in place are:

- Changes in site layout to minimise water quality risks
- Use of an experienced contractor
- Preparation of Peat and Surface Water Management Plans
- Avoiding peat excavation during heavy rainfall
- Use of attenuation ponds and silt fences in the vicinity of peat excavation and disposal sites
- Restriction of storage of machinery and materials to hardstanding holding areas
- No storage on site of fuels and chemicals and refuelling of delivery vehicles at dedicated locations over concrete pads
- Cast-in-place concrete to be done in the dry in contained areas

- Use of floating roads in areas of deep peat
- Routine monitoring and maintenance of mitigation measures.

The applicant also notes that the Peat, Surface Water and Ecological Management Plans outline detailed methodologies and mitigation measures.

The applicant concludes that, with these proposed measures, significant impacts on the integrity of the cSAC are unlikely.

These conclusions will be subject to further consideration in my assessment below.

**The Special Protection Areas**

The applicant notes the operation of the wind farm has the potential to disturb a range of protected bird species including Golden Plover, Greenland White-fronted Goose, Merlin and Dunlin breeding, feeding or otherwise using the SPAs and that the turbines pose a risk of mortality by way of bird strike. The applicant considers the risks to be low because none of the birds that are of special conservation interest to the SPAs have been recorded using or overflying the wind farm site. Reference is made to the distance from sites to the wind farm. The avoidance behaviour of Golden Plover is referred to and it is concluded this suggests a low risk of collision due to distance from known breeding sites. The applicant acknowledges that Golden Eagle and Hen Harrier are the raptors at most risk of collision. Reference is made to research on Merlin suggesting a low collision risk. The likely flight path between Sheskinmore Lough and Lough Nillan Bog for Greenland White-fronted Goose is alluded to and it is suggested that this would be via the lowlands to the south and west of the wind farm site. It was submitted that Barnacle Goose is not known to overfly the Straboy site or the vicinity. In reference to Red-throated Diver, it was stated that the majority are known to be well to the north of the site. It was further noted that no Peregrine were observed at the site and it was submitted that Falcons from Derryveagh and Glendowan Mountains SPA are unlikely to be regular visitors to the site.

Due to these factors, the applicant has determined that the proposed development is highly unlikely to have a significant impact on the SPAs. It was further concluded that cumulative impacts on bird populations from other wind farms are also highly unlikely due to the very low usage of the site by sensitive bird species.

These conclusions will be subject to further consideration in my assessment below.

**Appropriate Assessment Conclusions**

The applicant concludes that, when the water quality mitigation measures are implemented, the chance of significant impacts on the integrity of West of Ardara / Maas Road cSAC will be highly unlikely. Any impacts from entry of peat sediments into local

watercourses, with proposed mitigation, are predicted to ensure they will remain local in scale. The predicted effects on the integrity of the cSAC are considered to be not significant.

Significant impacts on the integrity of the SPAs are seen to be not likely as the site is not used by bird populations that comprise the special conservation interests of the SPAs, including as a flight path between designated sites. The predicted effects on the integrity of the SPAs are considered to be not significant.

### 10.5.12 Ecological Assessment

My considerations on this issue are reviewed under the headings of Construction and Operational Phases.

**The Construction Phase**

Impacts on Habitats

As is evident from the extent of Natura 2000 sites and pNHAs in the vicinity of the site for the proposed wind farm, the first observation that can be made about the location is that this is a very significant ecologically valuable area, rich in biodiversity. The second and a most critical observation to make, and for the Board to note, is that many of the habitat types and species which comprise the special conservation interests of the above referenced Natura 2000 sites are also found on the appeal site, namely blanket bog, wet heath, and oligotrophic lakes,. I, therefore, draw a most important conclusion before moving into any detailed assessment, that being this site must be viewed as a 'Stepping Stone' site, i.e. an important link along the chain of designated sites in this area. This conclusion cannot go unmissed. It is, thus, my opinion that the details provided through the application itself, from the many field surveys and my own observations clearly show that there is distinctive ecological connectivity between the appeal site and designated conservation sites in this area, notably through the existence of the valuable habitats on the site, hydrological linkages between the site and West of Ardara / Maas Road cSAC, and use of the habitats on the site by protected species that are inter-dependent on the cSACs and SPAs in the environs and the appeal site itself. In my view, this is a classic case that demonstrates from the applicant's own findings that designated conservation sites do not function in isolation and that the role of 'stepping stone' sites, such as the appeal site, in terms of quality of habitat and its function in contributing towards sustaining flora and fauna of significant conservation value, form an essential component of the ecological value of this area and produce a richness of biodiversity upon which the quality of the designated conservation sites depend on.

With due regard to the above, it is essential to acknowledge the extent of important habitats within the site itself. Firstly, it must be noted that the site on which most of the

development is to be constructed comprises upland blanket bog. Some has naturally eroded, some at the southern end of the site is cutover bog, some has conifer plantation cover, and some is recovering blanket bog. However, there are many parts of the site on which there is intact blanket bog. This is an Annex I habitat required to be protected. For example, this intact habitat exists at the locations for turbines T11, T14, T18, T19 and T25 and is acknowledged as such by the applicant. What again must not go unmissed is that this observation relates to the actual locations for the development works and it is apparent that these locations for development works are each sited within wider areas where intact blanket bog prevails. The implications of the works, therefore, go well beyond the site of an individual piece of infrastructure proposed to be installed at these locations. Other internationally important habitats within the site include Lough Nacroaghy, which is an acid oligotrophic lake and which corresponds to the habitat '*oligotrophic to mesotrophic standing waters with vegetation of Littorelletalia uniflorae and/or of the Iseoto-Nanojuncetea*, i.e. an Annex I habitat. There is also the dystrophic lake at the north-eastern end of the site between Derkbeg and Straboy Hills and the wet heath that prevails primarily along the west side of the site. Changes to the hydrological regime, introduction of increased volumes of peat-laden runoff, etc. can each have significantly detrimental impacts for these important Annex I habitats. Habitat loss, damage and fragmentation can readily result from proceeding with the development. While the applicant submits that the infrastructure itself will result in the removal of approximately 5.2 hectares of the mosaic of blanket bog, heath, exposed rock and flush and that this will be replaced by artificial surfaces (representing under 1.6% of the total area of this habitat type in the study area), it is apparent that the effect of the development extends far beyond that small footprint of development. Accepting the applicant's determination in isolation ignores the inter-relationship between the works and its wider environs.

Looking then to the effects of the development on habitats at the construction stage, I note the following:

- The proposed development will directly reduce important habitat areas by direct loss of habitat from the proposed works. The applicant estimates that development of the road construction within the site will generate 49,552$m^3$ of peat and that the volume of peat to be generated from cranage areas and foundation construction will be 20,790$m^3$.
- Habitat fragmentation will prevail by the turbine construction sites and the linkage between them provided by the road network. The siting of turbines, such as T20, T21 and T22, and the development of the road network across many parts of the site where deep peat exists will have significant hydrological impacts for the functioning of this important habitat. Such development must distort the naturally sustaining qualities of these habitats. These works evidently disrupt the key processes, structure and function of this naturally sustaining habitat.
- The development of the turbines and road infrastructure invariably bring important adverse changes to the key hydrological elements of the site in terms of

water quality and impacts on the hydrological regime. The two important lakes on this site are to be surrounded by roads and turbines. The extent of peat-laden runoff will introduce serious threats to water quality and the natural characteristics of these waterbodies. Furthermore, the threat to the streams and drainage occurring throughout the site by excavation also pose very serious threats to waterbodies in the immediate environs of this site which form part of the Owenea River system. As detailed earlier, many of these streams form tributaries of the Shallogan and Stracashel Rivers.

- The development of peat repositories directly on blanket bog has significant impact for the existing habitats and for their natural recovery potential. Their siting, whereby each is subdivided by drainage ditches, poses significant potential for increased siltation and sedimentation for the hydrological regime at this location. Clearly, peat slippage poses serious risk to habitats. This is a matter discussed in another part of this assessment. Suffice to indicate at this stage that this component of the proposed development is a very great health, safety and environmental risk.
- The consequences of the above considerations are that the impact of the proposed development will result in significant disruption to species dependent upon valuable habitats found within this site.

In conclusion, I note a most complex arrangement of avoidance and mitigation measures developed by the applicant to seek to address the serious threat the proposed development poses to the site and the designated conservation areas in the environs to which it has ecological connectivity. The necessity for this complexity in itself must flag serious concerns about the appropriateness of this development at this location. Developing this array of mitigation measures and successfully implementing them is in question. I say this because of the relative uniqueness of many of the complex measures intended to be imposed and their inter-dependence. This culminates in the necessity to store very significant volumes of peat on slopes on bog on the site, the development of a road network across extensive areas of deep blanket bog, the provision of floating roads in sensitive locations, the complex provisions proposed to transfer surface water runoff across roads by carefully piping flow, etc. These arrangements require to be maintained and, most importantly, the vast array of measures to be put in place requires to be monitored not only at the construction stage but throughout the life of the wind farm development. A further relevant concern is the indecisiveness or lack of clarity on relevant mitigation and design measures that can have very significant impacts on sustaining the quality of the natural habitats on this site. This relates for example to changes to the peat repository design as is detailed in another part of this assessment, whereby design is undergoing revision and change as the planning application process has proceeded. It also relates to the applicant's strategy for the use of peat turves to effectively 'cap' different parts of the site and to apply a range of other measures to 'cap' filled areas (e.g. hydroseeding) which have not been demonstrated to be realistic options for bog recovery. Avoidance of detrimental effects arising from the proposed development for the ecological value of the appeal site and for the West of Ardara / Maas

Road cSAC is dependent upon the successful implementation of the wide range of mitigation measures. This success derives from inter-dependence and inter-relationships in their functioning. I am firmly of the view that destruction, loss, reduction and fragmentation of habitat on this site and the changes in the key indicators of conservation value by the reduction of water quality will be a reality in the pursuit of the proposed development and this poses a significant threat to the cSAC in the environs of this site.

Impacts on Freshwater Ecology

The Owenea River catchment is considered very important because of the presence of Freshwater Pearl Mussel and Atlantic salmon, both of which are Annex II species listed in the EU Habitats Directive (92/43/EEC). The catchment also forms part of the West of Ardara / Maas Road cSAC and its special conservation interests also include otter. The Shallogan and Stracashel Rivers form part of its catchment. There are several streams on the appeal site that comprise tributaries to these rivers. The impacts arising from peat sedimentation and pollution associated with the proposed development could potentially result in significant impacts for these watercourses and ultimately impact on the Annex II species. I draw the attention of the Board to the most notable watercourses that traverse the site as follows:

- There is a stream proposed to be crossed by the access track from Borrow Pit 4 to turbines T24 and T25. This is a tributary of the Stracashel River and is the main outflow from Lough Nacroaghy. It is a stream known to have good potential for salmonids.
- Borrow Pit 4 is within 50m of a tributary of the Stracashel River. The land slopes towards the stream from the pit.
- A small stream feeds into the eastern end of Lough Nacroaghy where the access track to T17 runs and is recognised as being of importance to spawning salmonids. The lake gravels are very clean in this area.
- A drainage channel bisects Peat Repository Area 1 and alternates between overground and underground flow. Its downstream connectivity is unclear but it is recognised as having potential connectivity to a tributary of the Stracashel River.
- A drainage channel bisects Peat Repository Area 2 and it has connectivity to a tributary of the Shallogan River.
- A drainage channel is located downslope of the proposed access track to T10 and connects to a tributary of the Shallogan River.
- A stream runs within 100m of proposed T6 and flows into a tributary of the Stracashel River.

It is estimated that excavated peat associated with the development would total approximately 73,000$m^3$. Clearly, in the event of prolonged periods of rainfall and the generation of surface water runoff, the potential for peat sediment entering waterbodies is significant. The potential effects arising from the peat storage areas, from the excavated

areas, side-casting and provision of the internal road network are evident. Clearly at the construction phase the significant volumes of concrete proposed to be used for foundations and hardstanding areas, as well as spillages from hydrocarbons, also have the potential to enter surface waters. Thus, the proposed development poses significant risks to freshwater habitats and their associated ecology. The reliability, dependability, and continuity of the array of measures proposed to prevent the undermining of water quality are in question and this poses serious risks to freshwater quality. I submit that the sensitivity of the freshwater ecology should not be subjected to the hazard potential arising from this development, not alone because of the adverse effects for water quality on the site, but primarily because of the effects downstream and the consequential effects for the Owenea River system.

It is my submission to the Board that the potential on this site for peat slippage and sedimentation of sensitive watercourses poses a serious risk to the habitat of the freshwater pearl mussel in the Owenea catchment. The Board will note the effects that resulted from the slippage of peat at the Derrybrien wind farm in County Galway. Displaced peat entering watercourses can travel several kilometres. The applicant's NIS acknowledges that entry of peat sediments into local watercourses is possible. I submit to the Board that the triggering of serious damage to watercourses by peat slippage, particularly from the repositories, by the decline in maintenance of the wide range of necessary drainage measures to curb impacts on water quality on this site over time, the erosion of excavated areas, and by the failure to stabilise displaced peat on the many significant slopes on this site together create a notable hazard to water quality.

Ireland is estimated to hold 46% of all freshwater pearl mussels in the European Union. The Owenea catchment forms a critical component of the natural habitat for the pearl mussel in the State. Like most other river catchments where it is found in Ireland, its population is not in a favourable condition. Indeed, the conservation status of the pearl mussel is very poor for the Owenea. This is a most important reason for conserving and protecting this species. At present it cannot sustain juvenile recruitment. The Draft Freshwater Pearl Mussel Owenea Sub-Basin Management Plan notes that monitoring shows that silt and nutrients are the major negative influence on the catchment's population. The improvements needed for the catchment, as identified in the Sub-Basin Management Plan, are to restore juvenile habitats to appropriate condition by simultaneously reducing nutrient and silt inputs to the river. The Plan's assessment demonstrates that significant siltation is an issue with the Stracashel and Shallogan Rivers. The Plan also notes that wind farms within the catchment are a cause for concern and that there are potential significant risks from such developments. Site clearance works associated with wind farm installations are noted as a cause for concern. In reference to priority measures, the Plan refers to some applications for wind farms comprising a large number of turbines and that the location of these turbines, particularly where they are located on peat and peaty soils, is the major concern. Finally, I note that the Plan identifies the key issues for the future management of the river catchment and these include minimisation of sediment losses arising from site clearance works for

development, minimisation of sediment and nutrient losses arising from land use change, and control of hydro-morphological pressures, including drainage, drainage maintenance, bank stabilisation works, etc. It is my submission, therefore, that the introduction of new sources of siltation into the on-site watercourses, moving into the Shallogan and Stracashel Rivers and ultimately into the Owenea itself, could not be construed as complying with the measures proposed to be taken in the Sub-Basin Plan which seek to reduce sources of siltation and ultimately to improve water quality with the objective of improving the status of freshwater pearl mussel.

The reliance on water quality for the survival and improvement in status of freshwater pearl mussel in the Owenea River catchment is inter-related with a dependence on salmonid fish hosts. Given the sensitivity of this location and the acknowledged high water quality within the site, one would question the acceptance of the principle of a wind farm here. Given the high rainfall prevalent at this location, the proposed excavation of peat on this site and its storage will alter the hydrological regime and will increase water flow from the site by the development and invariably will lead to peat silt discharging to the on-site watercourses. The movement of this silt to the sensitive locations within the river system where the pearl mussel is known to exist can readily occur. In addition, the settlement on substrates on the site, such as on spawning areas in the waterbodies, and the resulting changes to habitat, can affect key elements of the catchment and affect the quality of the habitat for salmonids. Similarly, adverse impact on water quality affects the natural habitat for otter. The ability for any or each of the carefully designed drainage measures and the peat repositories to fail is notable. Clogging of drainage channels and piping under roads, overtopping of fencing during periods of heavy rainfall, etc. will result from development on the slopes at this site. As a consequence, I am not satisfied that the mitigation measures posed eliminate the serious risk to freshwater ecology that results from the development of this scheme. Increases in fine sediment movement through the streams, tributaries and the Owenea River as a result of this significant source being created at Straboy will produce negative impacts by clogging previously clean gravels and thus undermining freshwater ecology in this area. There can be no reliance on, or easy acceptance of, the applicant's conclusion that entry of peat sediments into local watercourses will, with the complex range of mitigation in place, keep such impacts local.

Impacts on Fauna

I have noted above that the habitats on the appeal site comprise primarily blanket bog and some important waterbodies. I repeat again that these habitats reflect many of the habitats found in the designated conservation areas in the wider area and, thus, point to the likely value of the site in supporting important fauna. The habitats are known to support, and have the potential to support, salmonids (Annex II), otter (Annex II), an abundance of common frog (protected under the Wildlife Act along with their breeding places), Irish hare (protected under the Wildlife Act), red deer (protected under the Wildlife Act), sika

deer (protected under the Wildlife Act), Natterer's and Common pipistrelle bats, and a wide range of birds, many of which are protected species. I have referred to impacts on freshwater ecology by the proposed works and I do not propose to consider further the likely impacts on salmonids. In relation to the remaining fauna, the most significant impacts at the construction stage of the proposed development would be disturbance and loss of habitat. This can ultimately lead to avoidance of the site and to biodiversity loss and can affect feeding and breeding on this site.

With regard to otter, the impacts on water quality and changes in freshwater ecology at the construction phase invariably will have consequential impacts on the potential use of the site for foraging. With regard to impacts on deer, I note that the removal of evergreen forestry and the construction activities associated with the proposed infrastructure on the site would result in avoidance of the site during this period. The construction activities would also result in damage to spawning grounds for frogs in the dystrophic lake, the abandoned quarry and in some ephemeral ponds. Bat activity would also be restricted during the construction phase. Similarly for bird activity at the site, this would be significantly curtailed during the construction phase and may result in permanent displacement for some species.

I accept that the construction stage is short-lived. I also note that the applicant proposes a wide range of mitigation measures that includes avoiding frog spawning areas during breeding season, containing construction work areas, and seeking to restore peatland habitats. It is apparent, however, that the knock-on effects from disturbance through excavation works, rock breaking, etc., leading to avoidance, can and will have longer term impacts for some mammals on the site, ultimately resulting in their displacement from the site altogether.

Impacts on Flora

I have noted earlier that five plant species listed in the Red Data Book have been recorded from the 10 km grid square in which the site is located and that none of these species were recorded during the habitat surveys. The applicant acknowledges that parts of the site have the potential to support bog orchid, Killarney fern, and heath cudweed. The applicant notes that the time of year when surveys were undertaken was not suitable for detecting most of these plant species. It can only be concluded that this survey deficiency proves to be a further inadequacy of information provided in the submitted EIS.

**The Operational Phase**

Impacts on Hydrology

The issue of maintenance of hydrological connectivity within the site will be a very significant concern arising from the proposed development. There is a complexity of measures proposed to seek to ensure the adequacy of such an outcome. Reference has been made within this assessment to the measures to maintain flows across the road network and to the extent of drainage measures throughout. There can be no doubt that the hydrological regime must change as a result of the imposition of the development on the site. The extent of the ongoing necessary maintenance of the drainage measures in such a sensitive location is a particular concern that I have with the proposed development. The uncertainty associated with ensuring this must prevail upon the acceptability of the proposed development given the likely adverse impact for the watercourses on the site, the inter-connectivity with the Owenea catchment and the consequences for the aquatic habitats and species therein of international importance. The continual emphasis on monitoring during the construction phase as implied in the Ecological, Peat and Surface Water Management Plans and the lack of any coherent strategy into the future in recognition of the very particular sensitivity of this site for the wider environs does not bode well for the acceptance of the proposed scheme.

The blanket bogland and flushes on the site will continue to undergo hydrological changes as the operation of the proposed development proceeds. The drainage from access roads and other infrastructure will continue to operate as channels for surface water runoff and the changes will prevent the natural flow within the site, acting as barriers to the natural movement of water within the site. This will result in drying out of sections of bog and the adjoining wetland areas. Once again, it is pertinent to note that the effects of such drainage changes culminates in impacts on aquatic ecology as changes to the composition of runoff, volumes, and points of discharge alter.

The potential for peat slides is a very significant issue, with potentially hugely detrimental impacts for habitats and the established hydrological regime. This is discussed in detail in another part of the overall assessment of the proposed development but it must be repeated that there are serious concerns with the proposed peat storage arrangements.

Impacts on Fauna

The operation of the turbines at Straboy would undoubtedly alter the way mammals utilise the site. This would affect the use of the site for foraging and breeding. There is also clearly the potential for bird collision with rotors. I propose to deal with the impact on birds separately as I note that most of the detailed submissions to the Board from all parties to the appeal focus on a number of bird species in particular.

*Mammals*

The potential impacts for mammals at the operational stage can result from disturbance by the turbine operations, collision, loss of habitat, hydrological changes, impediment to fish passage, pollution, and peat slide.

With regard to disturbance by the operation of turbines, it is acknowledged that this is likely to be less than the more substantive disturbance during the construction phase, albeit that the construction phase itself may have resulted in displacement of some species. Bats are most likely the species to be most affected as they are likely to avoid the open expanses of the site for feeding. I accept, however, that bat activity is liable to be significantly less in the open upland areas than in the areas at the southern end of the site where watercourses and forestry edges prevail. There is, however, limited understanding of the prevalence of bat activity around Lough Nacroaghy and the consequential impacts here. Generally, where mammals remain, it is accepted that they are likely to become accustomed to the effects of the operation of the turbines and impacts on these species is not likely to be significant.

In relation to potential collision, again it is bats that are most likely to be most affected. The applicant submits that the habitats on the appeal site are suboptimal for bat foraging, with little woodland or tree cover in the vicinity of the turbines, and that the behaviour of species known to occur in this location together demonstrate the likelihood of collision to be low. While these conclusions can be viewed as reasonable, I note the bat survey undertaken was limited and the applicant acknowledges that there was no evaluation of bat activity during the early part of the year and no bat detector examination on the upland parts of the site in late September. This can reasonably be seen to be a further deficiency in the EIS. It reinforces my views on the limited understanding of bat activity on this site and the potential around the Lough Nacroaghy area where there are structures and tree cover alongside the waterbody that is proposed to be framed by turbines.

With regard to loss of habitat, for those species that remain and become accustomed to the operations, habitats will be reduced by the introduction of the infrastructure but the amount lost by the footprint of development could in overall terms be viewed as not significant. The impact obviously extends beyond the footprint of the development however.

The hydrological changes have been discussed above and are further detailed under the issue of peat storage.

In relation to impacts on fish passage, I note the proposed development of the road network, its range of crossings over watercourses on the site, and imposition of other infrastructure. Evidently, such changes can result in curbing fish movement, creating blockages, etc. and the development can result in morphological changes for waterbodies.

A tributary of the Stracashel River on the site is proposed to be crossed by the road network for example. Measures are proposed to mitigate impact.

When considering the issue of pollution in the context of this part of the assessment, one is considering pollution from accidental spillage. During the operational phase this would be considered to be insignificant.

The matter of peat slides has been discussed in detail in another part of this assessment, with the potential effects on downstream aquatic ecology being significant.

In conclusion, I note the applicant's mitigation measures and in particular the Ecological, Surface Water and Peat Management Plans. I further note the proposed remediation plans and the proposals to seek to regenerate bogland on the site. The hydrological changes remain a significant concern and remediation in the form of habitat regeneration is very much unproven, likely unattainable and will result in habitat change. Displacement will result and species will be lost. I accept also that adaptability can accrue for many species that exist on the site. The long-term effects, however, on salmonids, freshwater pearl mussel, and other species dependent on high water quality will be significant.

*Birds*

The applicant determines the site to be of 'Medium Sensitivity' for birds on the basis of it supporting red listed species such as Red Grouse and Peregrine Falcon. I note the birds observed at and in the vicinity of the Straboy site over the course of various surveys. These included:

Golden Eagle (Annex I)
Golden Plover (Annex I)
Peregrine Falcon (Annex I)
Red Grouse (Red Listed)
Raven (Red Listed)
Kestrel (Amber Listed)
Common Sandpiper (Amber listed)
Little Grebe (Amber listed)
Skylark (Amber listed)
Snipe (Amber listed)
Wheater (Amber listed)

Those other Annex I species known from records held by NPWS to be recorded from the 10km grid square within which the appeal site is located include Red-throated Diver, Merlin, and Greenland White-fronted Goose.

The Board will note that the special conservation interests of those SPAs in the environs of this site which could be determined to have ecological connectivity with the appeal site include Golden Plover, Merlin and Peregrine. The West of Ardara / Maas Road cSAC is also considered to be important for bird species listed on Annex I of the Birds Directive such as Peregrine Falcon and Merlin. Red Grouse are also known to occur within several of the designated conservation sites.

In acknowledging the value of this location and its environs to these important bird species, I wish to focus first on the submissions by The Golden Eagle Trust, then on those submissions on Red Grouse and then allude to other bird species potentially affected by the proposed development. Golden Eagle and Red Grouse are the species that have raised most concern in the third party submissions.

**The Golden Eagle Trust**

The Golden Eagle Trust appealed the decision of the planning authority to grant permission for the proposed development. It is noted that there is a pair of territorial eagles in the area. It is submitted that, as a result, the sensitivity of the area for birds should be deemed as 'high' because Golden Eagles are an ecologically sensitive species and due to loss or displacement of habitat by the use of the site as a wind farm. It is further noted from the original submission to the planning authority that four sightings of Golden Eagle were made and that it can be confirmed that Golden Eagle do use Straboy Hill and Derkbeg Hill. It is also noted that the appeal site contains Irish Hare and Red Grouse which the eagles feed on. The appellant acknowledges that improving the habitat for Red Grouse within the wind farm development site, while not directly benefiting Golden Eagle at the site, could increase prey species that could help improve local populations outside of the wind farm footprint in time.

I note the appellant's submissions do not focus solely on Golden Eagle but also on the range of protected bird species potentially on the site at Straboy. Mr. O'Toole at the Oral Hearing noted the European Court of Justice has expressed concerns with Ireland about the lack of steps to avoid the pollution or deterioration of habitats of Annex I species outside of SPAs. Furthermore, it is argued that, because of the poor bird survey methodologies adopted (primarily the lack of any breeding bird survey), the evaluation of the importance of the site is based on incomplete data and does not comply with international best practice. It is submitted that the survey undertaken in July does not comply with the standard breeding season of April-June. It is argued that applying industry norms regarding breeding bird survey dates is a fundamental part of good practice ecological assessment and that this was not adhered to. The methodologies employed in the vantage point surveys (VPS) for Golden Eagle were also challenged. It is submitted that, as the survey methodology employed by the applicant was inappropriate, one cannot assume Golden Eagle were absent from the site at Straboy. Mr. O'Toole noted that if key extant Annex I species are not recorded in the breeding season, the results of any survey will not reflect the true sensitivity of the receiving environment and that

resultant ecological impact assessment is worthless if based on non-standardised or incomplete results. In addition to the concerns in relation to Golden Eagle, reference was made to the possibility of Merlin on the site. It is submitted that none of the bird survey work undertaken would have enabled the applicant to properly monitor Merlin during the breeding season. I note that the submission of the Department of Arts, Heritage and the Gaeltacht expressed concern in its original submission to the planning authority that the proposed development could potentially damage/destroy populations of breeding and migratory bird species including Merlin. Mr. O'Toole is of the view that the Annex I species that could potentially breed or forage in Straboy include Golden Eagle, Peregrine, Merlin, and Golden Plover and notes that Red Grouse and Curlew could potentially be present. The Department are also of that view that several Annex I species and other red listed bird species could breed or forage on the site. It is apparent from the survey findings that most of these important species have indeed been viewed at the site.

It is the applicant's submission that Golden Eagle may occasionally overfly the appeal site. It is maintained that there is the absence of suitable nesting habitat on the site. It is noted that operational impacts can result from displacement, noise or disturbance and through collision with turbines. It is submitted that general consensus in the literature is that Golden Eagle tend to avoid wind farms and that, due to the lack of nesting habitat and low level of current usage of the site, the proposed scheme would not negatively impact Golden Eagle populations. It is accepted that monitoring work focusing on Golden Eagle would be recommended because of the expected pattern of increase in numbers and distribution as the reintroduction programme progresses and the probability of re-occupation of the Bluestack Mountains as a breeding site occurs. Contrary to the position of The Golden Eagle Trust, the applicant is of the view that habitat enhancement to increase populations of Red Grouse and Irish Hare within the site is not recommended as these are key prey species of the Golden Eagle and that there should be no change in prey density which might attract eagles into the area. The applicant submitted to the Hearing that it would support the examination of options to enhance areas of habitat remote from Straboy to provide suitable habitat for Red Grouse and Irish Hare in order to provide suitable foraging habitat for Golden Eagle. In response to the issue of breeding bird surveys, the applicant acknowledged that such surveys were not carried out on the site between April and June but it was argued that a significant amount of bird survey was carried out at other times. It was further submitted that many of the breeding birds that use the site would still have been present at the time of the surveys in July 2010.

In considering the issues raised here, I submit the following:

- Golden Eagles have been recorded using Straboy and Derkbeg Hills.
- Golden Eagles have been observed on a number of occasions flying over the site.
- A nesting pair of Golden Eagles has been recorded in the wider environs of this area.

With due regard to this, it is reasonable to conclude that this Annex I species can be impacted by the development of a wind farm on this site. The site is also known to provide a habitat which supports Red Grouse and Irish Hare, i.e. important prey for Golden Eagle. With this understanding, I must firstly make the observation that, despite the knowledge of the reintroduction programme occurring in this area and of the use of this area by Golden Eagles, the EIS was scant on information on this important species and survey work was deficient. Ultimately, very limited consideration was given in the submitted EIS. This deficiency was sought to be rectified by the submission of further information.

A second issue that must be raised is the clear division between the applicant and the appellant on how the site should be developed in the event of the wind farm proceeding at this location. It is important to note that the appellant is not outrightly seeking the rejection of the proposal based upon the potential impact on Golden Eagle. The applicant is opposed to enhancing the habitat for Red Grouse and Irish Hare, those being the prey of the Golden Eagle available on this site, clearly because it seeks to reduce the potential collision impacts arising for Golden Eagle. Thus, I would suggest that the applicant effectively seeks to devalue the site as an important habitat for Golden Eagle and, indeed, to curb the evident importance of the site for Red Grouse and Irish Hare. The impact of the development would, therefore, result in the undermining of the spread of these species in this area. It could not in any way be seen as protecting these species and promoting the conservation status of such threatened species. While doing so, it is further apparent that the applicant proposes no compensatory measures for the devaluation of this site. Suggesting the possible examination of options to enhance areas of habitat remote from Straboy to provide suitable habitat for Red Grouse and Irish Hare does not add up to be any mitigation for the loss accruing. It is clear, therefore, that the effects on Golden Eagle resulting from the development will be adverse and that the natural attractiveness of the site at Derkbeg and Straboy Hills for this species is to be eliminated by the proposal and at the same time the potential to improve the populations of its prey on the site is to be actively discouraged.

In relation to the issue of inadequacy of Vantage Point Surveys undertaken by the applicant and the concerns of The Golden Eagle Trust, I acknowledge that the appellant has raised inadequacies in the methodologies employed and has demonstrated in the written and oral submissions where the shortfalls lie. I also acknowledge the difficulty of the terrain in undertaking these surveys. The principle of the need for increased numbers of vantage points to provide for an adequate survey in such conditions, due to the limited vantage point coverage in parts of the site, is accepted.

With regard to the appellant's concerns in relation to breeding bird surveys, there is validity to this issue of principle. The applicant may argue that a lot of survey work was undertaken. However, during the breeding season of April-June, breeding bird survey work was not undertaken. This is a very significant shortfall in surveying on a site on which several bird species of significant conservation value are known to occur. The EIS

is again deficient and incomplete for the shortfall on such information. There can be no reasonable reliability on survey work carried out outside of the standard breeding bird season on this site. As a minimum, I must conclude that the carrying out of a breeding bird survey during the non-breeding season in July is unacceptable and does not allow for a true understanding of the range of important bird species that may occur at this site. In the knowledge of the Annex I and red listed species that are evident on the site and the occurrence of Annex I species in the wider environs within nearby SPAs and cSAC, one would expect that a proper breeding bird survey would have been carried out. Without this one cannot readily determine that species such as Peregrine, Merlin, Golden Plover, Hen Harrier, Red Grouse and Curlew do not breed at this site.

**Red Grouse**

Some of the most informed submissions to the appeal process on this species were those from Joseph and Declan Brennan, who manage Cró na mBraonáin Habitat and Red Grouse Sanctuary at Aghla to the east of the proposed site. This is a project that is supported by the Heritage Council and its value is acknowledged in the current Donegal County Development Plan. The appellants have placed emphasis on the need to prevent fragmentation and destruction of habitats for Red Grouse. The sanctuary is viewed as not existing in isolation and it is submitted that the Straboy site forms a valuable part of the habitat in the area. The lack of reference to the sanctuary in the application and to the existence of Red Grouse on the appeal site is alluded to. The connectivity between both sites for Red Grouse is acknowledged. It is argued that the development of a wind farm at Straboy will decimate the population of Red Grouse on the site and this will have a massive impact on the Red Grouse Sanctuary. The appellant also notes the precedent set by the local authority in its decision on a wind farm application nearby at Tangaveane (Ref. 10/30263) and by the Board under Appeal Ref. PL 61.229362, where a smaller scale wind farm development with much less Red Grouse recorded have been refused.

While referenced relatively little in the submitted EIS, the applicant has submitted to the Oral Hearing that Straboy Hill supports good numbers of Red Grouse and has suggested that this is the most notable bird species present on the site. It is submitted that there is limited potential for grouse movements between Aghla and Straboy given the distance involved and the largely sedentary nature of the species. Reference is made to studies showing no evidence to changes in distribution or abundance of Red Grouse related to wind farm infrastructure and that densities recover in the first year after construction of a wind farm. I note again that habitat enhancement for this species on this site is not supported by the applicant. As part of its bird monitoring proposals, the applicant proposes a pre-construction survey to quantify the number and distribution of Red Grouse on the site. This is proposed to form the basis of post-construction monitoring to ensure appropriate management of the species during the lifetime of the wind farm. Furthermore, the applicant has submitted that Red Grouse are generally accepted as not being at a high risk of collision as they fly low over ground and due to the height of the rotating blades above ground. In conclusion, I note that the direct habitat loss for Red Grouse

encapsulating the footprint of the proposed infrastructure is considered by the applicant to be of low magnitude.

In addressing concerns relating to this Red listed bird species, I must firstly make the point to the Board that Red Grouse are a common occurrence on the appeal site at Straboy. They have been frequently sighted and flushed. The isolated nature of the site and the blanket bog habitat, with the expanse of heather and wet flushes on this site, sustains their presence here. This has been clearly demonstrated in the survey work undertaken, much of which was recorded from surveys not targeting this species. Clearly, the fragmentation and interruption to this habitat by the development of the wind farm at Straboy must undermine the prevalence of this species on the site and must cause disturbance. This fragmentation in turn must result in the local populations of Red Grouse in this area being put at risk as opportunity for populations to re-establish decline. Secondly, I must indicate that there was little reference to Red Grouse in the EIS despite its Red listed status and widespread knowledge of its occurrence on the site. I acknowledge also that there was no dedicated survey of this species undertaken. Thirdly, it is even more extraordinary that there was no assessment of the impact on Cró na mBraonáin given its proximity to the appeal site and the significant potential connectivity between the sites. The value of the Cró na mBraonáin sanctuary cannot be understated. I note importantly for the Board that its value is acknowledged in the current Donegal County Development Plan wherein there is a specific policy (NH-P-15) which is to ensure the protection of Cró na mBraonáin habitats and Grouse sanctuary given its high concentration of Red Grouse and its importance to the national Red Grouse population, which is a protected species under the EU Birds Directive. The likely connectivity between Cró na mBraonáin and the appeal site highlights the importance of flight paths between valuable sites in this area and once again demonstrates the importance of the appeal site as a 'stepping stone' site with a distinctive role in linkage between the valued conservation sites in the wider environs. In light of the appellants' concerns that the development of a wind farm at Straboy will decimate the population of Red Grouse on the site and that this will have a massive impact on the Red Grouse Sanctuary, the lack of consideration, represented by the non-reference to this sanctuary at all in the application, is a significant shortfall in the application. The potential impact could not be seen to comply with the Development Plan policy to ensure the protection of the nearby sanctuary. Fourthly, it is critical to note once again that the applicant is seeking to not actively encourage the development and expansion of Red Grouse on the appeal site due primarily to the likely impact on Golden Eagle. What is of significant concern is that the applicant at no time has demonstrated how the proposed scheme will mitigate against the likely negative impacts for Red Grouse on this site and the consequences for the wider area. For this species, the impact resulting is compounded in the Glenties area as other proposed wind farm developments will ultimately cumulatively affect the prevalence of the species in upland bog areas through displacement and potential collision risk as developments proceed. Finally, I note that as part of its bird monitoring proposals the applicant proposes a pre-construction survey to quantify the number and distribution of

Red Grouse on the site. I would submit that this comes too late in the process. It again shows the deficiencies of the EIS where this level of baseline survey data has not been provided. Despite the known sensitivity of this site and the prevalence of the species, no dedicated Red Grouse survey was carried out. Permitting a development that potentially would seriously undermine the habitat and presence of this red listed species before knowing what is actually on the site constitutes premature decision-making.

**Other Bird Species**

Much has been alluded to above in relation to loss of habitat, fragmentation of habitat, disturbance, etc. for Golden Eagle and Red Grouse. I note again also that there was no proper breeding bird survey done for the site. Therefore, deficiencies in knowledge about the prevalence of other important bird species are evident. What has been referred to by me above as being concerns in relation to impacts on the above referenced species can equally apply to other known species worthy of protection on this site, such as Peregrine and Raven. The likelihood of Golden Plover and Merlin occurring on the site cannot be ignored also. Furthermore, the applicant acknowledges that there are birds that are at risk of collision with turbines on the site, notably Kestrel. Ultimately, what is required to be noted is that, despite the appeal site not being a designated conservation site, it must be recognised as an important habitat for an array of important bird species and that it is a critical link in the chain of important habitats in the environs of Glenties. The development of a wind farm on this isolated site would have a substantial impact for the important bird species by destruction of habitat, fragmentation of habitat and displacement of species.

In conclusion, there are definitive risks to protected birds that are of special conservation interest that use and overfly this site. While the site may be considered distant from designated SPAs, it is clear from the applicant's own survey work that many protected and threatened species do use and fly over this site and have been recorded as such. Therefore the site itself and the flight paths over it that prevail are of notable value. The site must be viewed as an important 'stepping stone' site that cannot be dismissed as an irrelevant or minor contributor to the habitats for protected bird species in this area. It is evidently an additional important site for threatened species. The reality of the development of a wind farm on this site is that there would be a significantly lower frequency of occurrence of endangered bird species at this site and that the developer would be actively discouraging the use of the site by such species and would be taking no compensatory measures to redress the adverse impacts.

### 10.5.13 Conclusions on Ecology

The above assessment determines that the appeal site contains substantial habitats of international importance, that a wide range of fauna of international importance are

resident, and that flora and other fauna of international importance are potentially resident on this site. It can, thus, reasonably be determined that the site is of significant conservation value in itself. It is further determined that the appeal site forms an important link in the chain of designated conservation sites in the environs of Glenties and is an important 'stepping stone' site for migrant species. Furthermore, it has distinctive ecological connectivity with these designated conservation areas. It is concluded that the proposed wind farm development poses a significant risk to internationally important habitats and would result in permanent loss, destruction and fragmentation of such habitats. It is further concluded that the effects from the construction and operation of the proposed infrastructure would have significant adverse downstream effects on the aquatic habitats of the West of Ardara / Maas Road cSAC. In addition, it is concluded that the development would result in notable displacement and loss of protected fauna within and beyond the site.

Having regard to these conclusions, I am firmly of the opinion that the proposed development, due to its significant scale and its associated construction, to its downstream effects, and to the inadequacy of provision, maintenance and monitoring of mitigation measures proposed, cannot be developed such that there would be no significant impacts affecting the conservation objectives of the West of Ardara / Maas Road cSAC. I am also of the opinion that the proposed development, due to adverse effects on protected bird species, cannot be developed without significant impacts on protected bird species associated with SPAs in the vicinity of the scheme. As a consequence, it is submitted that the stated NPWS Conservation Objective for the West of Ardara / Maas Road cSAC, i.e. "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected", would be undermined by the development of this wind farm scheme. Furthermore, it can be concluded that the integrity of this Natura 2000 site would likely be adversely affected because of the downstream effects of the development of the scheme. There is also a concern that the proposed development, in itself and in combination with other projects in this area, would be likely to have a significant effect on the European sites in the area, having regard to the conservation objectives of these sites. I am of the view that the conservation status of the freshwater pearl mussel, otter, salmon, Annex II bird species, and other protected species would be significantly adversely affected by the proposed scheme, notwithstanding the application of the proposed mitigation measures. It is, therefore, determined that the proposed scheme would undermine the biodiversity value of the site itself, would adversely affect Natura 2000 sites and would, thus, have significant adverse ecological impact.
I note also the provisions of the Wind Energy Guidelines on natural heritage. Reference is made to proposals not adversely affecting the integrity of designated conservation sites and to permitting such development only where there is no alternative solution. The need to develop the proposed scheme within the catchment of the freshwater pearl mussel is unfounded and is unwarranted. I particularly note that the consideration of alternatives, given the sensitivity of this location, was extremely limited and the applicant did not offer any serious analysis of alternatives despite the obvious constraints of proposing to

develop in such a sensitive location. The Guidelines also note the vulnerability of particular habitats and bird species, which notably are the dominant habitats on the appeal site and bird species that are known to occur on the site. The adverse impacts arising from the proposed development clearly demonstrate that the proposed development does not sit comfortably with the provisions of the Wind Energy Guidelines.

Finally, I note the provisions of Donegal County Development Plan in relation to natural heritage. Policy NH-P-1 states that it is a policy of the Council to ensure development proposals do not damage or destroy any sites of international or national importance, designated for their wildlife/habitat significance. I acknowledge that the appeal site is not designated as such a site. However, it is most interesting to note that the applicant considers the site to be of 'National' importance due to the presence of ecological features such as extensive areas of habitats listed on Annex I of the Habitats Directive, presence of significant populations of freshwater pearl mussel downstream of the site, moderate to good potential for salmonid fish, and the dominance of the site by large tracts of semi-natural habitat. One could certainly question whether the damage and destruction that would be caused by the development would constitute a development that would be contrary to this policy. The Plan also acknowledges that the EU Birds Directive requires member states to protect the habitats of important species outside of designated areas. This development does not do this and the applicant's intention is overtly to downgrade the habitat status of this site, notably for Red Grouse and potential usage by Golden Eagle. The Plan notes that Ireland is a signatory to the International Ramsar Convention on the conservation and wise use of wetlands. Wetland habitats, such as peat bogs, are noted in the Plan to have a high ecological value and are seen to have a role in the carbon cycle, helping to mitigate against climate change. This development does not respect this provision. The Plan also has an objective (NH-O-4) to protect and improve the integrity and quality of Fresh Water Pearl Mussel Basins and to take account of any Fresh Water Pearl Mussel Sub-Basin Plan. The proposal has not addressed this and clearly conflicts with the requirements of the Sub-Basin Plan. Also, Policy NH-P-5 requires consideration of the impact of potential development on habitats of natural value that are key features of the County's ecological network and to incorporate appropriate mitigating biodiversity measures into development proposals. This site is a very important 'stepping stone' site. Its value will be lost by the wind farm development proceeding. While on the one hand the principle of the proposed development sits comfortably with the provisions of the Plan on renewable energy, the likely significant ecological effects do not sit with the natural heritage provisions that centre on conservation.

## 10.6 Considerations on Peat

### 10.6.1 Peat Landslide Risk

The applicant undertook a peat landslide risk assessment to determine how the development would affect slope stability and the creation of a peat landslide risk. Acknowledging certain areas across the site needed to be avoided due to slope, peat depths and peat quality, it was submitted that alterations were made to the layout when high risk areas were identified. The avoidance measures included relocation of Turbine 18 southwards, realignment of the access road between T17 and T18 and between T11 and T14, and removal of an access road between T24 and T5. An assessment of construction-related peat landslide risk was then undertaken. This concluded that the site could be divided into three broad zones (A, B and C) and these are based on topography and peat depth. Appendix F of the EIS includes the peat slide risk map, whereon the three zones are shown. The EIS states:

- Zone A is represented by the areas of the site with peat depths >1.5m (and up to 5.1m locally) and where the slope is $<5^0$. The likelihood of a construction-related peat landslide is considered unlikely within this zone.
- Zone B is represented by the areas of the site with peat depths also>1.5m but on slopes typically between 5 and $10^0$ typically. The likelihood of a construction-related peat landslide is considered likely without mitigation here.
- Zone C are the areas of the site where peat is <1.5m and rock outcrop is frequent. The likelihood of a construction-related peat landslide is considered negligible here.

The hazard ranking for Zones A and C determined them to be insignificant. The action suggested for these was the '*project should proceed with monitoring and mitigation of peat landslide hazards at this location as appropriate'*. The hazard ranking for Zone B was determined to be significant. The action suggested was '*project may proceed pending further investigation to refine assessment and mitigate hazard through relocation or re-design at these locations.*' The applicant has submitted that, with the re-design of the conventional road construction methods in Zone B, the hazard ranking is lowered and the project can proceed.

Mitigation measures have been identified to maintain the determined low risk ranking at the construction stage and these are:

- A contractor with experience of working with peat will be engaged for the works and will provide a method statement for all earthworks.
- Floating roads will be used in areas of deep peat to avoid excavation of peat.
- Between T10 and T11 conventional road construction will be used and the road will follow the outer edge of the shelf where peat is thinnest.
- Peat regeneration areas will be provided.

- Peat will not be stockpiled on in-situ peat.
- Peat will be used to restore the areas around the turbine foundations.
- Excavation of peat will not be carried out during prolonged heavy rainfall events.
- Underground cabling will follow the track alignment.

The appellants have submitted a number of concerns in relation to the peat landslide risk assessment. The approach presented by the applicant was found by Dr. Bragg to be minimal. It was noted:

- Only two risk factors (peat thickness and slope) were considered in defining the hazard zones, when other methodologies recognise the importance of at least eight factors and use at least three in systematic assessments of peat stability.
- The applicant's assessment implies that the stability of peat less than 1.5m thick is independent of slope, even though the best available quantitative analysis indicates that it does vary with slope.
- Some known risk factors were not recorded during the field survey. Others such as land use differences, erosion and peat slide scars, and the presence of swallow holes were noted but not taken into account in the peat stability assessment.
- Although shear strength data were collected for at least 72 locations, only three or four generic Factor of Safety values were calculated and it is not clear whether these are minimum, maximum or average values for the zones identified.

The appellants submitted that a much more detailed peat stability analysis would have been expected given the risk of peat slide, the drainage of the site into the Stracashel River, this being the most likely route downstream for any uncontained displaced peat, and the consequent effect on Freshwater Pearl Mussel in the Owenea River. It was further submitted that the conclusions of the peat stability analysis for Zone B (i.e. the '*project may proceed pending further investigation to refine assessment and mitigate hazard through relocation or re-design at these locations*') suggests an expectation that substantial changes to layout and design may be implemented after planning permission is granted. The appellants are of the opinion that the outcome of the peat stability assessment carried out does little to inspire confidence that there is a low risk of peat slide at the site.

With due regard to the appellants' concerns, the applicant's assessment appears to present significant shortcomings. Clearly, there is an extensive range of factors that can impact on peat landslide and there appears to have been a minimalistic approach to assessment, with only a limited number of factors analysed despite the potential effects of others that may prevail on the site yet were not fully scrutinised. There is a further concern about the application of generic Factors of Safety and their representativeness for large areas of the site. Ultimately, there must be confidence in the assessment undertaken. The implications of a landslide on this site raise concerns for residents in the vicinity and for the natural environment. In the context of the former, the effects of peat instability are evident for

the peat regeneration areas which will be discussed in more detail later. The consequences for the natural environment, and the aquatic environment in particular, have been highlighted by the appellants already. The Board is aware of the Derrybrien peatslides. The potential for peat from a slide to enter watercourses and to move through the surface water system to impact on the Stracashel River and the Owenea River system, and consequently impact on Freshwater Pearl Mussel, is a reality. Such concerns are heavily influenced by considerations set out below on the proposed repositories and the likely failure to adequately contain significant volumes of peat on the site.

### 10.6.2 Peat Storage

The handling and storage of peat associated with the proposed development is one of the most serious concerns for residents in the vicinity of the proposed wind farm site. The concerns raise very significant issues for the Board to consider as the storage of peat is proposed immediately upslope of inhabited houses and because of the inconsistency of the applicant's proposals. The latter requires to be explained prior to consideration of the potential impacts arising from peat storage.

The Applicant's Proposals

*The EIS*

The EIS refers to two areas having been identified within the landholding that would be used for peat regeneration – referred to as PRA-1 and PRA-2. Table 5.2-10 in the EIS is titled 'Summary of Peat Regeneration Area'. Therein it refers to PRA-1 as having an area of 36,870m$^2$, with the volume of peat to be placed at 36,870m$^3$. The comments state:

*Assume only 2/3 of area used due to local slopes or peat depths. Variable ground conditions; flat areas connected by locally steep ($10^0$) ramps. A drain divides the area.*

PRA-2 is referred to as having an area of 15,960m2, with the volume of peat to be placed at 15,960m$^3$. The comments state:

*Assume only 2/3 of area used due to local slopes or peat depths. Generally thin peat depths, but locally steep slopes ($15^0$) being unsuitable. A drain divides the area.*

The total area for peat regeneration is then given as 52,830m$^2$, with the volume of peat to be placed being a similar figure.

The EIS goes on to state that peat will be placed to depths of no greater than 1.5m, and typically <1.1m. Clay berms are to be used to support the peat as it is placed. Stilling ponds are proposed to be placed at the low points of the peat regeneration areas (PRAs) to treat surface water runoff. The EIS notes that not all peat will be taken to the PRAs,

with approximately 13,350m$^2$ being used for landscaping around turbines, cranage areas, substations and restoration for the borrow pits. The PRAs are to be accessed by internal site roads. The remedial measures directly associated with the PRAs set out in the EIS include peat being placed to a depth of no greater than 1.5m in the PRAs and typically <1.3m. These areas are to be fenced off to allow vegetation to establish. The upper layers of peat excavated are to be placed on top to facilitate re-vegetation and regeneration of the peat. At the low side of these areas, surface water runoff is to be directed to silt traps. Discharge from the settlement ponds associated with the PRAs is to be diffuse overland flow or directed to an existing drainage channel as appropriate at each location. Straw bales and silt fences are to be used to increase the efficiency of silt removal. Peat taken to the PRAs is to be placed and landscaped as soon as it arrives. It is to be reseeded as soon as practical after landscaping. In relation to the predicted impact of the proposed development and the "Worst Case Scenario", the EIS refers to that being if a bog slide was to occur and peat entered the water courses draining the site, resulting in fish kills. With regard to monitoring, the EIS refers to monitoring of the works being carried out by the project engineer, involving visual inspection of the works for peat and slope stability.

*Peat Management Plan*

A Peat Management Plan was presented as part of Appendix F of the EIS. Therein the PRAs are referred to as 'peat storage areas', 'peat disposal areas' and 'peat regeneration areas'. It is stated that the vegetated upper peat layer (acrotelm) and the lower layers of peat (catotelm) are to be excavated and managed separately in one of the two peat regeneration areas. The acrotelm is proposed to be emptied so that the vegetation faces right-way-up. Machine operators are to place the upper crust of peat on top to encourage regeneration of native plants. Works are to be inspected during heavy rainfall to identify unwanted surface water ponding. Peat is not to be stockpiled on in-situ peat on sloping ground except in the proposed peat storage areas, where beforehand constructed clay berms are proposed to protect against peat slippage. The Plan then states that peat will not be placed at depths greater than 1.5m and typically <1.2m in the regeneration areas including 0.3m acrotelmic peat on top. It is then stated that there is 93,846m$^2$ of peat regeneration area identified and that this includes 24,245m$^2$ along road verges, substations, hardstanding and foundation areas where mainly acrotelmic peat will be used, and 67,278m$^2$ peat storage at peat disposal areas and borrow pits for catelmic and acrotelmic peat. It is then concluded that the extracted 65,633m$^3$ can be accommodated. Once peat placement is complete the peat storage area is to be fenced off with stock-proof fencing and clearly signposted at 20m intervals warning of soft ground conditions. The existing acrotelm of the peat storage areas is to be used to source turves and cuttings of heather and peat mosses for restoration of eroded blanket bog and peat regeneration areas before filling.

The details of each regeneration area are given in Table 4.3. It is stated that for PRA-1 the area associated with it is 36,870m$^2$, that it has a current peat depth range of 0.3-0.8m, a slope range of $4^0$ to $10^0$, the volume of catotelm to be stored of 25,811m$^3$, and a volume

of acrotelm of 11,062$m^3$ to be stored. It is stated that for PRA-2 the area associated with it is 15,960$m^2$, that it has a current peat depth range of 0.3-0.5m, a slope range of $2^0$ to $15^0$, the volume of catotelm to be stored of 14,537$m^3$, and a volume of acrotelm of 4,787$m^3$ to be stored. This produces a total of 40,348$m^3$ of catotelm and 15,849$m^3$ of acrotelm to be stored.

The Plan states that, prior to placing any peat in these areas, stilling ponds will be excavated at the low side of the regeneration area, being 10m wide x 11m long x 0.75m deep. There is to be no channel connecting the stilling pond to the existing surface water network. Flow from the stilling pond is to be by overland flow through the vegetation to maximise silt removal. This is to be followed by the placement of clay berms, placed intermittently in the regeneration area to hold the peat in place. They are to be parallel to the contours and to have gaps to permit surface water escape. It is stated that with 1.0m of peat being placed, the berms need only be 0.7m high. The berms are to be built on subsoil or bedrock. Placement of peat is to only to take place following installation of the stilling pond and clay berms. Filling is proposed to commence at the high side of the regeneration area, furthest from the stilling pond and work is to commence towards the stilling pond. The peat surface is to be sloped to permit surface water runoff into the catchment area of the stilling pond. Excess peat is to be placed into the regeneration areas from dumper trucks and profiled using an excavator with grading bucket. The Plan notes that during transport peat can lose its strength due to vibration and liquefaction and it is recommended that a low speed limit be enforced to maintain the integrity of the peat as far as possible. The depth of the filled peat is stated to be no more than 1.0m.

With regard to each of the PRAs, the following is noted:

PRA-1 is stated to be sited approximately 150m from the public road, consisting of wet heath and largely cutover blanket bog with the remaining peat in the cutaway area typically 0.3-0.6m deep, but ranging up to 1.5m. It is noted that subsoil is exposed in some areas where cutaway peat has been eroded. It is also noted that there are variable ground conditions, flat areas connected by locally steep ($10^0$) ramps, and that a drain divides the area. It is stated that peat will not be placed at steep slopes and on deep peat (>0.7m). Approximately 2/3 of the area is stated to be suitable for peat regeneration.

PRA-2 is stated to consist of well-grazed and degraded cutover blanket bog plots with remaining peat in the cutaway area typically 0.3 to 0.5m deep. Uncut peat banks are noted to have peat depths up to 1.6m. Slopes in the area are between $2^0$ and $6^0$ with locally up to $15^0$. Again, peat is not to be placed at steep slopes and on deep peat (>0.7m). It is noted that a drain divides the area and it is stated that approximately $^2/_3$ of the area will be suitable for peat regeneration.

With regard to erosion and sediment control, rainwater runoff and inflow of the peat storage areas are proposed to be controlled. It is stated that vegetation cover has to be re-established as soon as possible in order to avoid erosion of stored peat. It is stated that the

surface of the peat storage areas are to be partly covered with peat turve from road and hardstanding excavation and the peat storage area itself and that, if there are insufficient vegetated turves to cover the entire peat storage area, the turve will be laid in strips and the remaining bare peat surface would be hydroseeded or covered with cuttings from acrotelmic peat. It is stated that the water balance of these areas needs to be balanced. Silt traps are proposed to be installed at the outlets. Temporary silt fences made from geofabrics are to be installed where excavations take place near water courses, flushes and on the lower side of temporary soil and peat storage areas.

In terms of the "Worst Case Scenario", the Plan notes the position of the EIS. In the event of a construction-related landslide occurring, the emergency response to be implemented is scheduled.

With regard to monitoring, the Plan states that the applicant will appoint a suitably qualified firm to act as Engineer for the project who will conduct regular site visits to inspect the works, with due regard to the handling of peat and to eliminate peat slide risks.

*First Submission to the Oral hearing*

Mr. Keohane made the submissions to the Oral Hearing on geology, hydrogeology and surface water on behalf of the applicant. The first submission gave an overview in relation to these matters. On the peat regeneration areas, it was stated that a number of cutaway areas within the site had been identified as suitable and that peat would be placed to a depth of no greater than 1.5m in these areas, and typically <1.3m. It was further stated that clay berms would be used to hold the peat in place and that the upper layer of peat excavated will be placed on top to facilitate re-vegetation and regeneration of the peat. It was stated that the volume of peat to be excavated would be 66,180$m^3$ but with the omission of 3 turbines by the planning authority's decision, this would be reduced to approximately 63,500$m^3$, with this being taken to the one of the two PRAs or used in landscaping and restoration along roads, cranage areas, foundations and borrow pits. It was submitted that the two PRAs can accommodate up to 52,830$m^3$ but with the omission of 3 turbines a smaller volume would be taken to the PRAs.

PRA-1 was seen to be within a cutaway / cutover area with rock outcrop which is flat to $2^0$ slope to the south generally, but with locally steep 'steps' of 10 to $12^0$. It was stated that peat would be placed on flat areas and it was estimated that up to 36,870$m^3$ could be accommodated at PRA-1.

PRA-2 was found to have some steeper slopes (up to $15^0$ in places) and that this would require clay berms to hold the peat in place in 'cells'. The clay for the berms was stated to be sourced at PRA-2, taken from the high side of each cell to the low side to form the berm for that cell. It was submitted that this would reduce the cross-fall / slope of the

floor of the cells at PRA-2. It was estimated that up to 15,960$m^3$ could be accommodated at PRA-2.

It was noted that not all of the PRAs would be used, with steeper slopes not being used.

With regard to monitoring, it was stated that monitoring of the placement of peat in the regeneration areas would occur. Data is proposed to be recorded and evaluated daily to identify any movement. In the event of unexpected or abnormal movement, the cause is proposed to be investigated and all necessary mitigation measures would be carried out. Emergency response and mitigation measures were outlined.

*Second Submission to the Oral hearing*

Following the first submission, I raised a number of issues with the applicant at the Hearing in relation to the proposed peat regeneration areas. Matters referred to included the existing slope of peat storage areas relative to nearby houses, existing natural ground conditions at the proposed PRA-1, storage methodology, prevention of peat slippage, monitoring, response in the event of peat movement during a period of prolonged rainfall, prevention of slippage towards adjoining land, drainage maintenance, and maintaining berms and containment of the site. The applicant chose to address the matters by providing a second submission.

Prior to outlining the detail of this submission, I note firstly that a revised Table 5.2-10 of the EIS was submitted to the Hearing which revised the land areas associated with each PRA. The area of PRA-1 was increased from 36,870$m^2$ to 54,638$m^2$ and the area of PRA-2 was increased from 15,960$m^2$ to 28,629$m^2$. This provided for a total area of 83,267$m^2$ up from 52,830$m^2$.

Mr. Keohane's second submission referred specifically to PRA-1, addressing filling methodology, peat landslide risk assessment, and monitoring.

**Filling Methodology,**

PRA-1 was noted as being at an elevation of between 165mOD and 185mOD approximately. The nearest house was stated to be 150m to the south of the PRA. The ground conditions at this location were stated to be near flat shelves, slightly undulating in places, separated by short steeper 'steps'. The gradients across PRA-1 were stated to vary between $4^0$ and $8^0$. The peat depth across the western side of the PRA was stated to be generally <0.6m, but is up to 1.4m deep in places. It was noted that bedrock outcrop occurs also. It was further stated that on the eastern side of the PRA there are cutover plots, with peat depth of between 0.6 and 1.5m generally, but up to 4.6m measured. This variation in peat depth was stated to reflect the undulating bedrock surface. The undulating and uneven bedrock was seen to assist in the overall peat stability at the site.

Access to PRA-1 is scheduled early in the construction programme. It is proposed that once the road to T22 is constructed it is proposed to go to PRA-1 and work towards T22. It is estimated that this will generate approximately 5,742$m^3$ of peat. Before this peat is excavated PRA-1 would be ready to accept peat in terms of surface water management and peat stability.

The applicant then submitted that the approach to the storage of peat would be to create discrete cells defined by stone berms. It was stated that a detailed topography survey would be carried out to inform the detail design and placement of berms. Indicative cell layout was shown in the submission. It was submitted that berms would be created at the lower end and sides of each cell by removing the peat and founding the berm on mineral soil or bedrock. The berms were stated to act as a gravity wall against peat moving. They are stated to have an outer slope of 1V:2H, a 1m wide crest and a 1V:1H inner slope. The rock fill would be lined with a thin layer of mineral soil to stop the peat from drying out. The berm on the low side of each cell would extend 1.2m above existing ground level and it is proposed would follow the natural contour so that its crest is level. It was stated that the first cell that would be created would be at the south west corner and that it is sized to accommodate peat generated from the section of road between T22 and the PRA.

In relation to surface water management, it was submitted that there would be surface water diversion at the northern end of the PRA to deflect clean surface water from entering the area. Temporary surface water diversion would be installed closer to each cell for the period the cell is being filled. Cut-off fences would be placed upgradient of the active cell while it is being filled to provide this diversion. It is proposed that they would be moved upslope and reused during the filling of the next cell. It is proposed that a 2-stage silt trap would collect surface water runoff from filled cells. Water would be collected and treated with a silt buster and clean water would be discharged to the surface water diversion feature installed at the northern end of the PRA. It was submitted that this would remain in operation until surface water runoff from the restored PRA is at background levels.

Once the stone berms and surface water management infrastructure was installed, peat would be brought to the first cell using low bearing pressure / wide track haul vehicles. The peat is predicted to stay intact during transport. It was stated that it is proposed to be placed at a depth of 1.0m, which includes the acrotelm peat turves. The latter will be progressively placed as each cell is filled. A collection drain is proposed to be installed to take away surface water as it collects at the low side of the cell. It is proposed this will direct water to the silt trap for treatment using silt busters.

The total footprint area of PRA-1 was stated to be 54,638$m^2$. It was noted that the area is split by a drain, with the western side covering an area of 27,174$m^2$ and the eastern side covering 27,464$m^2$. It was stated that 43,699$m^2$ is usable for peat deposit. It was noted that with a fill depth of 1m, this could accommodate 43,699$m^3$. The applicant envisages that as a worst case 36,870m3 of peat will need to be placed in PRA-1 and that, if all the

usable area is used, this would result in a peat depth of approximately 0.84m. It was stated, however, that it is intended to fill the cells to a depth of 1m.

**Peat Landslide Risk Assessment**

It was submitted that a qualitative risk assessment of peat stability in the PRA was undertaken. Reference was made to measurements of shear strength of excavated peat after placement in regeneration areas at a wind farm site in County Mayo of between 3kPa and 6kPa. Average slopes within the cells of PRA-1 were stated to vary from 4 to $8^0$. The range of slopes was noted as including the steeper steps between the terraces that are not to be used for peat placement. It was stated that the slopes on the floor of the cells would be at the lower end of the range, approximately $4^0$ on average. Reference was made to the use of the Scottish Executive Guideline on Peat Landslide Hazard and Risk Assessment. It was submitted that for the purposes of assigning a likelihood of a peat landslide within the PRA the worst case scenario was used, i.e. the lowest recorded undrained shear strength of disturbed peat (3kPa) on a slope of $8^0$. A Factor of Safety of 2.1 was calculated for PRA-1. It was stated that, with a Factor of Safety between 2 and 5, the likelihood of a peat landslide at PRA-1 was considered 'Unlikely'. For PRA-1 and in terms of impact to nearby residences, the hazard ranking was estimated at 4, which is considered 'Insignificant', but at the high end of that range. It was concluded that the action suggested for that ranking was the '*project should proceed with monitoring and mitigation of peat landslide hazard at these locations as appropriate.*'

It was noted that berms would be placed around the perimeter of PRA-1 and internally to divide PRA-1 in smaller cells. It was stated that the primary purpose of the berm is to hold the placed peat so it cannot move in the long term. It was submitted that this reduced the likelihood to negligible and that while the Hazard Ranking remains Insignificant the score reduces to 2.

Mitigation measures relating to peat stability at the PRAs are stated to be:

- Rock berms provided around the perimeter of the PRAs and bedded into the underlying bedrock stratum or mineral soil.
- Handling of peat to be minimised to maintain integrity and residual strength of the peat.
- Areas with shallow slopes to be preferentially selected for use following topographical survey of site. The slope of $8^0$ is worst case. With use of cutaway areas with slopes of $4^0$ and less, the factor of safety increases to greater than 5 and the likelihood of a peat landslide increases to 'Negligible' without any berms.
- The steeper slopes and area of the site with the deepest peat will not be used. Where steeper slopes are present, berms dividing cells will be placed on, but set back from, the high side of the slope and the peat placed in the lower cell is to be feathered into the rising slope.
- Peat is to be placed to a depth of 1m.

- Surface water management is to be installed to divert clean water away from the PRAs. The diversions are to be kept close to the active cell so that only rainfall incident in the cell needs to be treated.
- Cells are to be progressively restored with peat turves. Incidental rainfall on the completed cells will flow across the acrotelm peat assisting in the removal of suspected sediment.

**Monitoring**

Mr. Keohane re-stated that monitoring of peat stability would be carried out during the construction phase. With daily inspection and the construction stage due to last for 24 months, the applicant submitted that a substantial amount of data would have been collected and analysis and trends established. It was further submitted that monitoring would continue post construction until there is at least one year of data without recorded movement. It was submitted that there would be some vertical settlement and consolidation of peat after placement but that, with the use of stone berms and discrete cells, lateral movement of peat was not envisaged.

Inconsistencies of Application Submissions

As can be seen from above, there are many inconsistencies in the applicant's findings and proposals in relation to existing site conditions and to handling and treatment of peat at the proposed repositories. Such inconsistencies and regular changes of approach to storing significant volumes of peat upslope from houses raise particular concerns with me because of the serious effects that would result from a landslide. If the approach to design continually changes, a question must be posed as to the veracity of proposals and, indeed, to the reliability of information contained within the application. The risk of landslide and consequent hazard to residents is too great to tolerate in such an event. It is my submission that the applicant's approach to the issue of dealing with peat has been inconsistent, continues to undergo design change, and cannot be relied upon in the assessment of this application. Notwithstanding anything further from considerations that may be offered on the practical implications of providing substantial peat storage a short distance upslope of inhabited houses, the inconsistency on information and the unacceptability of the changing design process to date goes against any reasonable determination that this element of the development is sound.

To support the concerns expressed, I note some of the following inconsistencies and design variations:

**The Function of the Peat Stores**

The Peat Management Plan refers to the two peat holding areas using different terminology, as either 'peat storage areas', 'peat disposal areas', or 'peat regeneration areas'. Ultimately, the function of these holding facilities is to provide a method of

dealing with waste peat. The repositories have no other practical function. They would, in effect, be large, contained landfills, i.e. waste disposal facilities used for the deposit of waste peat. The problem associated with the applicant's terminology for the holding areas is that their purpose is not clear. How peat can successfully regenerate on those parts of the site to be used as repositories has not been demonstrated. The various approaches seeking to achieve regeneration suggest the frailty of such an outcome.

**Distance from Houses**

The Peat Management Plan states that PRA-1 is sited approximately 150m from the public road, while in the applicant's second submission to the Hearing it is stated that the nearest house is 150m to the south of the PRA. I note that this house is well set back from the public road. The applicant's submitted drawings would indicate that the house is significantly less than 150m from the repository. Clearly, such detail should be known and is pivotal in aiding determination on how the development could potentially impact on the residents of this property.

**Land Area and Volumes of Peat at PRAs**

There is significant confusion in the various submissions from the applicant on this issue. I refer to the various submissions as follows:

- Table 5.2-10 of the EIS refers to PRA-1 as having an area of 36,870$m^2$, with the volume of peat to be placed at 36,870$m^3$. PRA-2 is referred to as having an area of 15,960$m^2$, with the volume of peat to be placed at 15,960$m^3$. Total land area is given as 52,830$m^2$ and total volumes of peat to be placed are given as 52,830$m^3$.

- The Peat Management Plan in the appendices of the EIS states that there is 67,278$m^2$ peat storage available at the peat disposal areas. It is stated later that the area associated with PRA-1 is 36,870$m^2$ and that for PRA-2 the area associated with it is 15,960$m^2$.

- In the applicant's first submission to the Oral Hearing it is stated that in PRA-1 up to 36,870$m^3$ could be accommodated and at PRA-2 up to 15,960$m^3$ could be accommodated, with both accommodating a total up to 52,830m3.

- In the applicant's second submission to the Hearing it was stated that the total footprint area of PRA-1 is 54,638$m^2$, of which 43,699$m^2$ is usable for peat deposit. The applicant envisages that as a worst case 36,870$m^3$ of peat will need to be placed in PRA-1.

- The revised Table 5.2-10 that was submitted separately by the applicant at the Hearing shows the area of PRA-1 is increased from 36,870$m^2$ to 54,638$m^2$ and

the area of PRA-2 was increased from 15,960m$^2$ to 28,629m$^2$. This provides for a total area of 83,267m$^2$, up from 52,830m$^2$.

From the above, it can be seen that there is a significant degree of confusion on what land areas are associated with the repositories and what volumes of waste peat are to be placed within them. It is apparent that an error has arisen in determining the land area to be used for the repositories. The land areas stated to be available appear to have been increased or altered in more recent times to ensure that the proposed volumes of peat stated to be deposited at 1m depth would be accommodated within $^2/_3$ of the land area of each repository.

**The Slope of Repositories**

PRA-1:

- The EIS, in Table 5.2-10, comments that this comprises flat areas connected by locally steep ($10^0$) ramps.
- The Peat Management Plan refers to a slope range of $4^0$ to $10^0$.
- The applicant's first submission to the Hearing refers to a flat to $2^0$ slope to the south generally, but with locally steep 'steps' of 10 to $12^0$.
- The second submission to the Hearing refers to the gradients across PRA-1 as varying between $4^0$ and $8^0$.

PRA-2:

- The EIS, in Table 5.2-10, comments that this contains locally steep slopes ($15^0$).
- The Peat Management Plan refers to a slope range of $2^0$ to $15^0$, while stating that slopes in the area are between $2^0$ and $6^0$, while locally up to $15^0$.

The issue of slope is evidently critical in the determination of landslide risk. There is no clarity in the extent of information provided.

**Existing Peat Depths**

The Peat Management Plan states that PRA-1 has a current peat depth range of 0.3-0.8m. It then goes on to state that this repository is largely cutover blanket bog with the remaining peat in the cutaway area typically 0.3-0.6m deep, but ranging up to 1.5m. In the second submission to the Hearing it was stated that the peat depth across the western side of PRA-1 is generally <0.6m, but is up to 1.4m deep in places, while on the eastern side of the PRA there are cutover plots, with peat depth of between 0.6 and 1.5m generally, but up to 4.6m measured.

This again is a critical issue as it is essential to have a high level of understanding of the peat onto which it is proposed to place disturbed peat when considering potential for repository failure.

**Depth of Peat to be Placed**

The EIS states that peat will be placed in the PRAs to depths of no greater than 1.5m, and typically <1.1m. When discussing remedial measures, the EIS refers to peat being placed to a depth of no greater than 1.5m in the PRAs and typically <1.3m. In the Peat Management Plan, initially it is stated that peat will not be placed at depths greater than 1.5m and typically <1.2m in the regeneration areas including 0.3m acrotelmic peat on top. The Plan then goes on to state that the depth of the filled peat is to be no more than 1.0m. In the applicant's first submission to the Oral Hearing it is stated that peat would be placed to a depth of no greater than 1.5m in the PRAs, and typically <1.3m. In the second submission to the Hearing it is stated that it is proposed to be placed at a depth of 1.0m, which includes the acrotelm peat turves.

Evidently, the depths of the peat to be placed have significant implications for the design process, the containment provisions, the extent of land to be used, drainage design, etc. From the above, the applicant appears somewhat undecided and this greatly undermines confidence in this element of the proposed development.

**Use of Berms**

In the EIS it is stated that clay berms are to be used to support the peat as it is placed. In the Peat Management Plan it is stated that clay berms are proposed to protect against peat slippage. In the applicant's first submission to the Hearing it is stated that clay berms would be used to hold the peat in place. It is also stated that PRA-2 requires clay berms to hold the peat in place in 'cells'. Clay for these berms was stated to be sourced at PRA-2, taken from the high side of each cell to the low side to form the berm for that cell. In the second submission to the Hearing it was stated that the approach to the storage of peat would be to create discrete cells defined by stone berms.

This is a critically important design issue. How peat and water is contained, controlled, managed and disposed of are hugely significant matters and what type of berms to be put in place determines wholly different outcomes.

There is further confusion in terms of berm form and structure. The Peat Management Plan states that, with 1.0m of peat being placed, the clay berms need only be 0.7m high. In the second submission to the Hearing very specific and different details were provided, where it was submitted that berms are to have an outer slope of 1V:2H, a 1m wide crest and a 1V:1H inner slope. The berm on the low side of each cell would extend 1.2m above existing ground level and it is proposed would follow the natural contour so that its crest is level.

Where berms are to be constructed is also essential to have an understanding about to gauge their stability, allowance for movement of water, etc. In the Peat Management Plan it is stated that the berms are to be built on subsoil or bedrock. In the second submission to the Hearing it is stated that the berms would be founded on mineral soil or bedrock. It is later stated that berms would be bedded into the underlying bedrock stratum or mineral soil. It, therefore, cannot reasonably be determined onto what the berms are proposed to be placed and how they are to be placed. We are also unsure as to what extent materials are to be removed from the locations for the berms to allow them to be constructed or to allow them to be bedded in.

There is incongruity also with the form the layout of the berms would take. In the Peat Management Plan it is stated that the clay berms would be placed intermittently in the regeneration area, parallel to the contours and to have gaps to permit surface water escape. In the second submission to the Hearing it was stated that berms would be placed around the perimeter of PRA-1 and internally to divide PRA-1 in smaller cells. An indicative, but very formal and orderly layout of 'cells' was outlined.

I cannot impress enough upon the Board the importance of the reliability of information on the proposed containment of peat waste at the proposed repositories. This design element appears to be subject to ongoing review and change. The risk associated with inadequate containment measures is too great and the hazard posed cannot be downplayed.

**Treatment of Peat after Deposition**

The EIS states that peat taken to the PRAs is to be placed and landscaped as soon as it arrives and that it is to be reseeded as soon as practical after landscaping. It also states that the upper layers of peat excavated are to be placed on top to facilitate re-vegetation and regeneration of the peat. The Peat Management Plan states that the existing acrotelm of the peat storage areas is to be used to source turves and cuttings of heather and peat mosses for restoration of eroded blanket bog and peat regeneration areas before filling. The Plan also states that the surface of the peat storage areas are to be partly covered with peat turve from road and hardstanding excavation and the peat storage area itself and that, if there are insufficient vegetated turves to cover the entire peat storage area, the turve will be laid in strips and the remaining bare peat surface would be hydroseeded or covered with cuttings from acrotelmic peat. In the first submission to the Hearing it is stated that the upper layer of peat excavated will be placed on top to facilitate re-vegetation and regeneration of the peat.

The condition the repositories are to be left in is important to know in the context of understanding consequences for runoff, drying out of peat and potential development of fissures, long-term stability, regeneration potential, etc. It is clear that there is no true

understanding of the ability of the applicant to pursue the topping of the PRAs nor of the consequences arising from the range of options that could potentially be pursued.

**Surface Water**

In the management of water there are differing approaches also throughout the planning application. The Peat Management Plan states that stilling ponds are proposed to be placed at the low points of the peat regeneration areas to treat surface water runoff. In the second submission to the Hearing it is stated that there would be surface water diversion at the northern end of PRA-1 to deflect clean surface water from entering the area. Temporary surface water diversion would be installed closer to each cell for the period the cell is being filled. Cut-off fences would be placed upgradient of the active cell while it is being filled to provide this diversion.

Knowledge of the design for control of water within and in the vicinity of these repositories is again essential and there needs to be complete confidence in the design approach to determine there will not be seriously detrimental impacts for the residents downslope of the repositories.

**Disposal of Runoff**

The EIS states that discharge from the settlement ponds associated with the PRAs is to be diffuse overland flow or directed to an existing drainage channel as appropriate at each location. The Peat Management Plan states that there is to be no channel connecting the stilling pond to the existing surface water network. Flow from the stilling pond is to be by overland flow through the vegetation to maximise silt removal. The peat surface is to be sloped to permit surface water runoff into the catchment area of the stilling pond. In the second submission to the Hearing it is stated that water would be collected and treated with a silt buster and clean water would be discharged to the surface water diversion feature installed at the northern end of the PRA. A collection drain is proposed to be installed to take away surface water as it collects at the low side of the cell. It is proposed this will direct water to the silt trap for treatment using silt busters.

How runoff is to be handled and treated from the PRAs is critical. The implications for the highly sensitive waters that could be affected by sediment and untreated or inadequately treated surface waters could prove very significant in this instance. What surface waters, the degree of treatment prior to discharge and to where the waters are to be discharged needs to be known at the design stage.

**Monitoring**

The EIS states that monitoring of the works would be carried out by the project engineer, involving visual inspection of the works for peat and slope stability. The Peat Management Plan states that the applicant will appoint a suitably qualified firm to act as

Engineer for the project who will conduct regular site visits to inspect the works, with due regard to the handling of peat and to eliminate peat slide risks. In the first submission to the Hearing it is stated that monitoring of the placement of peat in the regeneration areas would occur, that data is proposed to be recorded and it would be evaluated daily to identify any movement. In the second submission to the Hearing it was stated that monitoring of peat stability would be carried out during the construction phase and daily inspection would occur.

Clarity on who monitors, what is being monitored, and how they are monitored are hugely important issues for the proposed peat repositories. It is evident that the proposals are to monitor the works. A real concern with the proposed development is what arises in the longer term when formal monitoring ceases, especially with the meteorological conditions that prevail in this area, namely the high rainfall incidence.

In conclusion, there must be serious concern about the types of information provided in the various submissions by the applicant. The variations and lack of clarity on existing peat depths, existing slopes, proximity to residential property, the land areas to be used for the repositories and volumes of peat to be deposited, the depths to which peat is to be placed within the repositories, how and with what the peat is to be covered, what type of berms are to be used and how they are to be formed, how surface water is to be treated and disposed of, and how monitoring is to take place lead me to firmly conclude that the proposed design is not fully comprehended, has not been adequately determined, and that the risk arising and real hazard for residents in this area is intolerable. The understanding of the complexity of issues that can affect peat slides must be coherent. This is lacking in the application details before the Board.

Third Party Submissions on the Peat Repositories

Many third party submissions have been made on this issue. Several may have in part reflected some of the issues which I raise above. I note in particular the submissions on behalf of the third parties by Dr. Olivia Bragg and Prof. Paul Johnston received at the Oral Hearing. Both have drawn conclusions that the application is seriously deficient on the understanding of peat on the site, and the handling and treatment of waste peat. The applicant undertook a robust rebuttal of these submissions at the Hearing.

I have drawn the attention of the Board to the range of designs and proposals by the applicant earlier. I consider it important to present some of the relevant considerations presented on behalf of the appellants. The following is a synopsis of some of the appellants' expert witnesses' conclusions on the treatment and handling of peat:

Dr. Bragg:

- The spreading of peat in a fairly thin (1-2m) layer over the ground surface has proven problematic in Scotland, resulting in its drying out and being washed off into watercourses.
- The aspiration to establish bog vegetation on the PRAs is ambitious. A fundamental requirement will be to establish suitable hydrological conditions, such that the water table remains close to the upper surface of the translocated peat layer. The water transmission characteristics of the berms will be a major factor in determining whether or not this can be achieved, and it is possible to envisage scenarios with permeable berms in which the translocated peat will always be well-drained and unable to support bog vegetation.
- Effective berms will be essential to prevent translational sliding of peat placed on PRA-1. The manipulations to be performed on the PRA may increase the tendency for peat to become unstable. The insertion of berms to ground bearing level will create a route for water to penetrate rapidly into the till layer beneath the peat. This could, especially during heavy rainfall following a period of dry weather, create conditions for a peat slope failure triggered by a build-up of hydrostatic pressure in the substratum causing liquefaction of the basal peat or mineral layer, which would not necessarily be contained by the berms. The presence of a spring at the upslope edge of the PRA is of particular concern in this context.

Prof. Johnston:

- The understanding of the hydrology of the peat resulting from the proposed excavations for the wind turbines and the related area for deposition of the peat is seriously insufficient for an adequate assessment of any environmental impacts to be made.
- The hydrology of peat is difficult to assess when it is in its natural state but, once excavated, the peat acquires quite different characteristics both at the exposed faces as well as in a re-deposited form.
- How the volume of peat material to be deposited in PRA-1 was derived is vague.
- The detail of how much rock is required for the berms of broken rock or the source of mineral soil that is to be used to provide a covering layer is not given.
- It is not clear what function the proposed construction of cells bounded by rock berms is supposed to serve. If it is to contain the peat and water so as to provide a means for peat regeneration, it is extremely unlikely to achieve this. Given mean annual rainfall at this location, there will be a significant drainage problem involving entrained peat material which will not be solved by conventional settlement ponds or ‘siltbusters’. Excavated and re-deposited peat of the humification values given is likely to have a significantly increased permeability compared to its natural state and ‘sealing’ a rock bund sitting on excavated rock

with a thin cover of mineral soil suggests that there will be leakage around the site as well as runoff from the surface. Moreover, the potential for slippage of the peat downslope of the site is greatly increased by the presence of the excavation for the bund as well as from the leakage through it.

- Research by NPWS shows that slopes of greater than 1.5 degrees are unlikely to sustain sphagnum growth. Thus, what the PRAs will ultimately sustain is unlikely to match any of the surrounding ecology of the blanket bog.
- The control of upslope runoff onto the site appears to be *ad hoc*. No analysis of how much water is likely to be diverted has been given or its potential need for treatment. How the excavated peat is to be placed in the repository is also unspecified. The methods used can have serious detrimental effects on the existing peat and therefore affect the drainage characteristics of the site.
- A serious issue is the slope of PRA-1 at 4-8 degrees. Although there are shelves, it remains a slope magnitude of high risk with respect to peat stability, particularly with the amount of water passing through the site. Comparisons are made with the gas terminal site at Bellanaboy, County Mayo which originally envisaged placing excavated peat on existing blanket peat on a slope of less than 2 degrees, with permission being refused partly on the grounds of the problems of controlling drainage and the consequent risk of peat slides and/or erosion. It is further noted that the peat on that site was also to be contained within cells.
- Regardless of the efficacy of measured shear strength of peat using vane tests, the changed characteristics of excavated peat suggest that the best approach to analysis is through comparison with experience on other sites.

Prof. Johnston concluded that the proposed repository is very likely to carry a high risk of failure, both from drainage control as well as from potential peat sliding. It was submitted that the design, location and environmental impact of PRA-1 have not been appropriately assessed, particularly with the existing houses downslope.

As I have noted above, the applicant robustly defended the proposed revised design presented in Mr. Keohane's second submission to the Hearing. Exchange of views and reference was made to the development of peat repositories, placement and peat regeneration elsewhere, particularly at Bellacorrick, County Mayo, at the Corrib Gas development, and for the Mayo-Galway gas pipelines. Notwithstanding arguments and positions placed by the applicant, I note that Prof. Johnston continued to raise serious concerns about the level of information on the depth of peat throughout the peat repositories, acknowledging that there is potential for deep peat within the PRAs contrary to the applicant's considerations. There was extensive discussion on the Corrib Gas project, the applicability of how peat was being handled there, and its comparability with the proposal. Prof. Johnston noted that PRA-1 is four times steeper than the gas terminal site at Bellanaboy. Much focus was placed on the development and function of the proposed rock berms, with the appellant's position being that digging out for bunds and founding of berms on bedrock is no guarantee of leakage control. It was submitted that there is a lack of clarity on containment and controlled leakage. Matters also focused on

included the quality of water to be discharged following attenuation and passing through siltbusters, with the appellant's position being that this will not return it back to natural levels. The applicant submitted that the findings in relation to the Corrib Gas development present a different conclusion. Prof. Johnston also queried the long-term sustainability of the system being put in place, noting that the proposal invariably changes the hydrological regime on the site.

Conclusions on the Peat Repositories

In my opinion, the ongoing changes in design of the peat repositories presented in the application and throughout the Hearing represent a reactionary approach to the issue of risk and hazard associated with the proposed peat repositories. The applicant's approach falls far short of delivering a confident design to ensure residents and properties in the vicinity are safe from the adverse effects of the failure of a repository. It is also my view that the applicant has failed to demonstrate that the re-deposited peat will produce a "regeneration area". This reinforces the view that the proposed repositories are peat waste landfills. Whether the containment of the repositories is by clay or rock berms, it is apparent that the level of information on existing peat stability, the effects of peat placement, and drainage is seriously lacking. This uncertainty creates a conclusion that the risk is unacceptable.

The deficiencies of the applicant's proposals on this issue include the 'unknowns' in relation to:

- the properties of the existing peat within the repository sites and the re-deposited peat,
- the stability of both,
- the effect of the zones of deep peat immediately upslope of PRA-1 derived from the peat stability analysis,
- the development of the road network upslope of PRA-1 and the long-term drainage effects arising from this,
- the likely compression effects of the re-deposited peat on existing peat,
- the ability for the placed peat to creep on the site due to the slopes on each repository site,
- the understanding of the knock-on effects in the event of a bund failure,
- the effects of proposed drainage measures on the existing peat onto which re-deposited peat is to be placed,
- what the berms are to be built on,
- differing drainage implications where berms are placed on rock or subsoil/mineral soils,
- the effects of berms potentially sinking or the consequent settlement implications for berm stability,
- the ability for the peat to actually regenerate and the approach to achieve this,

- the effect of extensive runoff and ability to control suspended peat,
- the effects of drainage on the repositories' periphery and on the consequent stability of these holding structures,
- the effects of the existing drains that subdivide each repository site on stability,
- ponding on the repositories and the potential to destabilise the deposited peat even more,
- the necessity for a varying scale of bunds as cells move downslope and the potential consequent need to terrace the peat slopes,
- effects of change in slope for a potential bog burst,
- the knock-on effects of peat wash-off where rainfall concentrates within a cell, and
- the effects of a peat slide overwhelming settlement ponds.

It is, therefore, my conclusion that the proposed repository designs are ever-changing, are at best conceptual and schematic, and lack significant detail. The threat to the local community and the local environment by the development of the proposed regeneration areas is unacceptable. I am further very concerned about the measures after the works are completed and when monitoring has finished. There are a range of potential hazards arising from this part of the development. The real possibility of the development of fissured peat surfaces and the repositories succumbing to a deluge of rain in this location and/or berm failure, with both resulting in slippage and where this commences a short distance upslope of houses, poses a serious risk and undermines any acceptance of the proposed repositories.

### 10.6.3 Development of the Internal Road Network

It can be seen that there is a relatively significant proposed length of internal roadway traversing the blanket bogland on this site. Almost 11km of new road will be constructed. Peat depths where the roads will be constructed range from 0.2m to 2.0m. It is estimated that 49,552$m^3$ of peat would be excavated to make way for the new road system. The excavation width would average 6.0m.

The access roads are intended to be constructed using conventional road construction methods, except at locations where peat is deep. Floating roads are proposed at these locations. These are identified as being part of the road between T5 and T6, the junction of the road between T2 and T3, the junction between T2 and T7 and T8, the junction at the existing road to T24, part of the road between T19 and T20, and the T17 junction to T22. The Peat Slide Risk Map shows the locations for these floating roads. These will be constructed with geogrid with a 400mm layer of 100 to 150mm stone with transverse pipework at 50m intervals, overlain by a geotextile with a 200mm layer of 100mm crushed stone. The coarse stone is proposed to permit surface water to pass beneath the road. The potential to alter the site's hydrology is acknowledged by the applicant to be particularly pronounced where roads are proposed to be constructed along the contour. It

is noted that this is proposed for much of the site. The applicant proposes to construct the roads here in a manner that transfers the surface water runoff across the road without canalising it by piping the flow at regular intervals from the upper to the lower side of the road and distributing it to the bog surface at breakout points. Where roads are aligned perpendicular to contours, roadside drainage with silt traps and silt fences is to be provided.

The appellants raise a number of concerns about the proposed road network. These include the roads becoming a drainage pathway for some runoff waters and consequent convergence towards the local natural stream system, the effects by drying out of the blanket bogland, the conflict between providing embankments with peat along the roadside while seeking to maintain the passing of water through the roads, and a lack of clarity on the proposals to reducing compression in areas of deep peat.

In considering the impact of the proposed road network, I again note the extensive nature of it. I further note the extent of 'specialist' treatment required in areas of deep peat and the focus of such necessary treatment upslope of the westernmost peat repository site and at the main stream crossing leading from Lough Nacroaghy. The development of the road network within the site will ultimately increase runoff. This potentially has implications for affecting the natural state of the lands in the vicinity, for drying out of bog, and for impacting on siltation. There is a significant number of mitigation measures proposed which invariably demonstrate the complexity of issues that require managing in this instance. The changes in hydrology from the road network will have impacts on the blanket bog itself. These roads will fragment the bog and they will intercept overland flows. This will result in parts of the bog drying out. I acknowledge that parts of the blanket bog have been degraded somewhat by peat harvesting, forestry and livestock grazing but I also acknowledge that there are significant areas with intact bog and these will be affected. The development of the road network will impact on the streams traversing the site. The possible sedimentation impacts and interference with natural flow exacerbate concerns about the potential effects on the river system in this area. Finally, ongoing monitoring and maintenance for such a complex array of mitigation measures must be a prerequisite for ensuring a development such as this can function. While a regime appears to be developed for the construction works, provisions for the longer term operation of the wind farm are unclear. A proposal to carry out six monthly monitoring for ecological change, for maintenance and function control of the drainage system in this environment with such a complex arrangement of management and mitigation measures presents a significant difficulty for the scheme. The consequence of the roads becoming significant drainage routes proves to be a real concern for this development.

### 10.6.4 Excavation of Turbine Sites

I note that peat depths at the locations of the proposed turbines range from 0.0m to 2.1m. I further note from the applicant's peat slide analysis that turbines T2, T9, T20, T21, and T22 are to be developed on, or partially on, areas defined as having deep peat. The volume of peat to be excavated for cranage areas and foundations is estimated at 20,790$m^3$. Excavation will involve the levelling of the bedrock surface. The total diameter required for the excavation of each turbine will be 18m. Approximately 300$m^3$ of concrete will be required for the construction of each turbine foundation. It is proposed that, where dewatering of excavations is required, this will be to silt traps with flow to channels or by passive overland flow at each location. Peat excavated from turbine foundation areas is to be preferentially used to landscape around the cranage areas, with excess peat taken to the peat regeneration areas. A 150m buffer zone is to apply from proposed turbines to the main streams draining the site.

The appellants have raised concerns about the draining of fill around turbine bases that will result in point drainage of surrounding blanket bog and the failure to consider alternatives such as piling. It is further submitted that the steep slopes associated with the ridge where turbines are to be sited are likely to result in significant problems for excavating and for stabilising the peat around foundations. The appellants again point to resulting enhanced runoff and drainage and the effects on the stabilising of peat at the margins of the completed foundations. It is maintained that there will likely be a deterioration in the colloidal content of runoff as it reaches potential receptors. It is argued that the conventional measures being employed are unlikely to work on finer sediments, although this was notably rebutted by the applicant at the Oral Hearing. It is submitted that the management of the peat at the margins of the foundations is particularly important as they represent a zone of weakness in terms of water ingress and structural stability. The potential for peat movement is noted where there already exist planes of weakness and such risks are seen as high where slopes along the ridge are greater than 2 degrees. It is maintained that massaging the peat into merging with the slope as proposed will not work as the peat will remain disturbed and the potential for the development of fissures remains. It is further submitted that the changes in hydraulic gradient due to the excavation will gradually induce subsidence and fissuring and this will increase the ingress of water and the potential for failure.

Once again the vulnerability of this site to potential peat slide is being highlighted. Evidently, the steep slopes on which turbines are proposed to be erected, the deep excavations involved, and the stability of the development at these locations are being called into question. It may well be considered that these could be viewed as typical issues to be addressed for any upland wind farm development. However, it is the risks associated with the applicant's methodology and the ongoing management of these risks which must be under scrutiny and continue to produce an insufficient level of clarity. What further concerns me in light of my considerations set out earlier is the vulnerability

and wholly inappropriate extent of likely impact associated with the development at the south-western end of this site. The complexity of the development of PRA-1, the extent of natural deep peat in this general area, the development of T20, T21 and T22, the development of the road network in such terrain, and the significant interference with this area's natural hydrological state reinforce my conclusions that the risk is unacceptable.

### 10.6.5 The Borrow Pits

Four borrow pits are proposed on the site. I raised a number of questions with the applicant during the Hearing on the proposed borrow pits, seeking information on the level of assessment that went into determining the suitability of Borrow Pits 1 and 2 that are located within forestry, the quality of stone to be extracted, the volumes of stone, the availability of what would constitute 'useful' stone, and the estimated volumes of waste material arising from the development of the borrow pits. Mr. Keohane's second submission to the Hearing sought to address some of the key issues raised. The criteria used for general pit selection were identified. The actual locations were selected from considering the identification of rock outcrop / subcrop from the Geological Survey. It was submitted that field survey near the locations confirmed rock outcrop in the area. Winning of rock is proposed to be by rock breaker.

I note that the appellants raise concerns about how the borrow pits affect groundwater and will create significant runoff with the known rainfall in this area. I note that the EIS does not address the effects of these small quarry developments on the hydrological regime. This is a further shortfall on the level of information necessary to allow for an adequate assessment of this development.

When one considers the quarrying nature of these elements of the overall development and the importance of this component to the overall development, it is my submission that very little is known or understood about the borrow pits, how they will be developed, why their locations were selected, if they will prove to satisfy need, and, importantly, how will they impact on the natural conditions of this site and its environs. This again demonstrates the deficiency of the application and the submitted EIS in particular.

### 10.6.6 Conclusions on Peat

Overall, it is my submission that the proposed peat repositories are likely to carry a high risk of failure. Furthermore, the applicant's design methodologies for peat storage are inconsistent and cannot be relied upon. There is a serious lack of clarity on a wide range of critical issues. There are significant drainage concerns arising from the development of the proposed internal road network and the management of risk from the excavations at turbine sites is also of concern. The outcome of these findings is that the proposed

development forms a serious risk to people, flora, fauna and the natural environment of this area.

## 10.7 Potential Impacts on Pollnapaste and Lough Derkmore

A number of appellants and observers raised concern about the potential effects of the proposed development on Pollnapaste, a cave system and designated geological heritage site, and on Lough Derkmore, a source of public water supply, both of which lie to the north of the appeal site. The former lies approximately 2.1km from the site and a stream from Lough Derkmore (700m from the site) links both. Pollnapaste is regarded as the most extensive and best developed karst in Dalradian Supergroup marbles in Ireland. The appellants Dr. Catherine Histon and Prof. Vaccari and Gweebarra Conservation Group detailed the specific concerns. Potential drainage concerns northwards were also supported by Prof Johnston at the Oral Hearing. The issues relating to potential impacts are linked to possible subsurface drainage due to karst and limestone and to drainage northwards affecting the Gweebarra River catchment. The appellants note that the site is underlain by a most complex geology and argue that the precise location of each subsurface for each turbine should be indicated to determine stability.

The applicant submits that the Falcarragh Limestone Formation does not underlie any part of the site, or at least has no surface expression. It is submitted that it lies at least 700m from the nearest turbine and that at these distances the presence of karst features is not a concern for construction and operation. It is suggested that even if the Falcarragh Limestone Formation underlies the site at depth it would not have been subject to the recent karst development as seen at the Pollnapaste cave system and would be isolated from surface water flow. It is further submitted that the geological formations that underlie each turbine are given in Section 5.2.2.2.1 of the EIS and that the turbine layout is also superimposed on the GSI bedrock geology map, in Figure 5.2-2 in Appendix B of Volume 2 of the EIS, to show the precise underlying bedrock formation at each turbine. It is noted that the nearest point of the Pollnapaste cave system is 2.1km from the nearest turbine. It is submitted that the EIS provides sufficient information on the location of the limestone formations in the region to make a reasoned conclusion that karst is not a concern at the site. It is also stated that the pipeflow channels found within the bog on the site have no relationship with swallow holes found in karst regions. With regard to subsurface drainage, it is submitted that the surface water catchment map in the EIS (Figure 5.2-3 in Appendix B of Volume 2) shows the surface water catchments where the turbines are located and it is stated that turbines are not located within the Gweebarra River catchment. It is stated that the surface water divide between the Gweebarra River and the rivers, lakes and streams to the south runs just north of the northern array of turbines (T10 to T13) and that the proposed development is drained entirely to the south. In relation to Lough Derkmore, it is submitted that the lake is glacial in origin and not karst and that a stream from the lake flows through the Pollnapaste cave system and is credited with the cave's development. It is submitted that runoff from the wind farm will

not flow to the north to the lake and there is no relationship between the abstraction and the karst features at Pollnapaste.

In addressing these issues, I must first note that no reference was made within the EIS to Lough Derkmore and its importance and relevance as a public water supply source, despite its close proximity to the wind farm site. There was no consideration given in the EIS to any potential impact on its water quality. Yet again this demonstrates a serious deficiency in the level of detail provided in the EIS and points once more to a seriously inadequate document. The applicant sought to rectify this omission through correspondence in the form of responses to the appellants' submissions but this does not ignore the fact that critically important issues relating to 'Water', as required under EIA legislation, should have been considered and assessed in the EIS and were not.

The next point to note is the level of detail on geology provided by the applicant. Reference is made in the responses to appellants' concerns to the geological formations that underlie each turbine being given in Section 5.2.2.2.1 of the EIS. This subsection of the EIS is an overview of local bedrock geology and does not detail the geology underlying individual turbine sites. The applicant further submits that that the turbine layout is also superimposed on the GSI bedrock geology map, in Figure 5.2-2 in Appendix B of Volume 2 of the EIS, to show the precise underlying bedrock formation at each turbine. I put it to the Board that this Figure clearly does not show this. This reinforces the seriously inadequate level of detail required for such a significant infrastructure development where there is a very complex geology present. It is most worrying that there are no specific details on the geology at each turbine site to qualify the reliance upon the illustrative GSI geology map upon which the applicant relies so much on. The assessment undertaken by the applicant for this development comprised a desk study, a site walkover that included peat depth probing, collection of data from the GSI and data interpretation. This is wholly deficient as the geology at each turbine site must be known to inform those responsible for assessing the potential impacts that may result. I understand the appellants' concerns when there is such an obvious lack of baseline information which is pivotal to determining potential impacts on important resources such as Lough Derkmore and Pollnapaste and, indeed, in the context of adequately assessing stability at each turbine site. This deficiency constitutes one of the most notable that undermines greatly the value of the submitted EIS.

With due regard to the above deficiencies, it makes the ability to determine whether limestone definitively does or does not underlie the turbine sites, and to determine if there are or are not potential drainage concerns associated with this, an impossibility.

Finally, I refer to the potential drainage northwards from this site in the direction of Lough Derkmore and Pollnapaste. I note the applicant has determined from the walkover of the site that the northernmost part of the site on which it is proposed to locate turbines T10, T11, T12 and T13 drains southwards. It is my submission to the Board that, having

assessed the mapping and drawings showing the siting of the proposed turbines and having walked these locations, the potential from these turbine sites, cranage areas and the associated road system to drain northwards can potentially arise. What is then of concern is that peaty waters draining from this part of the development could potentially interfere with the natural drainage of this area, impacting on the natural ecology of the area and on water quality. The applicant's failure to specifically provide information to categorically refute these drainage concerns is in itself a concern and it demonstrates to the Board an inability to fully rely on the applicant's claims. It also reinforces the need for the applicant to have considered in detail the effects on the catchment of Lough Derkmore, the absence of which is evident from the application details.

## 10.8 Separation Distance between the Development and On-Site Streams

The appeal by Dr. Fiona Hardy submits that the siting of 17 of the 22 turbines is contrary to the Development Guidelines and Technical Standards of the County Donegal Development Plan, notably the distance from lakes and streams. While the referenced separation distance relates to Development Plan provisions, I note that the issue of separation distance itself from streams raised requires clarification.

The first point needing to be made is that the separation distances referred to by the appellant applied under the previous Plan and the new Plan no longer contains these requirements.

Next I note that the applicant, in Section 5.2.5.2 of the EIS, sets out the hydrology mitigation measures and includes a measure that a 150 metre buffer from proposed turbines to the main streams will be employed to minimise release of sediment-laden storm water runoff. Thus, it is apparent that this measure is to apply to the main streams on the site.

The Planning authority, in its written response to appeals, has submitted that four of the turbines (T6, T22, T24 and T25) are located within 150m of local streams. The applicant has submitted that these are ephemeral drainage ditches.

## 10.9 Noise

### 10.9.1 Introduction

Many third parties and observers have raised concerns about the potential noise impact arising from the development. The proximity of proposed turbines to those living in the vicinity of the wind farm, such as along the Meenalargan Road, was a notable issue at the Oral Hearing.

### 10.9.2 Noise Sources and the Existing Environment

When considering the issue of noise emissions, I am conscious of acknowledging both mechanical noise and aerodynamic noise. The former is derived from moving parts contained within the proposed turbines, such as from the gearbox or generator. Noise derived from this source may have tonal components and this may also be dependent on wind speed and the consequent rotation of the blades. However, I do not intend to focus on this noise type in this assessment as modern turbines generally provide for insulation that prevents the transmission of mechanical noise. Thus, it is aerodynamic noise that merits consideration as the likely potential dominant noise source for the local community.

I acknowledge that aerodynamic noise could be significant from large turbines. The aerodynamic noise derived from turbines increases with wind speed and rotational speed. As distance increases from a noise source the noise spectrum becomes more biased towards the low frequencies. This wind turbine noise fluctuates at a rate depending on the speed of rotation. This is referred to as 'blade swish'. As distance from a turbine increases this effect generally reduces. I note that the response to wind turbine noise would be dependent on an array of factors and that individuals respond differently to similar noise. For example, it is reasonable to conclude that different people have differing degrees of hearing sensitivity. I also note that noise attributable to a neighbour or from a community source causes more annoyance in general than from a source such as road traffic noise, which is not attributable to any specific individual. What is of particular relevance in determining the noise impact of the proposed development on the residents in the vicinity of Straboy and Meenalargan Hills is that one can reasonably state that the residents experience an environment where there are low background noise levels generally. Perhaps, road traffic, wind or farm-related activities comprise the notable sources that influence the noise environment as exists. But at night time one expects that the significant noise sources impacting on the local area would be substantially reduced and low background noise would generally prevail as the extent of man-made noise sources decline. The impact at night time from the proposed development by the swishing of blades in Straboy or Meenalargan could potentially affect sleep patterns and could potentially generate stress where turbine noise is audible, particularly where windows may be left open. The distinctive difference with blade swishing, when compared with other types of noise experienced and accepted within a rural environment, should be acknowledged as relevant in assessing noise impact. This type of new noise could be perceived to change the character of the noise environment.

Wind turbine noise evidently can only occur when turbines are rotating. The 'cut-in' wind speed is generally accepted as being between 3 and 5 metres per second at hub height and the 'cut-out' speed is around 25 metres per second. Noise levels are found to be greatest when the wind is blowing from the turbines in the direction of a sensitive

receptor. I acknowledge that turbine noise may be masked by vegetation. However, I note the exposed nature of the site at Meenalargan and Straboy Hills and the many exposed houses in the vicinity. Another important issue is the potential difference in wind speeds at the upper levels of a turbine and those experienced at ground level. With the tall structures proposed at Straboy it is perceivable that wind speed could be sufficient to rotate the proposed turbines while at lower levels the wind experience is not notable or less detectable. The applicant's background noise assessment becomes an important feature to determine potential consequences in this scenario. This is a relevant issue in the assessment below.

### 10.9.3 Wind Energy Guidelines

Section 5.6 of the Guidelines refers to 'Noise'. The Guidelines acknowledge much of what has been referred to above in discussing noise in general. It is noted that good acoustical design and carefully considered siting of turbines is essential to ensure that there is no significant increase in ambient noise levels at nearby sensitive receptors. It is also noted that sound output from modern turbines can be regulated to mitigate problems. The Guidelines require that noise impact should be assessed by reference to the nature and character of noise sensitive locations. They require noise limits to be applied to external locations and that such limits should reflect the variation in both turbine source noise and background noise with wind speed. The following is particularly noted:

"*In general, a lower fixed limit of 45 dB(A) or a maximum increase of 5 dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours. However, in very quiet areas, the use of a margin of 5 dB(A) above background noise at nearby noise sensitive properties is not necessary to offer a reasonable degree of protection and may unduly restrict wind energy developments which should be recognised as having wider national and global benefits. Instead, in low noise environments where background noise is less than 30 dB(A), it is recommended that the daytime level of the LA90, 10min of the wind energy development noise be limited to an absolute level within the range of 35-40 dB(A)*

*Separate noise limits should apply for day-time and for night-time. During the night the protection of external amenity becomes less important and the emphasis should be on preventing sleep disturbance. A fixed limit of 43 dB(A) will protect sleep inside properties during the night.*

*In general, noise is unlikely to be a significant problem where the distance from the nearest turbine to any noise sensitive property is more than 500 metres.*"

A reasonable interpretation of the limits then recommended above would be:

- A fixed limit of 43 dB(A) at a noise sensitive location for night-time hours,

- 45 dB(A) or up to 5 dB(A) above background noise, whichever is the greater, at a noise sensitive location for daytime hours, and
- 35-40 dB(A) at a noise sensitive location for daytime hours where background noise is less than 30 dB(A).

I note that noise conditions attached with a grant of planning permission for wind farm development in Ireland generally reflect the above provisions.

With regard to proximity of houses to turbines and the 500 metre separation distance alluded to in the Guidelines, the applicant submitted a drawing to the Oral Hearing (Additional Submission A) showing the 500m zone applicable to the turbines and detailing the distance of houses shown on the drawing relative to turbines. Of the houses referred to, it was shown that none were within 500 metres from any turbine.

I note that much detail and discussion was provided at the Oral Hearing into the provisions of ETSU-R-97 "Assessment and Rating of Noise from Wind Farms" for guidance on the assessment of wind turbine noise. This is UK planning policy guidance that has been referenced in the Wind Energy Guidelines. With this understanding, I must determine that the prevailing guidance on noise at present is that set out in the current national Wind Energy Guidelines. This is not to suggest that much cannot be learned from international best practice or relied upon but that the guidance to which the Board would ultimately be required to have due regard to would be that set out by the Department of the Environment.

### 10.9.4 The Applicant's Submission

*The EIS*

The submitted EIS is seriously deficient in relation to the issue of noise as there was no background noise survey undertaken. At the time of the making of the application and the assessment of the development by the planning authority, the issue of noise could not have been assessed by reference to the nature and character of noise sensitive locations in accordance with the requirements of the Wind Energy Guidelines. This significant gap in data undermines the value of the applicant's assessment and the value of the submitted EIS. There could be no true comparison between the ambient noise levels and the predicted noise levels. There could have been no true understanding of quiet areas and the degree of sensitivity of noise sensitive receptors in the vicinity. The applicant then proceeded to make predictions about noise levels from turbines while not knowing the scale of impact over the existing noise environment resulting from the proposed development. What was used for the assessment produced in the EIS was typical generated noise levels from wind velocities, where hourly values were given of typical noise levels generated from the interaction of foliage / vegetation effects at wind velocities above 8 metres per second. Predictions were then made for noise levels at a

wind speed of 8 m/s at the nearest noise sensitive point for the wind farm. I must question how one can accept the adequacy of such an assessment when one does not truly have an understanding of the background noise levels in order to determine the significance of predicted change.

The applicant's predictions produced findings that the highest noise level is 45.73 dB(A) at a wind speed of 8 m/s at the nearest sensitive receptor, that there are a total of three houses where the predicted noise level is over 45 dB(A), and that there are an additional 16 houses where the predicted noise level is over 43 dB(A). The EIS acknowledges the potential impact of the scheme to increase noise levels locally but refers to the site's remoteness and to the limited number of dwellings in the area leading to the probability of noise provoking complaints as being slight. This is a wholly inadequate assessment as it does not determine the impact of the development based upon an understanding of the noise environment in which this local community actually reside. Also, it assumes the number of houses in the vicinity could be considered few in number, and it makes a broad assumption on likely complaints without reasonable foundation for such a determination.

*The Background Noise Survey*

It is apparent that the deficiency in the submitted EIS on background noise was recognised by the applicant before the start of the Oral Hearing. The applicant introduced findings of a background noise survey as part of its submission to the Hearing. Producing such a background noise survey late into the planning application process is a most unsatisfactory approach to informing the decision-making authority and the community. I would suggest that it is unfair on third parties to introduce such an important component of baseline information at such a late stage of the planning process to allow for a full and proper third party input. Ultimately, its late introduction cannot rectify the serious deficiency in the EIS.

At the Hearing, an overview of the new baseline noise survey was discussed, as were findings from a re-running of the wind farm software. The baseline noise survey was stated to have been undertaken over a 12 day period a short time before the Hearing, concluding a week before the Hearing commenced. Continuous noise monitoring was carried out at three locations - to the west, south and north-east of the proposed site. The baseline survey locations were stated to be selected on the basis of their location relative to wind turbines and the location of the most sensitive properties. It was found that the local environment is predominantly controlled by wind influence on vegetation, sound of local distant streams/rivers, low-level agriculture activity and road traffic from the local road network. The details of the background noise levels for the three measured locations were provided in Table 3 of Mr. Brendan O'Reilly's submission to the Hearing. It was acknowledged that the audibility of noise from wind turbines is greatest at lower wind speeds, i.e. less than 6 m/s. The applicant's analysis concluded that a comparison of the

predicted turbine noise levels at the nearest residence shows compliance with the day time and night time noise derived limits as recommended in the Wind Energy Guidelines. The predicted noise level was found to be below the background +5dBA derived limit, the 40 dBA daytime and 43 dBA night time for low wind speeds at all residences. It was submitted that the modelled prediction was a worst case scenario, with the prediction assuming that the wind will be downwind from all turbines at the same time.

Considering the above, the overall findings presented by the applicant at the Hearing suggest that aerodynamic noise would not be a source of nuisance for the residents in the vicinity of the proposed turbines. Notwithstanding this, it is reasonable to make the following observations in relation to the applicant's submission:

- The residents in the vicinity of Straboy and Meenalargan Hills experience an environment where there are relatively low background noise levels generally. From the applicant's background noise survey it can be seen that, at low wind speeds, when the turbines would be expected to be functioning, the background noise levels east and west of the wind farm show that a low noise environment prevails.
- It is generally accepted that noise attributable to a neighbour or from a community source causes more annoyance in general than from a source such as road traffic noise, which is not attributable to any specific individual. There is a distinctive difference between aerodynamic noise from turbines and other types noise experienced in a rural environment, such as from wind, rivers or streams, farm-related activities, or distant traffic. This type of new noise could be perceived to change the character of the noise environment where it is audible. There can be no suggestion that aerodynamic noise from the turbines will not be audible by residents in the vicinity and it is this reality which cannot be easily dismissed as predictions address derived limits in a general sense. This is not to devalue the setting of limits to be achieved but rather it is a simple observation that the character of a quiet rural noise environment can be altered by this development and this effect should be acknowledged as such. For some this change will constitute a nuisance.
- At night time, one would expect that the noise sources that impact on the local community would be substantially reduced and low background noise would generally more likely prevail as the range of man-made noise sources decline. In my opinion, it is significant that the background noise findings presented in Table 3 of Mr. O'Reilly's submission do not reflect this and, indeed, what is striking is that day and night background noise levels are very similar throughout these findings. If noise from man-made sources does reduce at night, then the effect on the character of the noise environment by the wind turbines evidently is likely to increase and any nuisance perceived is likely to intensify.
- Finally, the Wind Energy Guidelines require that noise impact should be assessed by reference to the nature and character of noise sensitive locations. In my opinion, the baseline noise survey should require measurements to be taken at the

nearest noise sensitive locations. I observe the details provided at the Hearing on where baseline noise survey equipment was sited. It is apparent that, for Houses H18 and H28, the monitoring locations were adjoining existing dwellings as would be required. In contrast, I submit that the monitoring location for House H25 is a significant distance from it. The applicant stated this location was approximately 100 metres from the house and that if noise measurements were taken beside the house the results would have been higher given the existence of the adjoining evergreen forestry. It is my submission that H25 is located where there is a low noise environment. The reliability on the background noise findings at this location could be called into question where it is considered that the monitoring location is not truly reflective of the noise environment at this property.

Further to the issue of background noise, I note the submissions of Mr. Bowdler for the third parties. The initial submission was reasonably made in the absence of a background noise survey being received. The second submission sought to address the background noise survey received at the Hearing. Reference is made to the deficiencies appearing in the assessment undertaken by the applicant, with regard to compliance with the monitoring requirements of ETSU-R-97, which the applicant stated was used to make the assessment. The matters relating to whom monitoring locations were agreed with, where measurements should be made, where monitoring equipment was placed, allowance for periods of rainfall, the length of the survey, and the use of a low wind measurement mast were all raised. The extent of information provided by the applicant's formal submission on these issues was relatively scant but cross-questioning allowed for a degree of clarity. A further point of note was reference to the applicant failing to consider two houses to the north-west of the site. The latter houses are sited in a particularly quiet noise environment. The nearest house is stated to be only 340 metres from the nearest turbine and it is argued that noise levels would be over 50dB.

Overall, it is clear, notwithstanding the applicant's predictions on noise deriving from the wind farm, that there are shortfalls in the applicant's assessment. Attempts were made by the applicant in the run-up to the Oral Hearing to fill in the gaps where there were substantial application deficiencies. The EIS was clearly significantly deficient and there are areas of the applicant's assessment where it can reasonably be argued that deficiencies remain. I acknowledge that the nearest dwelling referred to by Mr. Bowdler is an unoccupied dwelling and is in the control of the applicant. However, its omission in the assessment only seeks to affect reliability of the comprehensive nature of the applicant's overall approach to noise assessment in this application. Where there is evidently a low noise environment, the need to consider assigning noise limits of between 35 and 40 dB(A) at a noise sensitive location where background noise is less than 30 dB(A), or to determine whether a limit of 5 dB(A) above background noise is attainable, needs to be established. Whether one can wholly rely on the conclusions drawn from the analysis undertaken could reasonably be questioned in this instance. Clearly, the likely

increase in ambient noise levels at some locations could potentially be construed as significant and, thus, the reliance on compliance with a fixed limit such as 45 dB(A) would be queried.

### 10.9.5 Construction Noise

I note the short term nature of the construction period for the proposed development. While no national limits are set for construction noise, I am satisfied that the development would not be untypical of similar infrastructure projects and that nuisance caused by construction activities would be short-term. Good site management is pivotal in reducing nuisance. Furthermore, construction periods would be controllable by way of attaching a condition with a grant of permission to limit days and times of construction, thus reducing potential adverse impact to residents nearby. Overall, construction noise impact should not be significant.

## 10.10 Shadow Flicker

The casting of shadows by turbines and the rotation of blades can occur with wind farm development in certain defined circumstances and can cause potential nuisance to residential properties in the vicinity. The sun is required to be shining and to shine at a low angle, notably after dawn and before sunset. As well as this, a turbine is required to be between the sun and the affected property and there must be enough energy to make the turbine blades move. Where shadow flicker can potentially occur the Wind Energy Guidelines recommend that it should not exceed 30 hours per year or 30 minutes per day for dwellings within 500 metres. The Guidelines also note that, at distances greater than 10 rotor diameters from a turbine, the potential for shadow flicker is very low.

For the assessment of impact from shadow flicker, the applicant considered all dwellings within 800 metres of proposed turbines. It was determined that there was a total of five houses that could potentially be affected. Of these, four are in the ownership of landowners who have an interest in the wind farm. The conclusions on each were as follows:

- House 10, located to the south of the site, has a predicted number of hours of 15.2 per annum, with the nearest turbine being 738 metres. Due to the presence of hedgerow no effects are predicted.
- House 11, again located to the south, has a predicted number of hours of 10.44 per annum, with the nearest turbine being 936 metres.
- House 18, located to the south, has a predicted number of hours of 10.30 per annum, with the nearest turbine being 793 metres.

- House 28, located to the north-east, has a predicted number of hours of 22.15. The nearest turbine would be 604 metres. There are no windows on the elevation of the house that could potentially be affected.
- House 29, again located to the north-east, has a predicted number of hours of 19.81 per annum, with the nearest turbine being 594 metres. The potential shadow would be screened by existing forestry.

In considering this issue, I note that there are no occupied dwellings within 500 metres of proposed wind turbines. I further note that very few fall within the 10 rotor diameter distance and that none come near the exceedence limits provided for in the Guidelines. I am also of the view that the requirement for a range of necessary conditions to be in place for shadow flicker to result will frequently not occur in this area as appropriate weather conditions coinciding with direction of shadow will not likely converge for each day shadow flicker could potentially result. With due regard to these observations, the potential for the proposed development to have an adverse impact through shadow flicker is, therefore, highly unlikely. Notwithstanding this, in the event that any nuisance could potentially arise, I note that the technology is available to prevent shadow flicker from affecting neighbouring properties. A simple and effective measure to address concerns is to turn off offending turbines during periods when they are most likely to potentially create shadow flicker. A turbine can appropriately be programmed for this to occur. Automatic controllers can be employed to stop those turbines which could give rise to shadow flicker for the hours in any year that the phenomenon could occur. These can be incorporated into the controls of the turbines and can be programmed to continually monitor sunshine intensity and wind direction and can automatically take the turbines out of operation to prevent moving shadows affecting houses. With such mitigation available, I do not consider that shadow flicker could be a potentially significant issue arising from the proposed development at Straboy.

### 10.11 Grid Connection

This issue is altogether quite unclear from the various submissions made by the applicant.

I note firstly the details provided in the EIS. Section 3.4.3 of the EIS states

"*The project has a valid grid connection application for the ESB Networks Group Processing Approach Gate 3. The turbines will be interconnected by underground cable to an on-site sub-station and from the sub-station by 308m underground and 677m overhead electrical lines into the National Grid at the proposed Tievebrack switching station ... The Tievebrack switching station has a proposed capacity to connect a power output of 110 MW to the grid (source: EirGrid). An Bord Pleanala granted a planning permission for a wind energy development with 30 MW so far, which will be connected to*

*Tievebrack. The development at Straboy has 50 MW proposed generation capacity. So there are still 30 MW remaining.*"

At the Oral Hearing, following my questioning on the issue, the applicant made a further submission on the grid connection. It was submitted that it was the applicant's original expectation that the capacity at Tievebrack would have been available for direct connection but that Eirgrid has indicated a preference for connection at the Clogher sub-station. It was further submitted that the applicant lodged an application for connection of 78.2 MW in December 2009 and the application was accepted and is currently waiting for a connection offer. No new connection offers are expected until all Gate 3 offers have either been accepted or lapse. The applicant then submitted that Gate 3 includes 105 MW capacity at the new Tievebrack substation for the 110 kV line which is currently under construction and that this capacity was allocated to the Cronacarkfree wind project. It was acknowledged that Cronacarkfree Wind Ltd. was granted permission by the Board in 2011 for 13 turbines, which if rated at 2.3 MW equates to c. 30 MW. It is noted that this permission is subject to judicial review. The applicant stated that they are unaware of any other projects in the area that are capable of taking the excess capacity of 75 MW. It was stated that Clonacarkfree Wind Ltd. has indicated an interest in disposing of this excess capacity and that it is possible that this capacity could be transferred to the Straboy project provided Eirgrid approve such a transfer. The applicant further clarified that CER has set out rules for splitting and relocation of grid capacity in its Connection Offer Policy and Process (COPP) decision and that, under COPP, where wind farms have separate owners, there may be an option to split the capacity and relocate part of that capacity to an alternative site. Capacity relocation is generally based on that capacity being connected back to the same meshed node. The applicant acknowledges that, subject to Eirgrid approval, there may also be the option of relocating the grid capacity to the new Clogher station and that this connection methodology would entail a separate planning application.

The appellant Liam McLaughlin in his written submission to the Board stated that he cannot find any evidence of an EirGrid Gate connection for the proposed wind farm. The observer Charles Swingler at the Oral Hearing addressed the issue of grid connection. A number of points arising from this submission, which were not challenged by the applicant, are worthy of note. Mr. Swingler stated he had communicated with EirGrid and that he had been informed that the capacity allocated to the Clonacarkfree wind project was originally assigned to Tievebrack at the start of the Gate 3 process but was re-assigned to the Clogher node, with a maximum export capacity of 105 MW. It was further clarified that EirGrid had not published the expectant capacity at Tievebrack and that there is not 105MW of capacity at Tievebrack. Mr. Swingler argued that the fact that capacity at Tievebrack will be reserved and that the Clonacarkfree 105 MW has been assigned to Clogher indicates that, even if capacity was split and transferred to Straboy, the output from both wind farms would still have to be connected into the Clogher station. Mr. Swingler noted the Clogher station is a new station to the north east of Donegal town. He estimates that a total connection length from the Straboy wind farm to

the Clogher station would be approximately 41km if it was to follow the route of existing lines. He expressed concerns for the area of the effects of grid connections to Clogher from Straboy and Clonacarkfree wind farms.

Having regard to the above, it is apparent that at present EirGrid is requiring connection to the Clogher substation and not to Tievebrack as submitted in the EIS. Based upon the unchallenged submission by Mr. Swingler, the possibility or potential to gain connection at nearby Tievebrack appears most unlikely. Notwithstanding this, it is clear that such a connection option is not what is presently envisaged or provided for by the facilitating authority. The connection to Clogher station is the only connection option on offer. The Board should understand that Clogher station is located a significant distance from the proposed wind farm. It is evident that the provision of such a lengthy overhead line (either 38kV or 110kV), in itself and/or along with an additional line to serve Clonacarkfree wind farm, could potentially have significant planning and environmental impacts arising, not only from the length and the sensitive nature of the terrain through which it would likely travel in this part of Donegal but also because of the cumulative impact with other overhead lines developed and being developed in this area. This should be acknowledged as an important additional environmental burden that cannot go unnoticed in the assessment of this application. The 'unknowns' in terms of grid connection, in my opinion, are wholly unacceptable in this instance.

I note the Wind Energy Guidelines references to access to the electricity grid in Section 4.3 of those guidelines. It is stated that details of indicative and feasible options for grid interconnection lines and facilities should in general be adequate for a planning authority to consider a wind energy application as the precise capacity required for connection will not be known until planning permission is obtained. Suggested content for the indicative and feasible options include (a) the general direction of connection, (b) connecting line capacity (e.g. 38 kV, 110 kV) and (c) line supporting structure (e.g. single pole, twin pole, lattice tower). The applicant's details on grid connection have fallen far short of what should be provided in this application. One does not know anything of the suggested content for the indicative and feasible options. If anything has resulted from the applicant's submission it is confusion and a calling into question of the effects of the options potentially available.

The option of not providing substantive detail on the grid connection, particularly in this sensitive area where there is an array of developments potentially producing a significant cumulative impact for the local environment, should not be available to the applicant, in my opinion. It is a very real potential outcome in this case that one could end up permitting a wind farm development and that its grid connection is found to be unacceptable due to its environmental impact. This is an instance where splitting the approval process for a wind farm site development from the necessary wind farm grid connection approval process cannot be justified and defies proper environmental impact assessment. While the Guidelines appear to provide an 'opt out' clause for applicants on

the level of detail to be provided on grid connection at the application stage for a wind farm development, it is important to note that they also state that best practice would suggest that an integrated planning application that combines grid interconnection information together with details of the wind energy development should be submitted to the planning authority. The Guidelines then go on to state that, if this is not possible, then the planning authority should agree in advance with the developer the information on the grid connection that they consider necessary to enable them to fully assess a planning application for the wind energy project, and which the developer is in a position to furnish. This case demands best practice given the sensitivity of the environment likely effected. The level of detail is entirely substandard and undermines the adequacy of the application itself.

## 10.12 Traffic Impact

A substantial number of appellants and observers raised concerns in their submissions about the potential impact of the proposed development on the established road network serving the area arising from the delivery of turbines to the development site and from the general construction works. My considerations are as follows:

### 10.12.1 Turbine Delivery Route

The applicant has submitted that the turbines will arrive at Killybegs Harbour, which is some 28km south-west of the site. They would travel from here along Regional Road R263 for a distance of approximately 3km until the junction of the N56 and turn left onto the N56 and travel north for 13km through Ardara and then a further 8km through Glenties. They would then exit Glenties via the R250 for approximately 4km and enter the site at the junction with the Loughcrillan Road. Figure 5.6.1 of the EIS illustrates the proposed delivery route.

A visual inspection of the route was undertaken by the applicant. The applicant has referenced use of Killybegs harbour, the R263 out of the town and the use of the N56 for transportation purposes by other wind farm developers previously. A survey considered the main bridge and culvert structures along the section of route comprising the R250 and identified eight structures. A photographic record of road surface defects visible on the R250 within 2km either side of the site entrance was also carried out.

A Traffic Management Plan and mitigation measures to accommodate transportation movements were set out in the EIS. The transportation of turbines would be subject to an abnormal load permit application to the Council. Transportation of abnormal loads is proposed during off-peak times. It was acknowledged that all roads on the proposed route are of varied condition, with visibility limited in sections along the N56, resulting in the need to use a lead vehicle for the abnormal load movements. It was further noted that temporary traffic management will be essential due to on-street parking in the towns of

Ardara and Glenties. Pruning is proposed to be carried out where there is potential interference by foliage along the route. Difficulties with overhead cables traversing roads (notably in Ardara) are proposed to be addressed by consultation with ESB and Eircom. Along the R250 temporary strengthening is proposed for a masonry arch bridge and four culverts.

I note the decision of the planning authority incorporated four conditions relating to traffic, namely Condition Nos. 11, 12, 13 and 19. These related to traffic management, road works and improvements, exclusion of use of certain local roads, and the provision of security relating to potential damage to the local road and bridge network.

It is my submission to the Board that the proposed transportation of abnormal loads associated with turbine delivery could potentially adversely affect the structure and condition of the national, regional and local road network that forms the delivery route from Killybegs. However, it is apparent that the applicant has comprehensively assessed the proposed route, has identified where the potential impacts would likely result, and has drawn up a range of mitigation measures to reduce the significance of the potential impacts. With the implementation of such mitigation measures, I do not envisage there would be any substantial long-term adverse impact for the road network affected. The effects would primarily comprise short-term inconvenience to local road users during off-peak times. I note that the national and regional roads affected are consistently used by HGVs linked to transportation from Killybegs Harbour, quarrying and other activities. I am satisfied that a security or special contribution relating to protecting the road network affected by the turbine delivery routing will be adequate to address any adverse physical impact on the roads or bridge structures in the immediate term after any such impact. Traffic management within settlements will facilitate delivery in an efficient manner to minimise local inconvenience. I do not accept that the delivery of the abnormal roads will result in any significant environmental damage to established hedgerows, tree lines, etc. as limited pruning along road edges will only result. I furthermore do not accept that the transportation through Ardara and Glenties will cause concern in relation to impacts on structures of heritage value within these towns. In considering this issue, I note firstly that the delivery of each turbine would require 11 loads. Secondly, it is submitted by the applicant that turbine delivery vehicles impose a maximum axle load of 10 tons. This is seen to be typical of standard HGV vehicles. Thirdly, the roads through the towns are sufficiently wide enough to allow for transportation of the abnormal loads when appropriate traffic management is put in place. Therefore, the impact arising for buildings and other structures would be expected to commensurate with the impacts resulting from typical HGV movement.

### 10.12.2 General Construction Traffic

For general construction traffic, access is proposed via the local road network from the R250. I note that stone required for road bases is proposed to be manufactured on site by

a mobile crusher. The source of concrete for the development has yet to be agreed with the Council. In the case of each turbine base all concrete would be poured on a single day. Thus, if a 25 turbine development was to proceed there would be 25 days of HGV movements associated with this activity. During the pouring of foundations the number of daily concrete deliveries is expected to be 29. Overall, the estimated number of HGV vehicle movements is approximately 2,567 in total to complete the civil works. I note again that the construction period is estimated to be 24 months. Access would be gained to the site off the R250. With construction materials proposed to be sourced locally, travel to the site would be via the local road network. The Traffic Management Plan, forming part of the EIS, refers to routing, restrictions and maintenance. A more detailed Plan would be required from the Main Contractor prior to the commencement of development to address sourcing of materials, seasonal restrictions, etc. Additional mitigation measures, including advance warning of works, signage, provision of a recovery vehicle, staggering of deliveries, road cleaning and maintenance, etc. are proposed.

I note the planning authority's considerations on general construction traffic. Condition no. 13 of its decision prohibited the use of Local Roads L2583, L6363 and L6483 for reasons relating to preserving the existing local road network and in the interests of traffic safety. The L2583 (Meenalargan Road) is seen by the planning authority as being too narrow with limited carrying capacity. Similarly, the L6363 (Derryloaghan and Cleengort roads) and the L6438 (Line Road), were viewed by the Roads Engineer as not being suitable to haul imported stone or concrete materials.

In general, it is my opinion that access to the site from the R250, and with appropriate traffic management and associated mitigation measures (inclusive of a security), should allow for suitable delivery of general construction materials to this site. Deficient local roads can effectively be avoided by the siting of the principal entrance to the site onto the R250. The applicant clarified the likely sourcing of stone and concrete at the Oral Hearing as coming from Kilcar and Laghy, thus utilising regional and national roads in the main. I note that the applicant at the Oral Hearing made reference also to the planning authority's Condition no. 13. The applicant requested if it would be acceptable if the L2583 could be used at the commencement of the works for the drop off of construction plant closer to the location of a proposed borrow pit, entailing no more than 10 forty foot low loaders over a period of two days. In addition, the use of this road for the first four months of construction, on a weekly basis, by a refuelling vehicle (equivalent to a domestic heating oil delivery) was requested to fuel plant in the vicinity of the borrow pit. In requesting the planning authority to comment on such a proposal to use this local road, Mr. Sweeney was non-committal. I understand the concerns of the local authority about the use of this road as it serves local residents and is very poor in width, alignment and structure. The potential effects on the road itself and the inconvenience to local road users make this proposal undesirable. The applicant could potentially avoid the use of the road by making access available to the borrow pit within the confines of the site. However, it

would be a most circuitous route and, in the event of any grant of planning permission, the Board may consider that the limited traffic volumes proposed and the type of vehicles envisaged to use the road would render the opportunity to use this road a viable option for a limited period.

## 10.13 Archaeological Impact

I note the applicant's methodology employed in the assessment of the archaeological potential of the site, which included a desktop assessment and site walkover. All relevant data sources were considered and a field inspection reviewed the land take and comprised a visual assessment. The applicant's assessment found no Recorded Monuments within the proposed development area, with the closest recorded archaeological site being approximately 1.5km south of Turbines 30 and 31. Furthermore, the applicant's walkover survey revealed no previously unidentified archaeological features within the land take. The applicant's construction mitigation measures comprise written and photographic records being created where the access tracks truncate six townland boundaries on the site, with archaeological monitoring being carried out. Also, as a result of the extent of the proposed earthworks, the removal of topsoil and overburden is proposed to be monitored under licence and provision is to be made for full excavation and recording of any archaeological features or deposits that may be exposed.

I acknowledge the submission of the Department of Arts, Heritage and the Gaeltacht on archaeology. The Department concurred with the applicant's proposed approach to archaeological assessment and recommended that archaeological monitoring should be included in any grant of planning permission. Details of the monitoring required were scheduled in the Department's submission.

It is my submission that it is reasonable to conclude that the proposed development is not likely to result in a significant adverse impact on archaeology on this site, based upon what is known of the site and its environs. Furthermore, it is my conclusion that the separation distance between any known Recorded Monuments in the general vicinity of this area and the proposed development will not result in the setting of such archaeological features being seriously undermined or the visual amenity of such monuments being seriously distorted. Compliance with the proposed mitigation measures and the attachment of a suitable condition to any grant of planning permission in accordance with the Department's recommendation should adequately address concerns on the effects on archaeology.

## 10.14 Cultural Heritage Impact

There can be no doubt that the landscape in this area has influenced the cultural richness of Glenties and its environs, reflected in the many writings, storytelling, traditional music

and art deriving from the area. The Irish language is fully immersed in this heritage, an integral part of it, and the cultural expression of this heritage is best reflected through the traditional first language of the area. This link between landscape, art and the language, which produces the richness of this area's cultural heritage, is often a forgotten or, indeed, misunderstood consideration because its tangibility is hard to define and impact hard to express. Notwithstanding this, such impact should not be avoided in the consideration of impact on heritage. More often than not, impact on heritage focuses solely on the physical, namely archaeology and architectural heritage. This, in my opinion, fails to address, in this case, the true reflection of what can be termed impact on 'cultural heritage'. The Environmental Impact Assessment Directive and the supporting Irish legislation require the identification, description and assessment of the direct and indirect effects of a project on 'cultural heritage'. They do not singularly require assessment of archaeology or architectural heritage. It is readily accepted in practice that this is what is meant by it and which ultimately get focused on in Environmental Impact Statements. In the context of the development now before the Board, it is my submission that it is short-sighted to address only those issues in any substantive manner and to avoid addressing impact on what is otherwise termed 'cultural heritage', including the Irish language.

It is my submission that the landscape has had a significant impact on the development of the area's local cultural heritage and the Irish language is critical to the cultural heritage of the area. Accepting this, it is an understandable conclusion to draw that the distortion of the natural landscape ultimately impacts on the cultural heritage of this area, its sense of place and its sustained community reverence thereto. Determining that the landscape impacts resulting from the imposition of the proposed turbines on the hills overlooking Glenties have an adverse impact in visual terms, in terms of physical disturbance, and in the reading of the natural landscape, then one can reasonably conclude that it does potentially impact on the cultural heritage of the area as this heritage is steeped in the link between landscape and the area's expression of cultural heritage. I am satisfied to conclude, based upon the clear adverse impacts resulting from this proposed development that cultural heritage, other than archaeology or architectural heritage, is adversely affected. The proposed development clearly will not make a positive contribution to the maintenance and sustenance of the rich cultural heritage of the Glenties area. Indeed, it is an unrivalled intrusion, substantively greater than any other development at a local level due to its significant legibility from a most expansive area, unparalled by any other man-made intrusion such as the wooden pole sets of electricity lines lining lower slopes or new houses on the foothills of the upland areas.

For the above reasons I am of the view that the impact of the development sits uncomfortably with the Donegal County Development Plan objective CCG-O-6, which seeks to continue to promote the appropriate and sustainable linguistic, cultural, and social development of the Gealtacht and to maintain the primacy of the Irish language and its associated culture.

Finally, I wish to note that the Board sought comment from Údarás na Gaeltachta on the proposed development but no response was received.

## 10.15 Property Devaluation

It is my submission to the Board that the residents of rural housing in the immediate vicinity of the proposed wind farm site enjoy a wide range of amenities that evidently contribute to residential property values in this area. Houses are sited in the vicinity of areas of high natural and scenic value. They enjoy a relatively quiet rural environment and are not exposed to any significant industrial or non-rural activity. There has been the recent introduction of the powerline development along the lower slopes in this area which invariably introduces a degree of man-man interference in a linear pattern that undermines the unspoilt visual quality of area. The nature of this development, however, is limited in its visibility. Evergreen forestry plantation prevails in extensive locations but this clearly is more of a compatible natural land use in this rural environment. Overall, it is can be concluded that the quality of the environment in which residential properties are located is high. This quality of environment inevitably adds to the value of such properties.

It is my opinion that it is reasonable to conclude that the siting of the proposed wind farm, whereby there are large structures and a substantial road network superimposed on an expansive site in this relatively unspoilt rural location, would be likely not to enhance property values in the vicinity and rather would undermine the value of properties by the nature of the changes to the environment resulting, the proximity to such houses and the high visibility of such structures, and potential nuisance arising, such as noise and shadow flicker. There is the added real concern about the proposed peat repositories which would pose a constant concern for occupiers of dwellings in the vicinity of these two holding areas upslope from houses. While it may be argued by some that it is a question of perception, it can be readily understood why there would be concerns about property devaluation resulting from the definite changes that would result. The amenity value of houses in the immediate vicinity of this site could only be construed as being particularly adversely affected. It is my submission that the value of these houses without a wind farm beside them would be notably greater than they would be with such a facility beside them. I consider that it would be unreasonable to come to any other conclusion.

In relation to the impact on farmland values, I note the submission of Mr. Michael Ward on behalf of landowners of the site at the Oral Hearing. He correctly referred to the land forming this site as not good arable agricultural land and which was suitable only for sheep grazing. I accept that the cash return for the existing use of this land would be very low. Mr. Ward and the landowners ask that they be allowed to use their land to the best advantage and argue that a turbine or two on a farmer's land can substantially increase the income for landowners and the annual premium can provide for a comfortable standard of living. It is submitted that the annual premium paid would be a boost to the area in general. This is an entirely understandable position to take by the landowners. However, it must be concluded that

accepting the property value benefits accruing to the developer and the landowners is accepting the counter disbenefits to those property owners in the vicinity. There can be no getting away from this conclusion.

## 10.16 Carbon Emissions

A range of submissions have been made by appellants and observers with regard to carbon emissions arising from the proposed development and they question the benefits resulting from the scheme. Submissions on the issue included those from the Irish Peatland Conservation Council, Anne Marie McDermott, Joan Hanlon, Siobhan Browne, Bernard Quinn, Eli Gothill, Patrick and Janet McGill, C.R. Nethercoat, and Patricia Sharkey. The removal of significant volumes of peat for the construction of roads and turbine bases releasing vast amounts of $CO_2$, the use of extensive volumes of concrete in the construction of the development, removal of forestry, and the need to use back-up carbon-burning technology to support wind energy generation are alluded to. It is further argued that peatlands, as carbon stores, are a valuable economic resource in times where global trading for carbon credits prevails. The Irish Peatland Conservation Council has submitted that the loss of 16.94 hectares of peatland by the proposal would be equivalent of releasing 84,700 tonnes of carbon into the atmosphere. Subsidisation of wind farm construction and of buying of wind farm energy, and even buying back of wind farms (the example of SORNE wind farm, Buncrana provided as an example), are matters presented in support of third party arguments.

The developer, Mr. John Ward, made a submission to the Oral Hearing on this issue. He provided a calculation of the total $CO_2$ losses estimated due to the proposed windfarm turbine life, back-up, reduced carbon fixing potential, soil organic matter, dissolved oxygen carbon and particulate organic carbon leaching, and felling of forestry. The total $CO_2$ equivalent was estimated at 195, 419. It was submitted that the carbon savings over the lifetime of the wind farm are calculated based on a grid mix of electricity generation and which are calculated at 81,297 t $CO_2$ eq. per year. Under the electricity generation scenario presented, the carbon payback was estimated at approximately 2.4 years.

In light of the strong national, regional and local policy supporting and promoting the development of renewable energy, and wind energy in particular, it could be argued that this issue does not merit consideration, when carbon payback will result in time. However, it is apparent that environmental benefits, whereby significant volumes of peatland are to be removed, are undermined by development on sites such as that proposed at Straboy. Clearly the construction of the development of the wind farm on this site has significant negative impacts in terms of carbon emissions, compounded by the volumes of bog to be removed. While acknowledging that there can be a carbon payback over time, it could reasonably be argued that the potential to reduce effects in a greater manner would be to avoid this bogland location altogether. This is notwithstanding any

other ecological or natural environment losses accruing. To some extent, there has to be a degree of validity in some of the supporting arguments around this issue, whereby there are significant drawbacks in the reliability of wind power generation and there is the consequent need for conventional capacity to be provided elsewhere to sustain the supply of electricity. Providing the system to accommodate wind energy generation is also a significant infrastructural investment, as has been seen by the development of the 110kV line from Binbane to Letterkenny. In conclusion, this is an issue that merits greater policy consideration and is one not readily resolved by the assessment of one wind farm development proposal. There are significant planning and environmental issues revolving around the sustainability of the principle of wind farm development, with carbon emissions being only one component demanding comprehensive analysis and assessment.

## 10.17 Fire Safety

The appellant Damian McCallig raises concerns about the lack of a fire safety statement for the development or the consideration of fire safety issues by the Fire Officer. This is raised in the context of turbines catching fire and also the drying out of peat resulting in a potential fire hazard. The appellant has noted that the site appears proximate to firebreak corridors outlined in the 2006 Donegal County Development Plan. Reference is made to other jurisdictions having made provision for fire safety plans.

The applicant's response to this was to state that, in the absence of any policy or guidance on this issue, this ground of appeal should be set aside.

The planning authority's response to this issue when raised during the processing of the application by the authority was to submit that the applicant will be advised to obtain a fire safety certificate upon receipt of a grant of planning permission.

I note the provisions of the *Wind Energy Development Guidelines* under Section 5.7 'Safety Aspects'. Therein it is stated that there are no specific safety considerations in relation to the operation of wind turbines and the focus moves on to fencing and potential impact from a damaged blade. Consideration is also given over to aeronautical safety and to electricity connection.

It is apparent that there is no specific reference in any formal guidelines to which the Board is required to have regard when considering the issue of the potential fire safety hazard arising from wind farm development. I further note that the current Donegal County Development Plan does not contain a map showing fire break corridors. One would anticipate that the Fire Authority in assessing the development for fire safety considerations (outside of the requirements of the Planning Acts), in the event of a grant of permission issuing, would assess the vulnerability of the turbines, substation and other infrastructure on the site to potential fire hazard arising from a range of potential catalysts, inclusive of peatland fires and the combustibility of materials being used. At

present, the requirements in relation to fire safety lie outside the planning permission process for wind farm development. However, it is apparent that other legislative and approval processes are duty bound to consider the likely potential fire hazard resulting from the development of a scheme such as that proposed.

### 10.18 Electromagnetic Interference

I note that there has been reference to potential electromagnetic interference arising from the proposed development. The effect on any signals passing the site is assumed by the applicant to be negligible as VHF/UHF signals are considered not normally to be disturbed by wind turbines and because the rotor blades are made of glass fibre, containing only a low diameter lightning rod. In the event of any unacceptable effect from the development, the applicant proposes to install repeaters at the turbines in question or is committed to providing an alternative for TV reception.

I note the provisions of the Wind Energy Guidelines in relation to interference with communications systems. The applicant's proposal to address potential impacts on broadcast communications by installation of repeaters or providing alternatives to that which exists meets with requirements.

### 10.19 Public Consultation

I note the following provisions from the Department of the Environment's "*Wind Energy Development Guidelines*" under Section 4.4 titled 'Public Consultation with the Local Community':

*"Planning authorities should encourage developers to engage in public consultation with the local community. While it is not a mandatory requirement, it is strongly recommended that the developer of a wind energy project should engage in active consultation and dialogue with the local community at an early stage in the planning process, ideally prior to submitting a planning application."*

The Guidelines go on further to outline how the consultation process could be developed. Best practice guidance on the pre-application public consultation is then set out in Appendix 2. The Appendix notes that providing the public with a good flow of information about a proposed development can avoid conflict in the future.

Further to the Guidelines, I note the following policy from the current Donegal County Development Plan:

E-P-12 It is a policy of the Council to encourage all wind energy developers to engage in pre-planning consultation with the Planning Authority in relation to development

proposals. Developers are also encouraged to engage with the local community to investigate the potential for local community benefit that may arise, and/or arrangements for local community investment.

The proposed development has introduced significant concern into the local community in Glenties with regard to its environmental and community impacts. The project, from my observations, has created a substantial divisiveness between the local community and the developers and landowners involved in the application. Unquestionably, the applicant undertook the minimum level of consultation required under the Planning Acts. This, in my opinion, has heightened public concerns as there was minimal information available about the project prior to the making of the application. Notwithstanding this, the applicant was not obliged, under the Planning Acts, to engage any further with the local community and has not been found to contravene any legal requirements. With the lack of information increasing community concerns, however, it is evident that such pre-application public consultation and provision of liaison would have helped to at least improve an understanding of the applicant's proposal and potentially allay fears for some. This would have been a more desirable approach than appearing to foist a proposal onto a local community.

### 10.20 The Planning Authority's Procedures and Handling of the Application

In terms of communication with those members of the public who made submissions to the planning authority through the Irish language, errors appear to have been made by communication through the English language, contrary to the provisions of the Language Act. I note, however, that no party was excluded from the opportunity to engage in the planning process up to the current stage of the consideration of this application. All persons were afforded the opportunity to correspond with the Board in writing and engaged in the oral hearing process in an agreed manner that accommodated language requirements and requests.

The issue of greatest concern to the objectors to the scheme in the context of procedures related to the return of additional submissions by the planning authority to objectors after some weeks of receipt and acceptance by the planning authority of additional submissions following the receipt of the applicant's further information. This was compounded by the decision to grant permission immediately after the return of those submissions. I note the provisions of Article 35(1)(b)(iii) of the Planning and Development Regulations. A member of the public is required to provide a copy of notification of their original submission when making a further submission following receipt of further information. Thus, the planning authority could be seen to be correct in accordance with these regulations. However, it was made known at the Hearing that submissions without copies of such notification are often obtained by the planning authority and accepted as additional submissions. The planning authority's acceptance of the submissions, acknowledgement of same, and logging on their public information

system as additional submissions received appeared to have been in accordance with an accepted practice, notwithstanding the provisions of the Regulations. It appears that the *bona fides* of the submissions were not in question. The time delay between taking in these submissions and returning them and then deciding to grant permission for the development so shortly after their return, which appears to have not allowed a return of submissions with the associated copy of notification, irked those affected, as they reasonably understood their submissions to have been accepted and due consideration given thereto. The outcome of this approach by the planning authority was to incense third parties to the proposal and to produce a degree of unfairness felt by those affected. Procedurally, this was an undesirable approach to have been taken by the planning authority, in my opinion. However, other than to note this, any necessary procedural changes are a matter for the planning authority itself. Furthermore, it is my submission that the appeal process, allowing written submissions directly to the Board and oral submissions at the Hearing, facilitated addressing the third party concerns and ultimately allowed for such additional submissions to be incorporated into overall submissions and to be considered by the Board in the making of its decision.

## 10.21 Awarding of Costs

In his submission to the Oral Hearing, Mr. Michael Gillespie, on behalf of the Miller family, requested the costs incurred by the third party in the making of their submissions be awarded. Glenties Wind Farm Information Group also sought costs after the completion of the Hearing.

I note the provisions of Section 145 of the Planning and Development Act, 2000 and to the discretion afforded to the Board under this provision. To the extent that the third party / observers were participants throughout the planning application process and remained facilitated throughout the appeal process in the same manner as all other parties to the appeal, I do not consider that the application for compensation could be determined to be exceptional nor indeed merited in its own right. I, thus, recommend that the Board does not use its absolute discretion to direct that compensation be paid in this instance.

## 10.22 Environmental Impact Assessment

### 10.22.1 Compliance with the requirements of Articles 94 and Schedule 6 of the Planning and Development Regulations 2001, as amended

The Environmental Impact Statement accompanying the application was a most deficient document. There was a great lack of essential information of material significance and substance, notably in relation to humans, flora, fauna, soils, geology and water. In coming to this conclusion, I note from my assessment above the applicant's deficiencies relating to the following:

- Lack of understanding on the proposed grid connection,
- The lack of a baseline noise survey,
- The continual changes to peat management as the application process has proceeded,
- The lack of understanding about the proposed borrow pits, their development, selection, adequacy for purpose, and impact on the environment,
- The serious deficiency in baseline information on the underlying geology of the site and its environs,
- The failure to comprehensively address potential impacts on Pollnapaste geological heritage site and Lough Derkbeg, a source of public water supply,
- The failure to provide a comprehensive inventory of plant species on the site, and, in particular, the undertaking of habitat surveys at times suitable for detecting plant species listed in the Red Data Book (i.e. Bog orchid, Killarney fern, and heath cudweed) that may be present on the site,
- The lack of an adequate assessment of impact on Freshwater Pearl Mussel,
- The lack of any standard breeding bird survey,
- The lack of any dedicated Red Grouse survey, despite the known prevalence of this Red-listed species on the site,
- The deficiencies of vantage point survey work in relation to Golden Eagle,
- The inadequacy of breeding bird monitoring, with particular attention to Merlin,
- The failure to assess the presence of *Marsh fritillary* on the lowlying parts of the site,
- The inadequate survey of terrestrial invertebrate populations, and
- The inadequate extent and timing of bat surveys.

Notwithstanding the applicant's submission of further information and attempts to address evident shortfalls during the application process, the inadequacy of the EIS remains.

It is my submission to the Board, therefore, that the proposed development application, in overall terms, is not in compliance with Articles 94 and Schedule 6 of the Planning and Development Regulations, 2001, as amended. To this extent I observe that the EIS does not contain the information specified in paragraph 1 of Schedule 6 of the Regulations. To this end, the EIS:

- Inadequately describes the proposal in the context of an understanding of the existing environment,
- Fails to provide the data necessary to identify and assess the main effects the project is likely to have on the environment,
- Fails to provide a true understanding of the emissions arising and impacts resulting for the decision-making body, and
- Demonstrates a serious lack of understanding and description of the likely significant effects on the environment resulting from the development's existence,

the development's use of natural resources, the emission of pollutants and creation of nuisances.

### 10.22.2 Identification of the likely significant direct and indirect effects of the project on the environment

The submitted EIS and my assessment preceding this part of my report focus on the significant direct and indirect effects arising from the proposed development. I propose here solely to identify the main likely effects under a range of headings as follows:

**Human Beings**

Employment at the construction stage
Impact on tourism
Shadow flicker

**Flora & Fauna**

Effects on European Sites and other conservation areas
Impacts on on-site habitats
Drying out of bog by roads and structure bases
Species impact, inclusive of impact from peat slides
Avifauna disturbance and collision
Downstream effects on the Owenea River, habitat of Freshwater Pearl Mussel
Impediments to fish passage

**Soils & Geology**

Removal of blanket bog
Peat stability and peat slides
Extraction of rock from the borrow pits

**Water**

Undermining water quality through sedimentation and pollution
Distorting the natural water system that prevails
Effecting important habitats
Impact on Lough Nacroaghy

**Air, Climate, Noise and Vibration**

Climate Change
Noise disturbance / increased ambient noise levels

**Landscape and Visual Impact**

Scale, height, orientation and extent of visibility
Impact on landscape character
Impact on important views
Cumulative impact with other permitted wind farms and other infrastructure developments
Non-compliance with landscape policy

**Cultural Heritage**

Effects on archaeology
Impact on the Gaeltacht

**Material Assets**

Impact on local road network from construction HGVs
Suitability of delivery route for proposed structures
Interference with telecommunications and aviation

**Interactions**

Humans and noise, shadow flicker, visual impact, tourism
Flora and fauna and water quality, hydrology, soils
Landscape and the natural environment

### 10.22.3 Description of the likely effects identified

The likely effects arising from the development proceeding are anticipated to include the following:

**Human Beings**

*Employment*: Short-term local community impact at the construction stage.

*Tourism*: Visual and landscape impact distorting the natural tourism product; construction activity and associated drainage affecting the adjoining fisheries.

*Shadow Flicker*: Shadow cast and flicker on neighbouring residential properties.

**Flora & Fauna**

*Special Areas of Conservation*: Impacts on the natural water system at the construction stage due to drainage and peat disturbance; disassociating the site as part of the overall natural habitat prevailing within the wider area.

*Impacts on on-site habitats*: Destruction/removal of valuable habitats on the site through excavation and earthworks; degrading and fragmenting the habitats and reducing their ecological value.

*Species*: Reducing the diversity of species on the site.

*Avifauna*: Fragmentation and removal of habitat; disturbance; creating a barrier to movement.

*Freshwater Pearl Mussel*: Stream sedimentation and downstream effects on the Owenea River

**Soils & Geology**

*Removal of blanket bog*: Loss of important habitat; drainage effects for the bog and for the natural water system.

*Peat stability*: Potential of a peat slide from stored peat; disturbance to deep peat areas.

*Extraction of rock*: Impact on the natural hydrological state; functional use and waste; loss of important habitat.

**Water**

*Undermining water quality*: Changes on site runoff volumes; impacting on water chemistry for fish; affecting water quality for fisheries.

*Distorting the natural water systems*: Impacting Lough Nacroaghy, an important components of the fishery system in the area;

*Effecting important habitats*: Undermining the important habitats formed by the oligotrophic and dystrophic lakes.

**Air, Climate, Noise & Vibration**

*Climate Change*: Role of renewable energy and climate change.

*Noise disturbance*: Mechanical and aerodynamic noise impacts on sensitive receptors.

**Landscape and Visual Impact**

*Scale and height and extent of visibility*: Intrusive visual effects on the area beyond the site.

*Impact on landscape character*: Distortion of the natural landscape character.

*Impact on important views*: Incongruity with views into, across and beyond the site.

*Cumulative impact*: Imposition of greater visual and landscape intrusion with permitted wind farm development in the vicinity.

*Non-compliance with landscape policy*: Conflict with established public policy.

**Cultural Heritage**

*Archaeology*: Disturbance to or destruction of on-site archaeology.

*Gaeltacht*: Undermining the cultural significance of the Gaeltacht area.

**Material Assets**

*Road Network*: Transportation of materials and consequences for the structure and carrying capacity of the existing local roads.

*Telecommunications & Aviation*: Electromagnetic interference and consequences for air safety and residential amenity

**Interactions**

The effects of the interactions between humans and air quality and the visual landscape, flora and fauna and water and soils, and landscape and the natural environment are implicit in the range of preceding issues listed.

### 10.22.4 Assessment of the likely significant effects identified, having regard to the mitigation measures

My detailed assessment set out before this section of the report fully considers the range of relevant likely significant effects with due regard given to the mitigation measures proposed to be applied with the proposed development proceeding. What follows is a short list of some of the more important mitigation measures proposed to be employed which the applicant considers as necessary to address the range of potential significant impacts arising from the proposed development.

**Human Beings**

*Tourism* – Detailed drainage arrangements intended to protect water quality, separation distance from the local road system.

*Shadow flicker* – Separation distance from sensitive receptors; turbine controls during sensitive periods.

**Flora & Fauna**

*Special Areas of Conservation* - Separation distance, detailed drainage arrangements.

*Impacts on on-site habitats* – Ecological Site Management Plan

*Species impact* - Protection of watercourses through drainage design and application of buffer zones.

*Avifauna disturbance* - Phasing of construction works to avoid breeding season, monitoring of the effects of the operating wind farm, undergrounding of cables.

**Soils & Geology**

*Peat impacts* –Placement of turbines in areas of shallow peat and in areas with a high level of peat stability, deposition of extracted peat within peat repositories, Peat Management Plan, no rock blasting

**Water**

*Water quality* - Minimising runoff volumes, drainage design and control, avoidance of impacts by application of buffer zones, no on-site cement batching, monitoring drainage and regular sampling, Surface Water Management Plan, Sustainable Drainage System

*Natural water system* - Maintaining routes of natural watercourses, avoiding natural watercourse crossings, siting of roads and turbines greater than 150m from Lough Nacroaghy and main streams, clear-span structure used where crossing of the stream draining Lough Nacroaghy, silt settlement provisions

*Important habitats* – No direct discharge to any surface water body.

**Air, Climate, Noise and Vibration**

*Climate Change* - Application of the project and consequent carbon savings.

*Noise disturbance* - Separation from sensitive receptors; adherence to standards.

**Landscape and Visual Impact**

*Landscape character and important views* - Avoidance of Areas of Especially High Scenic Amenity; Separation distance from the public realm.

*Siting* - On acceptable peaks and ridges and in saddles; set within the context of extensive area of continuous unenclosed ground; irregular spacing and random clustered layout

*Cumulative impact* - Separation from other similar permitted development.

**Cultural Heritage**

*Archaeology* - Written and photographic records created where access tracks truncate the 6 townland boundaries; archaeological monitoring under licence.

**Material Assets**

*Local road network* - Heavy materials delivery and plant transportation from Killybegs port; access junction / minor road improvements where necessary; Traffic Management Plan

*Telecommunications and aviation*: Installation of deflectors or repeaters; adherence to protocol.

### 10.22.5 Conclusions regarding the acceptability or otherwise of the likely residual effects identified

The conclusions regarding the acceptability of the likely main residual effects of this proposal are clearly addressed under the various headings of my main assessment and I do not propose to repeat them. Suffice to indicate that the principal areas of concern focus on humans, landscape and visual impacts, impacts on ecology, water, and soils. The following concluding section of my assessment now seeks to draw out the critical issues and to determine the most desirable approach to reaching a balanced decision on the proposed development.

## 10.23 Conclusions

The proposed development unquestionably would adversely affect people, flora and fauna. Some of the key findings of my assessment may be synopsised as follows:

Public Policy

- The proposed development, in principle, seeks to meet the wider policies and objectives for renewable energy set at international, European, national, regional and local levels.

Public Health

- The extent of confusion, lack of clarity, conflict of epidemiological studies, and, most importantly, lack of appropriate guidance on the assessment of public health impact makes the Board's task of adequately assessing the issue of public health impact improbable. However, it is reasonable to conclude that those particularly sensitive to noise in the quiet rural noise environment of Straboy and its environs would likely experience disturbance by the proposed wind turbines and the response to this disturbance could potentially affect the health of these receptors.

Landscape and Visual Effects

- The impact of the proposed development on landscape character is particularly complex in this instance. Overall, the proposed development, in terms of impacting on landscape character, would produce a very significant negative impact by reducing the quality of the range of landscape character types it would influence. It does what the Wind Energy Guidelines say should be avoided for each relevant landscape character type.
- A most detrimental visual impact resulting from the proposed development is that, when it would be viewed from the settlements in its environs, as well as from coastal and upland locations, the majority of the turbines would fail to retain any significant mountainous backdrop, thus producing isolated prominent skyline development. Therefore, at all times this development produces skylining and the turbines continually present themselves along ridgelines in a prominent format, dominating the view and becoming the focus in the view.
- The distance of the proposed site from the defined Glenveagh National Park significantly reduces the proposed development's influence which may result in a conclusion being drawn that the impact on the National Park is relatively marginal and therefore tolerable due to intervening topographical characteristics and the extent of separation.
- The comparative impact between the 110kv powerline development at Straboy and the proposed turbines demonstrates that there can be no doubt that the proposal constitutes a much greater visual and landscape impact and that its effect in terms of skylining and clear distortion of the ridgelines are evident. The cumulative impact seriously exacerbates the man-made intrusion on this sensitive landscape.
- If one examines the scale and extent of permitted and proposed wind farm developments in the Glenties area then one can start to understand, without the aid of a visual demonstration, that one's visual experience between Ardara, Narin, Doochary, Fintown, and for parts of the N56, the R253 and the R262 (i.e. on all main approaches to the town of Glenties) will be significantly influenced by wind farm development. The degree of inter-visibility is particularly hard to quantify. However, the interruption to the wider natural setting in which the town of Glenties and its environs are placed will be striking.

- Overall, the proposed development would have a very significant disproportionate landscape and visual effect, failing to relate to the functional nature of the landscape, failing to achieve visual integration, and failing to avoid spatial dominance of the hills on which it is set and of the town of Glenties. The landscape on which the proposed development is sited does not have the ability to visually absorb the proposed turbines. It, therefore, conflicts significantly with Policy NH-O-8 and Objective NH-P-12 of the current Donegal County Development Plan.

Ecology

- Overall, the site and its environs are considered by the applicant to be of National Importance for nature conservation. This conclusion is accepted. This is due to the presence of ecological features such as extensive areas of habitats listed on Annex I of the Habitats Directive, presence of significant populations of freshwater pearl mussel downstream of the site, moderate to good potential for salmonid fish, and the dominance of the site by large tracts of semi-natural habitat.
- The area of which the site forms a part is a very significant ecologically valuable area, rich in biodiversity. Many of the habitat types and species which comprise the special conservation interests of the Natura 2000 sites in this area are also found on the appeal site, namely blanket bog, wet heath, and oligotrophic lakes. The site is therefore an important link along the chain of designated sites in this area.
- The site comprises mainly upland blanket bog, an Annex I habitat required to be protected, and there are many parts of the site on which there is intact blanket bog. It also contains significant areas of other internationally important habitats that include Lough Nacroaghy, which is an acid oligotrophic lake and which corresponds to the habitat '*oligotrophic to mesotrophic standing waters with vegetation of Littorelletalia uniflorae and/or of the Iseoto-Nanojuncetea*, i.e. an Annex I habitat, as well as a dystrophic lake at the north-eastern end of the site between Derkbeg and Straboy Hills and wet heath primarily along the west side of the site.
- Destruction, loss, reduction and fragmentation of habitats on this site and the changes in the key indicators of conservation value by the reduction of water quality will result by the pursuit of the proposed development and this poses a significant threat to the West of Ardara / Maas Road cSAC.
- The potential for peat slippage and sedimentation of sensitive watercourses poses a serious risk to the habitat of the freshwater pearl mussel in the Owenea catchment. The introduction of new sources of siltation into the on-site watercourses, moving into the Shallogan and Stracashel Rivers and ultimately into the Owenea itself, could not be construed as complying with the measures proposed to be taken in the Draft Freshwater Pearl Mussel Owenea Sub-Basin Management Plan which seek to reduce sources of siltation and ultimately to improve water quality with the objective of improving the status of freshwater

pearl mussel. This is in direct conflict with Objective NH-O-4 of Donegal County Development Plan, which seeks to protect and improve the integrity and quality of Fresh Water Pearl Mussel Basins and to take account of the relevant Fresh Water Pearl Mussel Sub-Basin Plan.

- The proposed wind farm poses a serious risk to freshwater ecology generally, and, in addition to freshwater pearl mussel, to salmonids and otter.
- The applicant overtly seeks to devalue the site as an important habitat for Red Grouse and Golden Eagle, thus undermining the conservation status of these threatened species, in isolation of any compensatory measures.
- The application is devoid of a valid breeding bird survey work, resulting in a very significant shortfall in surveying on a site on which several bird species of significant conservation value are known to occur.
- The likely connectivity between the appeal site and Cró na mBraonáin Grouse Sanctuary and the importance of the habitat on the appeal site for the Red listed species and the consequent adverse impact for the occurrence of the species on the site and for the continued sustainability of the sanctuary directly conflicts with Policy NH-P-15 of Donegal County Development Plan, which seeks to ensure the protection of Cró na mBraonáin habitats and Grouse Sanctuary given its high concentration of Red Grouse and its importance to the national Red Grouse population.

Peat

- There are many inconsistencies in the applicant's findings and proposals in relation to existing site conditions and to handling and treatment of peat at the proposed repositories. The applicant's approach to dealing with peat is inconsistent, continues to undergo design change, and cannot be relied upon in the assessment of this application.
- The variations and lack of clarity on existing peat depths, existing slopes, proximity to residential property, the land areas to be used for the repositories and volumes of peat to be deposited, the depths to which peat is to be placed within the repositories, how and with what the peat is to be covered, what type of berms are to be used and how they are to be formed, how surface water is to be treated and disposed of, and how monitoring is to take place demonstrate the proposed peat handling and storage design is not fully comprehended and has not been adequately determined. The risk arising and hazard for residents in the area is intolerable.
- The proposed repositories are likely to carry a high risk of failure, notably from drainage control and from potential peat slide.
- The consequence of the internal road network being developed through blanket bog and roads becoming significant drainage routes are a serious concern.
- The risks associated with the applicant's methodology and the ongoing management of these risks in relation to the excavation for turbines are of concern

where there are steep slopes on which turbines are proposed to be erected, where deep excavations are involved, and where stability of development at such locations are called into question.

Geology and Drainage

- There is a significant lack of baseline information on geology which is pivotal to determining potential impacts on important resources such as Lough Derkmore, a public water supply source, and Pollnapaste cave system, a site of national geological importance, and in the context of adequately assessing stability at each turbine site.
- There cannot be a reliance on the applicant's claim that there is not potential drainage northwards from this site in the direction of Lough Derkmore, Pollnapaste geological site and the Gweebarra River catchment.

Noise

- What is of particular relevance in determining the noise impact of the proposed development on the residents in the vicinity of Straboy and Meenalargan Hills is that one can reasonably state that the residents experience an environment where there are low background noise levels generally.
- The submitted EIS is seriously deficient in relation to the issue of noise as there was no background noise survey undertaken.
- The character of this quiet rural noise environment can be altered by this development and this effect should be acknowledged as such. For some this change will constitute a nuisance.
- If noise from man-made sources reduces at night at Straboy (as would be expected) then the effect on the character of the noise environment by the wind turbines is likely to increase and any nuisance perceived is likely to intensify.

Grid Connection

- It appears at present that EirGrid may be requiring connection to the Clogher substation north-east of Donegal Town and not to Tievebrack as submitted in the EIS. The provision of such a lengthy overhead line (either 38kV or 110kV), in itself and/or along with an additional line to serve Clonacarkfree wind farm, could potentially have significant planning and environmental impacts due to the length of the line, the sensitive nature of the terrain through which it would likely travel, and because of the cumulative impact with other overhead lines developed and being developed in this area.
- The Wind Energy Guidelines state that details of indicative and feasible options for grid interconnection lines and facilities should in general be adequate for a planning authority to consider a wind energy application and suggested content

for the indicative and feasible options include (a) the general direction of connection, (b) connecting line capacity (e.g. 38 kV, 110 kV) and (c) line supporting structure (e.g. single pole, twin pole, lattice tower). The applicant's details on grid connection have fallen far short of what should be provided in the application.

Traffic Impact at Construction Stage

- The applicant has comprehensively assessed the proposed route, has identified where the potential impacts would likely result, and has drawn up a range of mitigation measures to adequately reduce the significance of the potential impacts.

Cultural Heritage

- The landscape in this area has influenced the cultural richness of Glenties and its environs, reflected in the many writings, storytelling, traditional music and art deriving from the area.
- The distortion of the natural landscape by the proposed development would ultimately impact on the cultural heritage of this area, its sense of place and its sustained community reverence thereto.
- The impact of the development sits uncomfortably with the Donegal County Development Plan objective CCG-O-6, which seeks to continue to promote the appropriate and sustainable linguistic, cultural, and social development of the Gealtacht and to maintain the primacy of the Irish language and its associated culture.

The Environmental Impact Statement

- The Environmental Impact Statement accompanying the application was a seriously deficient document resulting from an evident lack of essential information of material significance and substance, notably in relation to humans, flora, fauna, soils, geology and water.
- The proposed development application, in overall terms, is not in compliance with Articles 94 and Schedule 6 of the Planning and Development Regulations, 2001, as amended.

## 11.0 RECOMMENDATION

It is my recommendation to the Board that the proposed development should be refused planning permission. With due regard to the above assessment, the proposed development can be seen to be unacceptable for a wide number of reasons. However, for the benefit of focusing on the critically important issues of environmental impact and

sustainability, I am making a recommendation to refuse the proposed development for a number of reasons that particularly demonstrate to the Board the incompatibility of the proposed wind farm with its environment, the proposal's non-compliance with guidelines and policy, and the deficient nature of the application submission. I, therefore, recommend refusal of permission for the following reasons:

## Reasons and Considerations

1. The Environmental Impact Statement accompanying the application which was lodged with the planning authority on the 7th day of April, 2011 does not comply with the requirements of article 94 and Schedule 6 of the Planning and Development Regulations, 2001, as amended, due to the lack of details of material significance and substance with regard to considerations on impacts on humans, flora, fauna, soils, geology and water and the inter-relationship between these factors, with particular regard to:

    - Lack of understanding of the proposed grid connection,
    - The lack of a baseline noise survey,
    - The continual changes to peat management as the application process has proceeded and unreliability of same,
    - The lack of understanding about the proposed borrow pits, their development, selection, adequacy for purpose, and impact on the environment,
    - The serious deficiency in baseline information on the underlying geology of the site and its environs,
    - The failure to comprehensively address potential impacts on Pollnapaste geological heritage site and Lough Derkbeg, a source of public water supply,
    - The failure to provide a comprehensive inventory of plant species on the site, and, in particular, the undertaking of habitat surveys at times suitable for detecting plant species listed in the Red Data Book (i.e. Bog orchid, Killarney fern, and heath cudweed) that may be present on the site,
    - The lack of an adequate assessment of impact on Freshwater Pearl Mussel,
    - The lack of any standard breeding bird survey,
    - The lack of any dedicated Red Grouse survey, despite the known prevalence of this Red-listed species on the site,
    - The deficiencies of vantage point survey work in relation to Golden Eagle,
    - The inadequacy of breeding bird monitoring, with particular attention to Merlin,
    - The failure to assess the presence of *Marsh fritillary* on the lowlying parts of the site,
    - The inadequate survey of terrestrial invertebrate populations, and
    - The inadequate extent and timing of bat surveys.

The Board is, therefore, precluded from considering a grant of planning permission in this case.

2. The proposed development is sited in a highly visible location close to the town of Glenties in south County Donegal, where it is proposed to locate the wind farm on the ridgelines of the prominent hills of Straboy, Meenalargan, Derkbeg and Mulnamin. The existing hills contribute significantly to the natural setting and framing of the town of Glenties and to the settlement's renowned high quality visual character and amenity, and thus to the town's notable tourism value. It is a policy of the planning authority, as set out in the current Donegal County Development Plan, to safeguard prominent skylines and ridgelines from inappropriate development. Furthermore, it is an objective to protect the character of the landscape where and to the extent that the proper planning and development of the area requires it, including the preservation of views and prospects and the amenities of places and features of natural beauty or interest. These provisions are considered reasonable. Having regard to the proposed siting of the development in this scenic, open, elevated, and prominent landscape, to the isolated prominent skyline development resulting from the lack of any natural screening, and to its nature and scale, it is considered that the proposed wind farm, comprising 25 turbines sited at this location, would constitute a highly obtrusive development that would detract from the existing natural character of the urban/rural interface in the environs of Glenties, would undermine the setting and rural character of the area and would compromise the scenic amenities of this visually sensitive and vulnerable area. The proposed development would, thereby, be an excessively dominant feature and visually obtrusive form of development in this landscape, would contribute to the erosion of the visual and environmental amenity of the area, would materially conflict with the policy and objective as set out in the Development Plan, and would seriously injure the landscape and visual amenities of the area. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

3. The site of the proposed development is located within a significant ecologically valuable area, rich in biodiversity, wherein there is a high density of Natura 2000 sites, and comprises an important link along the chain of the designated conservation sites in this area. The proposed site has a distinct ecological connectivity to the West of Ardara/Maas Road proposed Special Area of Conservation. In addition, the site itself hosts extensive priority habitat designated under the EU Habitats Directive, namely blanket bog, oligotrophic lakes and wet heath. Furthermore, the site lies in close proximity to Cró na mBraonáin Grouse Sanctuary, a nationally important Red Grouse habitat, hosts the protected bird species of Red Grouse itself, is recognised as potentially hosting a range of other protected bird species of high conservation value, and has hydrological links with the Owenea River system which hosts Annex I species inclusive of freshwater pearl mussel, salmonids and otter. The objectives of the planning authority, as set

out in the current Donegal County Development Plan include to maintain the conservation value of all existing and/or proposed SACs and SPAs, including those plant and animal species that have been identified for protection, and to protect and improve the integrity and quality of Fresh Water Pearl Mussel Basins. Furthermore, the policies of the Plan include to ensure development proposals do not damage or destroy any sites of international or national importance, designated for their wildlife/habitat significance, to require consideration of the impact of potential development on habitats of natural value that are key features of the County's ecological network and to incorporate appropriate mitigating biodiversity measures into development proposals, and to ensure the protection of Cró na mBraonáin habitats and grouse sanctuary given its high concentration of Red Grouse and its importance to the national Red Grouse population, which is a protected species under the EU Birds Directive. These policies and objectives are considered reasonable. It is considered that the proposed development, in particular the development of large peat repositories on upland slopes in proximity to watercourses linked to the Owenea River catchment, the construction of turbine foundations, the provision of an extensive internal access road network throughout the site, the imposition of an extensive new drainage system throughout the site and across blanket bog, the quarrying of four large 'borrow pits', and the development of ancillary works inclusive of the undergrounding of cabling and the construction of a substation and compound, as well as the operation of the proposed wind turbines, would have significant adverse impacts on the ecological, ornithological and aquatic importance of this site and the immediate area by way of destruction of habitat, disturbance and displacement of protected species, potential for bird strikes, and pollution potential for the important watercourses within and in the vicinity of the site. The proposed development would, therefore, result in an unacceptable degradation of protected habitat, would also result in an unacceptable risk to the endangered red grouse by way of habitat loss and fragmentation, would have a significant adverse environmental impact on the natural habitats of the wider area, inclusive of adverse impact on the Owenea River catchment with consequential impacts for freshwater pearl mussel, would contravene materially the objectives as set out in the current Donegal County Development Plan, and would conflict with the Plan policies. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

4. The proposed development involves the excavation of extensive volumes of peat and other unsuitable materials from the site, the removal of the peat and other materials to adjoining repositories within the site and overlaying them on existing blanket bog of variable thickness on sloping sites behind dwellings and Local Road No. L2583 (Meenalargan Road). Having regard to the contours of the area of the repositories, the amount and pattern of rainfall in the area, the characteristics of the disaggregated peat, the method proposed for the moving of material to and within the repositories, the indicative nature of the design of the

repositories, and the details of the system for retaining the deposited materials, the Board considers that the proposed design of the repositories and their associated surface drainage systems would be ineffective in ensuring the integrity of the peat repositories as permanent structures for the retention of peat and other unsuitable materials. Consequently, the Board considers that both of the proposed repositories have a high probability of failure and that the proposed development would constitute an unacceptable risk to the health and safety of the local community and of the general public on the public road in the vicinity of the site, would constitute an unacceptable risk of pollution of salmonid waters in the Owenea River system, and would seriously injure the amenities of property in the vicinity. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

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Kevin Moore
Senior Planning Inspector
January, 2013.

## APPENDIX 1 - OUTLINE REPORT OF THE ORAL HEARING

| | |
|---|---|
| ***Appeal Ref.:*** | PL 05B.240166 |
| ***Development Proposal:*** | 25 wind turbines, 4 borrow pits, substation, peat repositories, and clearcutting of conifer plantation at Straboy, Meenalargan, Loughcrillen and Derkbeg, Glenties, Co. Donegal. |
| ***Venue:*** | Highland Hotel, Glenties, Co. Donegal. |
| ***Dates:*** | 16th – 18th, 23rd – 25th October, 2012 |

*In Attendance:*

**FIRST PARTY**

| | |
|---|---|
| Tom Phillips | Tom Phillips & Associates, Planning Consultants |
| Gavin Lawlor | Tom Phillips & Associates, Planning Consultants |
| Michael Wall | Barrister |
| John Ward | Director of Straboy Wind Energy Ltd. and Landscape Architect |
| Aidan O'Neill | Planning Consultant |
| Peter O'Connor | Traffic Consultant |
| Dan Keohane | Geology, Hydrogeology and Surface Water Consultant |
| Bernadette O'Connell | Landscape Architect and EIA Practitioner |
| Richard Nairn | Ecologist and Peer-Reviewer |
| Dermot Nelis | Archaeology, Architecture and Cultural heritage Consultant |
| Brendan O'Reilly | Noise Consultant |
| Conal Shevlin | Local Liaison Officer |
| Eoghan MacGiolla Easpaig | Gaoth Dobhair resident |

**LOCAL AUTHORITY**

**Donegal County Council**

| | |
|---|---|
| Frank Sweeney | Senior Executive Planner |
| Sinead McClafferty | Assistant Planner |

**APPELLANTS**

**Glenties Wind Farm Information Group**

| | |
|---|---|
| John Evans | Barrister |
| Ernan O'Donnell | Chairman, Glenties Wind Farm Information Group |
| Dr. Chris Hanning | Public Health Consultant |
| Dick Bowdler | Noise Consultant |
| Michael McGeehan | Tourism Consultant |
| Cllr. John Campbell | Public Representative and Concerned Resident |
| Siobhan Browne | Concerned Resident |
| Dr. M.J. Cooke | Concerned Resident |
| Lorcan O'Toole | Golden Eagle Trust |
| Joseph Brennan | Cró na mBraonáin Red Grouse Sanctuary |
| Anne Marie McDermott | Concerned Resident |
| Belinda Boyle | Concerned Resident |
| Dr. Olivia Bragg | Peat Stability and Hydrology Consultant |

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|---|---|
| Cheryl McLoone | Concerned Resident |
| Ralph Sheppard | Ecology Consultant |
| Dr. Fiona Hardy | Concerned Resident |
| Peadar Ó Baoill | Concerned Resident |
| Denise Boyle | Concerned Resident |
| Prof. Paul Johnston | Hydrology and Peat Stability Consultant |

**Coiste Timpeallacht Gaoth Dobhair**

| | |
|---|---|
| Patricia Sharkey | Group Representative and Concerned Resident |
| Val Martin | Wind Farm Consultant |

**Moira & Liam Miller**

| | |
|---|---|
| Michael Gillespie | Solicitor |
| Liam Miller | Concerned Resident |

**OBSERVERS**

| | |
|---|---|
| Louis & Joan Hanlon | Concerned Residents |
| Christopher Neathercoat | Concerned Resident |
| Michael Ward | Landowner |
| Charles Swingler | Concerned Resident |

**NOTE 1:** All of the proceedings of the Oral Hearing are recorded and the recording is attached to my report. What follows below is a brief outline of the proceedings. This outline is proposed to function as an aid in following the recording.

**NOTE 2:** The assessment in my main report makes reference to details submitted in evidence at the Oral Hearing.

**NOTE 3:** For a list of prepared texts and other submissions given to the Inspector at the Hearing see the end of this brief outline. These submissions have been numbered and references to same in the outline below directly relate.

***Opening of Hearing***

At the outset of the hearing I outlined details of the proposal, the appeals and observations received by the Board and set out the Order of Proceedings. Furthermore, I accepted the request by Michael Ward to be an Observer on behalf of local landowners at Straboy.

A significant number of the third party appellants and observers came together under an umbrella group titled Glenties Wind Farm Information Group for the purposes of the hearing. The hearing was informed that this group and the expert witnesses under this group represented the following:

*Appellants*

Michael Quinn
Anne Marie McDermott
Fiona Hardy
Seamus Mac Goillabhuí
Michael McGeehan
Peadar Ó Baoill
M.J. Cooke
Joseph & Declan Brennan
Damien McCallig
Golden Eagle Trust

*Observers*

Breezy Kelly
Mary Brown
Rosaleen & Brian McElhinney
Imelda O'Donnell
Clodagh Duggan
Rian O'Donnell
Teresa Bonner
Maresa Campbell
Brian Campbell
Margaret Campbell
Danny Doherty & Rita Breslin
Ronan O'Donnell
Helen McNelis
Kevin McHugh
Cheryl McLoone
Siobhan Browne
Linda McGrath

Pat Cunningham
Breege McGrath
Peter & Christine Sharkey
Brenda McElhinney
Catherine Breslin & Caroline Boyle Carr
Brian & Margaret Gildea, Carol & Bella McGill
Breda Lawlor
Bernadette Donoghue
Angela McCahill
Pedro Soltani
Bernard Quinn
Eli Gothill
Pat Browne
Maria Craig
Patrick & Janet McGill
Una Brennan
Belina Boyle
Ernan O'Donnell
Kathleen Bonner, Brian & Breege McDevitt
Anne McLoone, John Malone, Edwina Sweeney
Alun Evans
Seamus & Máire Ní Fhioghaire
Donna Ní Fhioghaire
Dominic Ó Baoill
Deborah Ní Fhioghaire
Margaret McCallig
Triona Soltani
The McGettigan Family
Glenties Wind Farm Information Group
Rosa Flannery
Councillor John Campbell
Joan O'Donnell
Felix Jackson
Denise Boyle

The following made separate submissions to the hearing:

| *Appellants* | *Observers* |
|---|---|
| Gweebarra Conservation Group | Coiste Timpeallacht Gaoth Dobhair |
| Liam Millar | Louis & Joan Hanlon |
| | Charles Swingler |
| | C.R. Nethercoat & Others |

Patricia Sharkey

The following were not represented or known to be in attendance at the hearing:

| *Appellants* | *Observers* |
|---|---|
| Catherine Histon & Ezio Vaccari | Glenties Tidy Town Committee |
| Irish Peatland Conservation Council | Mary Kellie |
| Liam McLaughlin | Philomena Boyle |
| | Queen Mary University of London |
| | Vincent Breslin |
| | An Taisce |
| | Cumann Iascairí Bhaile na Finne |
| | Councillor Seamus Ó Domhnaill |

***The Proceedings***

***Applicant's Submissions***

Mr. Tom Phillips introduced the applicant's contributors to the hearing.

Mr. John Ward gave an overview of the proposed scheme, alluding to the site selection process and the benefits arising from the scheme.

Mr. Aidan O'Neill addressed the issue of the planning context of the proposed development, referring to national planning policy, compliance with the Wind Energy Guidelines, regional and local planning policy. Responses were also given to policy-related issues raised by third parties.

Mr. Peter O'Connor addressed the issue of traffic management, focusing on the impacts on the public road network arising from the construction of the project and mitigation measures proposed. Traffic issues raised by third parties were also referred to.

Mr. Dan Keohane addressed the issues of geology, hydrology, hydrogeology, construction management and peat management. He focused on methodologies to be applied, testing undertaken, peat landslide risk, rock slope stability, management of peat, monitoring and mitigation, and construction sequencing. He also addressed issues raised by third parties on these issues.

Ms. Bernadette O'Connell addressed the ecological impact of the proposed development, considering key ecological aspects, likely impacts during construction and operation phases on flora and fauna, as well as proposed mitigation and monitoring. Relevant issues raised by third parties were also considered.

Mr. Richard Nairn submitted an ecology peer review, including the methodologies applied, the issues addressed in the application, projected impacts and mitigation measures to apply, as well as addressing ecology issues raised by third parties.

Mr. Dermot Nelis discussed the archaeological, architectural heritage and cultural heritage impacts of the proposal, focusing on impact assessment, mitigation measures, and issues raised by third party appellants.

Mr. John Ward addressed the visual impact of the proposed development, discussing the landscape planning methodology, the visual assessment undertaken, effects and mitigation, photomontages submitted, and cumulative effects of the scheme with other developments.

Mr. Brendan O'Reilly addressed the issue of noise. This submission included the findings of a new baseline noise study undertaken recently for the development (i.e. between 29th September and 10th October, 2012). Furthermore, the predicted noise impact from the scheme, mitigation and proposed monitoring were discussed. Noise-related issues raised by third parties were referred to also.

Mr. John Ward addressed the issue of shadow flicker, referring to assessment methodology, best practice guidelines, likely impacts and proposed mitigation.

Mr. Aidan O'Neill discussed the issue of tourism impact, referring to the key tourism characteristics of the area and the impacts of wind farm development on tourism. The submission also alluded to the tourism provisions of the current Donegal County Development Plan.

Mr. John Ward made further submissions on the grid connection status and connection options and on climate effects and carbon payback.

Following my questioning, Mr. Keohane made another submission on borrow pit selection, filling methodology for peat regeneration area 2, peat landslide risk assessment, and monitoring of peat stability.

Further details and submission made to the hearing by the applicant included mapping showing distances of turbines to existing residential properties, compliance with wind take requirements, a revised Table 5.2-10 of the EIS on the peat regeneration areas, improved quality photomontages, maps showing the development relative to existing and permitted wind farm development in the area, the site relative to wind energy zoning in

the County Development Plan, the site's location relative to Glenveagh National Park, a publication by Haworth Conservation entitled "Golden eagles and wind farms", and further details on the Enercon wind turbine E-70 on sound power levels.

***Planning Authority's Submission***

Mr. Frank Sweeney made a submission on behalf of Donegal County Council, referring to the policy framework applicable to the proposed development, focusing on policy compliance with the 2006-2012 County Development Plan. He also addressed concerns raised about procedural errors by the planning authority in dealing with the application, impacts on human beings in relation to proximity to dwellings, shadow flicker, noise and health impacts, visual impact, impact on the linguistic and cultural heritage of the area, impact on tourism, traffic implications, geology concerns, and ecology impacts.

Further to my request, he submitted maps of the area in which the site is located relative to Glenveagh National Park as determined to be the understanding of the local authority of its geographical extent when regard is had to the applicable policies in the current County Development Plan. He also submitted maps of the National Park relative to the extent of the designated SPA, the SAC, and pNHA that applies in this area.

***Appellants' Submissions***

Glenties Wind Information Group

Mr. John Evans outlined the witnesses to represent the Group.

Mr. Ernan O'Donnell made the opening remarks on behalf of the Group, addressing issues relating to the inadequacies of the EIS and the EIA process, concerns in relation to tourism, noise, precedent, the extent of wind farms in the county, and SEA.

Dr. Christopher Hanning addressed the issue of health impacts, focusing on wind turbine noise, sleep disturbance and impacts on human health, the risks to residents in the vicinity of the proposed development, and the adequacy of existing guidance addressing these issues. He concluded that wind turbine noise adversely effects sleep and health at setback distances and noise levels permitted by EPA's guidance, and that receptors living within 1km of the proposed turbines are at a high risk of sleep disturbance and impairment to their health

Mr. Dick Bowdler addressed the issue of noise. His submission comprised outlining the principles of acoustics and guidance provisions, a review of the applicant's assessment, and an assessment of this. Reference to the need for an understanding of baseline background noise levels and the lack of such measurements in the submitted EIS were

noted. Emphasis was placed on the low noise environment in which the development is proposed to be sited and the changes likely to arise. Mr. Bowdler concluded from his own assessment that there would be a loss of amenity at 53 properties during the day, that 26 of these properties will suffer a significant loss of amenity, and that the situation at night would be worse with all 53 properties suffering a major loss of amenity. He further concluded that the Council's noise limit condition of not exceeding a noise level of 43dBA(Leq) could not be met at 40 of the 53 properties. In addition to the main submission, Mr. Bowdler detailed two houses to the north-west and north of the site that he submitted did not feature in the applicant's assessment and provided other documents in support of his submission, including those titled "Noise Measurements in Windy Conditions" (Overall Conclusion of this document), "Development of a Wind Farm Noise Propagation Prediction Model" (Conclusions of this document), "Comparison of predicted and measured wind farm noise levels and implications for assessments of new wind farms", "Prediction and Assessment of Wind Turbine Noise", noise monitoring information for two wind farm developments in Drumadarragh Wind Farm and Seegronan Wind Farm in Northern Ireland, and a copy of BS 4142:1997 "Method for Rating industrial noise affecting mixed residential and industrial areas".

Mr. Michael McGeehan addressed the issue of tourism, focusing on the benefits to a community, landscape as a tourism product, a review of the 2008 Fáilte Ireland survey, the potential of tourism in the county, the impact of wind farms on tourism, the inadequacy of mitigation, the zoning of the area for wind farms, and the prominence of the proposal from the R250 and N56. It was submitted that tourism and wind energy interests are in competition and that the landscape and the tourism product that is Glenties should not be destroyed by the siting of the development at the location proposed.

Cllr. John Campbell addressed the issues of socio-economic impact, the inadequacy of the proposed reinstatement plan and associated securities, and the potential adverse health impact on students at the town's comprehensive school. It was submitted that the wind farm and tourism industries do not complement each other at this location, that tourism has greater job potential, that the financial securities provided for in the planning authority's decision are inadequate, and that one should err on the side of caution regarding set back distances relative to impacts on public health.

Ms. Siobhan Browne submitted resident concerns in relation to noise and impacts on health and well being and the effects on her family. Furthermore, the adverse visual impact resulting was acknowledged.

Mr. Joseph Brennan, of Cró na mBraonáin red grouse sanctuary in Shallogans, made a submission in relation to sustaining the red grouse population in the area and outlined considerations of a range of public bodies on the matter, including NPWS and the Heritage Council. It was submitted that the red grouse sanctuary at Cró na mBraonáin was ignored in the application. Reference was made to the policy in the current County Development Plan to protect this sanctuary. The submission also addressed the issues of

consultation, the use of the area by Golden Eagle, the visual impact of the scheme, and the impact on tourism.

Ms. Anne Marie McDermott submitted residents concerns in relation to impact on property values, the visual impact, public health and safety, public consultation, and the tourism/visual impact on the R250.

Mr. Lorcan O'Toole, Golden Eagle Trust, made a submission on the impacts on birds, referring to the lack of undertaking of a breeding bird survey and failure by the applicant to observe due planning process. It was submitted that because of the poor breeding bird survey methodologies adopted and timings of field work that was conducted by the applicant, the evaluation of the importance of the site was incomplete. Mr. O'Toole also detailed a rebuttal to the applicant's response to appeals received, which reinforced his considerations on inadequacies of methodologies employed, the inadequacies of vantage point surveys carried out, and the deficiencies of monitoring of Merlin. He noted that the Annex I species that could potentially breed or forage in Straboy include Golden Eagle, Peregrine, Merlin and Golden Plover, while Irish Red listed species that could be potentially present on the site include Red Grouse and Curlew.

Ms. Belina Boyle submitted resident concerns, with particular emphasis on the impact of the siting of one of the peat disposal areas to the rear of her house. Health and safety concerns for her family were expressed. Additional concerns related to health risks from infrasound, the impact on tourism, property devaluation, and loss of population due to the development's proximity to houses.

Dr. M.J. Cooke made a submission on the health-related impacts resulting from the wind farm development, notably sleep disturbance. Reference was made to a number of case studies. Effects on children particularly sensitive to the development, the scale of the development and 'industrialisation' of the landscape, the visibility of the turbines and effects on tourism, the inadequacy of the 500m separation distance between turbines and houses espoused in guidelines, and the effects on Glenties town were all alluded to.

Dr. Olivia Bragg addressed the potential interactions of the proposed development with the functioning of the peat and water systems in the area. She reviewed the applicant's peat stability assessment and detailed differences between the applicant's approach and practice established in Scotland and elsewhere in Ireland. The sensitivity of the Owenea River and impact on the Freshwater Pearl Mussel were referenced. Concerns of dealing with waste peat were also discussed and the methodology to develop the peat repositories and vegetation of these areas were queried. Focus on the development of the proposed berms resulted, with emphasis on water penetration and potential for peat slope failure noted. Reference was made to inconsistencies in the design to address potential peat slide risk. Dr. Bragg concluded that there is insufficient consistent information in the application to understand basic site characteristics that have a bearing on how the proposal will affect the peatland on the site and she submitted there is a very low margin

of safety in terms of peat slide risk associated such that potential for eliminating the risk is limited and uncertain.

Ms. Cheryl Quinn (neé McLoone) submitted resident concerns in relation to lack of public consultation, impact on residential properties, health issues due to proximity of turbines to houses, the effects on family if there is a need to move away from the area as a result of the approval of the development, the visual dominance of the scheme on the town of Glenties and prominence from Dooey Beach, and the cumulative effect with other wind farm developments.

Mr. Ralph Sheppard addressed the issue of ecology impact. He stressed the importance of the siting of the development in an area where there is a high density of Natura 2000 sites and acknowledged the Annex I habitat on the site. Reference was made to the extent of active blanket bog and to the fragmentation caused by the proposal. Adverse impact on Golden Eagle, Bog Orchid (Annex I species), water quality, and Merlin were addressed.

Mrs. Kate Evans' submission referred to the ecological richness and diversity of the area, views obtainable over an expansive area, the visual amenity of the site and its environs. Concerns were raised about the impacts resulting from the proposal on the amenity value of the area and by noise. Reference was also made to the need for control and management of wind farm development, the need to improve set back distances of turbines from houses, and the consequences of decommissioning, notably on Freshwater Pearl Mussel.

Dr. Fiona Hardy's submission referred to the construction impact of the development on the tranquility of the area, the industrialisation of the hills by the development and the adverse effects on the landscape. Reference was made to use of a stream on the site as a source of water supply to private houses. The inadequacy of separation distances of turbines from nearby streams was also addressed in the submission.

Mr. Peadar Ó Baoill addressed the handling of the application with regard to the Irish language and to the failure to comply with legal requirements under the Language Act and with the provisions of the County Development Plan. Failures in relation to communications by the planning authority and errors in correspondence by the Board were detailed. Mr. Ó Baoill submitted that there was failure in relation to his rights as a Gaeilgóir. Reference was also made in relation to similar experience for Cumann Iascairí Bhaile na Finne. He expressed dissatisfaction and disappointment in the overall process.

Ms. Denise Boyle made a submission on the importance of cultural heritage in the area and the deficiency of a proper and full assessment of the cultural landscape and its importance to Glenties. The submission also included health and safety concerns in relation to the siting of the peat disposal areas and the location of overhead wires, and impact on access and enjoyment of the landscape around Lough Nacroaghy.

Mr. Joseph Brennan and Mr. Ernan O'Donnell provided a visual impact submission, showing views from within the site and views of the site from the wider area.

Prof. Paul Johnston made a submission on hydrology. He addressed the lack of detail on the proposed peat repositories, the objective to achieve peat regeneration and noted the significant drainage problem from entrained peat material. He considered the potential for slippage of peat downslope was greatly increased by the presence of the excavation for the bunds and from leakage through it. The effects on the drainage characteristics of the site were stressed. The slope of the site for the repository was seen to pose a high risk to stability and comparisons were made with the development of the gas terminal at Bellanaboy, County Mayo and the reason for its original refusal. He concluded that the peat repository is likely to carry a high risk of failure and that its design, location and environmental impact had not been properly assessed, particularly with the houses downslope. He further submitted that there are likely to be significant problems in excavating and stabilizing peat around the foundations at individual turbine sites. He was of the view there is likely to be a deterioration in the colloidal content of runoff. Reference was made to the changes in hydraulic gradient and the probability of inducing slip failure. Concerns were also raised with regard to drainage along access roads, runoff from the four borrow pits, and the potential for turbines T10-T13 to drain northwards and impact on a geology characterised by karstic features.

Mr. Dick Bowdler made a further submission on noise following the applicant's submission of a baseline noise survey at the hearing, an overview of which was presented by Mr. O'Reilly in his submission. He queried the methodologies employed in the undertaking of the survey, discussing limitations in relation to the planning of the survey, the location of measurements, the length of time of the survey, consideration of the range of wind direction, allowance for rainfall in the measurement period, discrepancies with night time noise, and the use of a short measurement mast. The failure to assess the north west of the site was also referred to.

Gweebarra Conservation Group / Coiste Timpeallacht Gaoth Dobhair / Patricia Sharkey

Ms. Patricia Sharkey addressed concerns relating to density of wind farm development in County Donegal, the lack of public consultation, health impacts, shadow flicker, environmental, community and cultural heritage impacts. The need for SEA for the renewable energy programme was also stressed. The impacts on human health by way of proximity to houses and noise, effects on Natura 2000 sites and on areas of high ecological and scientific value, CO2 release calculations, archaeology, traffic, water quality, and impacts on the Freshwater Pearl Mussel, Derkmore Lake, the nearby Pollnapaste cave system and existence of karstic features, and the potential for instability on the site were each addressed. Concerns in relation to the impacts on tourism, walking routes and the overall visual impact were also detailed.

Mr. Val Martin discussed a range of issues including the principle of renewable energy, the reliability of the resource, public participation, consideration of alternatives, property devaluation, and the failure to carry out a proper environmental impact assessment.

Liam and Moira Miller

Mr. Liam Miller, a landowner to the north of the site, expressed concerns in relation to the health risk arising from the development and the ability to monitor and assess such impact. He further alluded to the unspoilt environment in which it is proposed to site the development and to the rights to tranquility for those living in that location. He noted there were no noise measurements undertaken in the vicinity. Further concerns were expressed in relation to property devaluation and to the adverse impact on tourism in the area.

Mr. Michael Gillespie, on behalf of the Miller families, raised concerns in relation to the dominance of the project in the area and the adverse effects on the enjoyment of residential properties. Reference was made to separation distances between turbines and houses and to EU recommendations and to a bill before the Oireachtas on this issue. Adverse health effects, property devaluation, impacts on the use of their lands, and destruction of the natural environment were discussed. Mr. Gillespie concluded by asking that the costs of the appellants in relation to attendance and representation at the hearing be borne by the applicant and that an order should be made by the Board in this regard.

***Observers' Submissions***

Louis and Joan Hanlon

Mrs. Joan Hanlon raised particular concerns in relation to public health and welfare and referenced her experience of wind turbine noise in her home since wind farm operations were developed in the area in which she lives. The applicant's assessment of visual impact of the proposal was challenged and the question of compensation arose in the event farms and homes had to be vacated. It was concluded that the precautionary principle must be applied to avoid negative impacts on humans, animals and the environment.

Mr. Louis Hanlon made a submission on the adverse impacts on agriculture, on the visual impact, and on property devaluation. Adequacy of insurance in relation to effects of the development, such as a peat slide, was also raised.

Christopher Nethercoat

Mr. Christopher Nethercoat addressed a range of concerns relating to adverse landscape impact, property devaluation, loss of amenity, and health implications. It was submitted the character and appeal of Glenties town would be destroyed by the development, and there would be a decline in tourism infrastructure. Mr. Nethercoat was also critical of the approach by the planning authority in its handling of the proposal and in the zoning of areas for wind energy. Furthermore, the large scale reliance on wind energy and the Government targets were queried and the need for an integrated energy policy was stressed. The need to provide adequate separation between turbines and houses was raised. Finally, responsibility for decommissioning and the duty of landowners and alternatives to improving the power supply into the future were referred to.

Michael Ward

Mr. Michael Ward, one of the 13 landowners involved in the proposed development, referred to the poor quality agricultural land on the site and the potential of the wind farm to increase income. Reference was made to the pattern of emigration in the area previously due to inadequate income, to house vacancy in the locality, and to the historical changes to the town of Glenties. The need for the development was highlighted and the boost to the general area through the annual premium paid to landowners was emphasised. Mr. Ward rebutted third party submissions on noise, public health and tourism impacts and concluded the development was in the interest of progress and the economy of the area.

Charles Swingler

Mr. Charles Swingler referred to the need for the maximum amount of information on grid connection to be provided by the developer in the application in accordance with the Wind Energy Guidelines and for an assessment of its environmental impact. Details were provided on the ability to provide an alternative grid connection at Clogher, referred to earlier in the hearing by the applicant. It was submitted that this is the only connection option offered by Eirgrid, comprising a split of the original Cronacarkfree wind farm allocation. Mr. Swingler noted that this would result in a total connection length from the site of approximately 41km, more than twice the distance understood by the applicant. It was submitted the connection of this wind farm along with the other approved wind farm to Clogher would have a massive negative environmental impact by the provision of 110kV overhead lines. The addition of a second 110kV line through Straboy (i.e. in addition to the recently approved Binbane to Letterkenny 110kV line) was viewed as totally unacceptable. Mr. Swingler also raised concerns about the lack of public consultation, wind turbine noise, and the need to increase minimum separation distances between housing and turbines.

***Cross Questioning***

There was extensive cross-questioning from Day 4 onwards of the hearing. Much of the focus was on the issues of:

- the peat regeneration areas and potential peat slides
- geology and hydrogeology
- ecology and ornithology in particular
- noise
- initiation of the development
- tourism impact
- traffic impact on public roads, and
- public consultation

The full extent of correspondence is contained in the recording. The Board will note that my assessment makes reference to key issues resulting from formal submissions to the hearing and to information resulting from the cross-questioning of expert witnesses.

***Note***

The Board will note that as part of the further information response to the planning authority's request for such information the applicant included a Freshwater Pearl Mussel study on a section of the Owenea catchment undertaken by Dr. Evelyn Moorkens. It was acknowledged in the submission to the planning authority that the data pertained to a separate proposal at Tangaveane. I received correspondence from Dr. Moorkens at the hearing venue on the evening of 22nd October, 2012. I informed the hearing on the morning of 23rd October, 2012 that Dr. Moorkens had forwarded correspondence and that the pertinent detail contained therein was that:

- She had carried out a survey for a proposed wind farm at Tangaveane,
- She was not asked to make to make any assessment of the potential environmental impact of that development or the proposed development on freshwater pearl mussels,
- She was not asked to look at any plan or proposed mitigation measures and could not comment any further on the individual case, and
- She was not involved in the development and had no involvement in the EIS.

The applicant confirmed the accuracy of the above detail.

***Concluding Remarks***

Concluding remarks were received.

Mr. Liam Miller re-emphasised health concerns as the most important issue for consideration.

Mrs. Joan Hanlon remained unassured of the health, safety and community impacts of the proposed development.

Ms. Patricia Sharkey, for Gweebarra Conservation Group, focused on the implications of the proposal for the health and welfare of children, for Gweebarra River and Bay, geology, proximity to Derkmore Lough, the proximity to Glenties, and the lack of sustainable energy benefit.

Mr. John Evans, for Gweebarra Wind Farm Information Group, referred to risk of repetition of a Derrybrien event at Straboy and the consequences of it. He furthermore stressed the inadequacy of the applicant's EIS and submitted the additional submissions by the applicant at the hearing had been found wanting. It was concluded that the balance comes down against the proposal.

The planning authority sought to not add further to its hearing submission.

Mr. Gavin Lawlor, for the applicant, made detailed concluding remarks, submitting the proposal provides a unique opportunity to develop a renewable energy resource and facilitates relevant policy objectives. He identified the key strengths of the site and remarked on the issues regarded as the key issues resulting from the oral hearing. It was concluded that the proposal was in the best interests of proper planning and sustainable development of the country's energy security and for the Glenties area.

***Closure of Hearing***

I concluded the hearing by informing the parties that each will be informed of the Board's decision in writing.

## SUBMISSIONS AT ORAL HEARING

The following is a complete schedule of copies of prepared submissions to the Oral Hearing and other references given to the Inspector:

**Applicant's Submissions**

1. Introduction to the First Party by Tom Phillips.
2. Statement of Evidence of John Ward on overview of the scheme and copy of visual presentation
3. Statement of Evidence of Aiden O'Neill on planning context and copy of visual presentation
4. Statement of Evidence of Peter O'Connor on traffic management and copy of visual presentation
5. Statement of Evidence of Dan Keohane on geology, hydrology, hydrogeology, construction management and peat management and copy of visual presentation
6. Statement of Evidence of Bernadette O'Connell on ecological impact assessment and copy of visual presentation
7. Statement of Evidence of Richard Nairn on ecology peer review and copy of visual presentation
8. Statement of Evidence of Dermot Nelis on archaeology and cultural heritage and copy of visual presentation
9. Statement of Evidence of John Ward on landscape and visual impact assessment and copy of visual presentation
10. Statement of Evidence of Brendan O'Reilly on noise and copy of visual presentation
11. Statement of Evidence of John Ward on shadow flicker and copy of visual presentation
12. Statement of Evidence of Aiden O'Neill on tourism and copy of visual presentation
13. Statement of Evidence of John Ward on grid connection and copy of visual presentation
14. Statement of evidence of John Ward on carbon savings and copy of visual presentation
15. Statement of Dan Keohane on clarification on borrow pits and peat storage and copy of visual presentation/maps
16. Closing Statement of Gavin Lawlor for Applicant

*Additional Submissions:*

A. 3 no. Drawings showing distance of turbines to site boundaries
B. Disc of Environmental Studies on impacts of windfams
C. Update of Table 5.2-10: Summary of Peat Regeneration Area

D. Photomontages for Site Layout
E. Times of days when Photomontages 13 and 14 were taken
F. Existing and permitted windfarms in relation to Glenveagh National Park
G. Wind Energy Map 9 from Donegal County Development Plan
H. Existing and permitted windfarms in relation to Glenveagh National Park and Glenveagh National Park Area of Special Conservation
I. Paper entitled "Golden eagles and wind farms", Haworth Conservation, 2010
J. Enercon Sound Power Level data
K. Extract of test report regarding noise emission for Enercon wind turbine

**Planning Authority Submissions**

1. Statement of Evidence of Frank Sweeney

*Additional Submissions:*

A. Map of Glenveagh National Park in relation to Straboy
B. Map of Glenveagh National Park in relation to the SPA Region
C. Map of Glenveagh National Park in relation to the SAC Region
D. Map of Glenveagh National park in relation to the pNHA Region

**Third Party Submissions**

**Submissions on behalf of Glenties Windfarm Information Group**

1. Schedule of Expert Witnesses
2. Statement of Evidence of Ernan O'Donnell – An overview
3. Statement of Evidence of Dr. Christopher Hanning on noise and public health and disc relating to references made
4. Statement of Evidence of Dick Bowdler on noise, including details on Houses H51 and H52, tables and figures, report on noise measurements in windy conditions, report on development of a wind farm noise propagation prediction model, paper on comparison on predicted and measured wind farm noise levels, details on Drumadarragh and Seegronan wind farms in N.I., BS 4142:1997, and a paper on prediction and assessment of wind turbine noise.
5. Statement of Evidence of Michael McGeehan on tourism, including pie-charts from 2009 Fáilte Ireland publication, Fáilte Ireland visitor attitudes publication, and paper on making the most of natural assets
6. Statement of Evidence of Cllr. John Campbell
7. Statement of Evidence of Siobhan Browne, local resident

8. Statement of Evidence of Joseph Brennan on Red Grouse, including copy of Action Plan for Red Grouse and mapped survey on Aghla Mountain
9. Statement of Evidence of Anne Marie McDermott, local resident
10. Statement of Evidence of Lorcán O'Toole on Golden Eagle, including guidance note on survey methods from Scottish Natural Heritage on survey methods in assessing impacts of onshore windfarms on bird communities
11. Statement of Evidence of Belinda Boyle, local resident
12. Statement of Evidence of Dr. M.J. Cooke
13. Statement of Evidence of Dr. Olivia Bragg
14. Statement of Evidence of Cheryl Quinn (neé McLoone)
15. Statement of Evidence of Ralph Sheppard, Ecologist
16. Statement of Evidence of Prof. Alun Evans & Kate Evans
17. Statement of Evidence of Dr. Fiona Hardy
18. Ráiteas ó Pheadar Ó Baoill agus comhfhreagas idir an t-achomhachcóir agus Comhairle Chontae Dhún na nGall agus An Bord Pleanála.
19. Statement of Evidence from Denise Boyle and Marcus Flannery
20. Slide Presentation and commentary from Joseph Brennan and Ernan O'Donnell
21. Statement of Evidence of Prof. Paul Johnston
22. Supplementary Statement of Evidence of Dick Bowdler, including UK appeal report relating to windfarm development in the Edin District Council area, appeal decision relating to a windfarm at Shipham, Norfolk, noise monitoring at Straboy, paper on Wind Turbine Noise, paper entitled "Effects of the wind profile at night on wind turbine sound", Final report ETSU-R-97 entitled "The Assessment and Ratings of Noise from Wind Farms", weather data from Connaught, and extract from EPA document "Environmental Quality Objectives: Noise in Quiet Areas"
23. Closing Statement of John Evans

*Additional Submissions:*

A. Definition of "Peer Review"
B. Extract from National Spatial Strategy on employment in tourism
C. Extract from the National Development Plan on the tourism programme
D. Extract from the National Development Plan on the energy programme
E. Submission from Failte Ireland on the Green Paper "Towards a Sustainable Energy Future for Ireland"

**Submissions on behalf of Gweebarra Conservation Group**

1. Statement of Evidence of Patricia Sharkey and disc

*Additional Submissions:*

1. Report on Spanish wind farms killing birds & bats

2. EC Judgment C-418/04
3. Council Directive 79/409/EEC
4. Arhus Request from Val Martin
5. Document entitled "Appendix 1 Primary Energy Equivalent Methodology"

**Submissions on behalf of Louis & Joan Hanlon**

1. Statement of Evidence of Joan Hanlon
2. Statement of Evidence of Louis Hanlon

*Additional Submissions:*

1. Photographs of the applicant's landholding relative to the proposed site

**Submissions on behalf of Moira & Liam Miller, Michael Miller, & Bridget Mary Miller**

1. Statement of Evidence of Michael Gillespie

**Observer Submissions**

1. Statement of Evidence of Christopher Nethercoat, including Wind Turbines Bill 2012, and newspaper extracts on effects of wind farms on property
2. Statement of Evidence of Michael Ward
3. Statement of Evidence of Charles Swingler, including copy on disc

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Kevin Moore
Senior Planning Inspector
January, 2013.