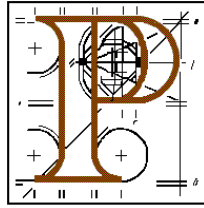


# An Bord Pleanála



## Inspector's Report – Addendum

**Development:** 10-year planning permission for development of a six-turbine wind farm (13.8MW), electricity sub-station, borrow pit, access roads, cables and associated site works at the townlands of Derragh, Rathgaskig & Lack Beg near Ballingeary, Co. Cork. [Revised description subsequently submitted].

### Planning Application

Planning Authority : Cork County Council  
Planning Authority Register Ref. : 12/05270  
Applicant : Framore Ltd.  
Type of Application : Permission  
Planning Authority Decision : Grant Permission

### Planning Appeal

Appellant(s) : Pól Ó Grianna and Others  
Type of Appeal : 3<sup>rd</sup> Party v Grant  
Observer(s) : Caoimhghín & Joan Ó Buachalla agus  
Con Lucey  
: Cecily O'Connell and Others  
: Diarmuid Ó Ceallacháin  
: Joan Uí Chéilleachair  
: Siobhán Uí Chéilleachair  
: Diarmuid Ó Céilleachair

: Seán & Bernadine Cotter  
: Andrias Concannon  
: Shane Ó Duinnín  
: Simon Swale and Noreen Fitzpatrick

**Dates of site inspection** : 18<sup>th</sup> & 19<sup>th</sup> February 2016.

Inspector: **Michael Dillon**

## 1.0 STATUS OF FILE TO DATE

- 1.1 The report of this Planning Inspector to the Board, recommending that planning permission be granted for the 6 no. turbines on this site, subject to conditions, was discharged on 8<sup>th</sup> October 2013. The decision of the Board to grant planning permission (subject to 17 no. conditions) was subject to Judicial Review by Pól Ó Grianna & Others. The decision of the High Court, which issued on 5<sup>th</sup> June 2015, was to remit the case to the Board for reconsideration in accordance with the findings of the Court.
- 1.2 The findings of the Court were, *inter alia*, that the connection of the wind farm to the national grid forms an integral part of the overall development of which the construction of the turbines is the first part; and that the cumulative effects of the construction of the turbines and the connection to the national grid must be assessed in order to comply with the EIA Directive.
- 1.3 The Board assigned a new reference number (**PL 04.245082**) to the original appeal reference number (**PL 04.242223**).
- 1.4 In accordance with section 132 of the Planning and Development Act 2000, the Board invited the applicant, Framore Ltd, to submit, on or before 23<sup>rd</sup> September 2015, the following information-
- Revised Environmental Impact Statement (EIS) to incorporate sufficient information to enable the Board to complete an Environmental Impact Assessment (EIA) in relation to the overall proposal, including the grid connection.
  - Revised Habitats Directive screening, and, if necessary a Natura Impact Statement (NIS) in respect of the overall proposal, including the grid connection.

## 2.0 APPLICANT'S NEW SUBMISSION TO BOARD

- 2.1 On 21<sup>st</sup> September 2015, Fehily Timoney & Co, agent on behalf of Framore Ltd, submitted additional information to the Board, which included a revised EIS in four volumes as follows-
- Volume 1 – Non-technical Summary.
  - Volume 2 – Main Volume.
  - Volume 3 – Appendices.
  - Volume 4 – Figures and Maps.
- The submission also included an Appropriate Assessment (AA) Screening Report and NIS.
- 2.2 The principal changes from the original submission of 8<sup>th</sup> June 2012, include the following-

- Indication of project connection to the national grid at the proposed Coomataggart 110kV sub-station at Grousemount, Kilgarvan, Co. Kerry, using 11.5km of underground 38kV cabling – of which approximately 7.0km is within public roads. The final 2.0km of the route is located within Co. Kerry. [Development consent is not being sought for the grid connection aspect of the overall project].
- Approximately 3.0km of internal access track.
- New cable trench of approximately 1.0km length within the Derragh wind farm site, to facilitate a 38kV cable connection from the nearby permitted Cleanrath wind farm.
- Relocation of turbine T1 a distance of 50m to the south, with consequential minor alterations to the internal access track and underground cabling. The relocation requires a change to the red line boundary of the site.
- Increase in sub-station handling capacity to cater for 38kV connection.
- Maximum output from wind farm to be 20MW – exact output not yet determined, pending future choice of turbine model.
- Applicant requests that any grant of permission would be on the basis of a 25-year operational period.
- Indication that construction period for wind farm will be 8-10 months and the grid connection will be 5 months – to be carried out simultaneously.

### **3.0 BOARD'S CIRCULATION OF APPLICANT'S SUBMISSION**

3.1 The Board circulated the 1<sup>st</sup> Party submission to the following Prescribed Bodies, by letter dated 7<sup>th</sup> October 2015, inviting comments on or before 3<sup>rd</sup> November 2015-

- Development Applications Unit of Department of Arts, Heritage & the Gaeltacht (DoAH&G).
- Heritage Council.
- Health Service Executive.
- An Chomhairle Ealaíon.
- Inland Fisheries Ireland – SWRFB.
- Fáilte Ireland.
- An Taisce.
- Minister for Arts, Heritage & the Gaeltacht.

3.2 The submission was also circulated to the following parties to the appeal – inviting comment on or before 3<sup>rd</sup> November 2015-

- Caoimhghín & Joan Ó Buachalla agus Con Lucey.
- Cecily O'Connell and Others.
- Peter Crossan, Heritage & Environment Consultant, agent on behalf of Pól Ó Grianna and Others.

- Cork County Council.

3.3 Following a Board meeting of 9<sup>th</sup> October 2015, it was decided that a revised bilingual newspaper notice for this development would be required, indicating that significant additional information was received by the Board on 21<sup>st</sup> September 2015, and inviting submissions within four weeks of publication of the relevant notices. The applicant published the revised notice on 28<sup>th</sup> October 2015, but neglected to publish an Irish language version. Revised public notices (both in English and in Irish) were published in the Irish Independent of 5<sup>th</sup> November 2015. The notices indicated that the development/project was located within the townlands of Rathgaskig, Gorteenakilla, Derragh, Lackabaun, Carraignadoura, Gurteenflugh, Augeris, Gortnabinna, Gurteenowen, Lack Beg and Lyrenageeh in Co. Cork; and within the townlands of Grousemount and Sillahertane in Co. Kerry.

## **4.0 RESPONSE SUBMISSIONS**

Response submissions were received in relation to the Board's circulation of documentation to Prescribed Bodies, the parties to the appeal, and also from new observers, following publication of new newspaper notices on 5<sup>th</sup> November 2015.

### **4.1 Response from Cork County Council**

The response, received on 3<sup>rd</sup> November 2015, can be summarised in bullet point format as follows-

- It is noted that the proposal does not encompass a request for development consent in relation to the grid connection.
- The access road to the Coomataggart 110kV sub-station is to be constructed before the wind farm connection.
- Open cut trenching to lay grid connection cable will involve traffic management.
- Alternative routes were considered for the grid connection, as was routing the cables over-ground.
- A new Development Plan has been adopted since permission was originally granted by the planning authority. Chapter 9 of the Plan deals with the issue, and supports windfarm development. As per Figure 9.3, wind farms are 'Open to consideration' in this area.
- It is noted that T1 has been relocated to the south – such that it is now 500m away from the nearest inhabited house.
- The grid connection travels along a section (770m) of existing track alongside Sillahertane Bog NHA. No negative impacts will occur due to the laying of the cable within the track.
- It is noted that Kerry slug surveys were carried out in June, July and August 2015. A certain loss of habitat will occur. The habitat loss

is not considered significant due to the widespread abundance of the species within the conifer plantation area. The footprint of the off-road cable route is small enough to avoid impacting on Kerry slug. It is noted that the NPWS stated in 2013 that “given probable size of population and relatively small footprint of the work, it is accepted that there is not likely to be a significant impact on the species”. It is noted that a Project Ecologist will oversee the work.

- In relation to Freshwater pearl mussel, it is noted that appropriate drainage management techniques and a Surface Water Management Plan are proposed. In advance of construction, a detailed Construction Environmental Management Plan will be prepared.
- It is considered that the proposed wind farm development in association with grid connection will not have any significant impact on the environment.
- Undergrounding of cables is to be preferred.

## 4.2 Responses from Prescribed Bodies

### 4.2.1 Inland Fisheries Ireland

The response, received on 23<sup>rd</sup> October 2015, indicated that there was no further comment to make.

### 4.2.2 Development Applications Unit of DoAH&G

The response, received on 2<sup>nd</sup> November 2015, can be summarised in bullet point format as follows-

- Part of the wind farm site is located within the Toon River catchment – which flows into the Gearagh cSAC.
- A development such as this, in combination with drainage from roads, forestry and farming, can result in increased run-off. This can exacerbate flood levels in rivers. Whilst the run-off is estimated to be 0.25% – in conjunction with hundreds of others in the catchment, could be significant. Part of the track network (360m) and hardstanding of one of the turbines is located within the catchment of the Toon River. The concern is that increased run-off may result in canalisation of the main channels of the Toon River which would be to the detriment of alluvial deposition over the entire forest area ‘Alluvial forest with *Alnus glutinosa* and *Fraxinus excelsior*’. Although the NIS addressed potential effects on the Gearagh cSAC of pollution and siltation from run-off, it does not appear to have fully assessed in-combination effects of increased rates of run-off and consequent greater hydrographic peak on the Gearagh cSAC.
- It could be recommended that sufficient storm-flow attenuation capacity should be designed into the site drainage system to avoid any increase in hydrographic peak in the downstream Toon River.

- Merlin has been recorded breeding in adjacent 10km squares. The species is listed in Annex I of the Birds Directive, and there is an obligation to avoid deterioration in its habitat outside of SPAs. Whilst it is noted that no merlin were recorded during Vantage Point (VP) surveys, the species can be difficult to spot. It is also stated that merlin was not encountered on breeding bird transects. Correspondence between the applicant and the NPWS (dated 2<sup>nd</sup> April 2012), indicated that transects would include searches for potential perch sites. It is not clear if this was done. Page 70 of the EIS indicates that there is suitable breeding habitat in the development site, and the species could forage across the site. There may be some risk of collision with turbine blades. Merlin has been recorded nesting in conifer plantation. Forestry felling needs to be mitigated to avoid impacts on merlin in the possible event that they nest in the plantation.
- It is not clear if Bunsheelin Bridge is used as a roost by Daubenton's bat – protected under Annex IV of the Habitats Directive. At p.39 of the EIS, it states that the bridge is a potential roost. The EIS presupposes that a Derogation Licence will be granted by the NPWS, even though the impact has not been assessed. A Licence should be applied for, assuming use by bats, and an assessment carried out to supplement the EIS, of the effects of any upgrade or maintenance works.
- It is recommended that further information is required in relation to run-off impact on The Gearagh cSAC, collision risk for Merlin, if forestry can be felled to avoid impact on Merlin, and assessment of any repair work required to Bunsheelin Bridge.

#### 4.2.3 Health Service Executive

The response, received on 2<sup>nd</sup> November 2015, can be summarised in bullet point format as follows-

- Continuous noise monitoring should be carried out when the wind farm is operational. Rotation speed of blades should be reduced, if necessary to reduce noise.
- Monitoring for shut down of turbines causing excessive shadow flicker is necessary.
- Mitigation measures for dust and ground water protection should be implemented.
- There is no objection to the development subject to implementation of mitigation measures.

#### 4.3 **Response from 3<sup>rd</sup> Party**

The response of Peter Crossan, agent on behalf of Pól Ó Grianna & Others, received on 3<sup>rd</sup> November 2015, can be summarised in bullet point format as follows-

- The revised EIS which the agent for the applicant has submitted purports to be an EIA – in that the agent assesses the findings of the EIS. It is the job of An Bord Pleanála to carry out EIA – not that of the applicant.
- Whilst the applicant has consulted with the HSE in relation to the impact on the human environment, there is no effective dialogue.
- There is no evidence that the HSE has been consulted in relation to the impact of the development on an identified private water supply.
- There is an absence of transparency in relation to the impact of noise and shadow flicker on humans, such as what methods were used to verify the accuracy of the data supplied by the consultant.
- There may be unfair psychological pressure on a consultant not to submit an assessment that is unfavourable to the developer.
- No opportunity was provided for concerned members of the public to meet with those who had conducted surveys for the EIS. The period of time afforded to respond to a large EIS and a new NIS was only in the region of 30 days. Observers would have had to travel to Cork City to view the EIS. Public consultation falls far short of the spirit of planning and, more specifically, where EIA is required.
- Cork County Council was unsure of the length of the consultation period when contacted by the appellant. The Board's website stated that the case was due to be decided on 4<sup>th</sup> November 2015 – which would give the impression that the public consultation period had passed.
- There has been no reasonable consultation offered to the public in relation to the grid connection aspect of this development. Those living along the route of the grid connection may have assumed that the application would have no impact on them. Those residents are now being offered an opportunity to comment when the application is at an advanced stage.
- Option C is the identified preferred route to connect to the grid. No impact of this route on humans was included in the revised EIS.
- A question is now raised as to whether a connection to the Cleanrath wind farm is now part of this project. The application for the Cleanrath wind farm cannot be changed as it is effectively frozen pending a decision of the High Court on Judicial Review. There was never any indication that the windfarm at Derragh would be connected to Cleanrath – when the application was originally submitted to Cork County Council, under appeal to the Board or during the judicial review proceedings taken.
- It was originally indicated that the connection to the sub-station at Coomataggart would be 20kV. The revised EIS now indicates that the sub-station on the Derragh site will be 38kV. This is a significant material change to the planning application. It would appear to be outside the scope of the argument for remittal



successfully argued by the Board. The lower capacity of 20kV has now been upgraded to 38kV. The dimensions of the sub-station have been increased from 6 x 12.5m to 18 x 24.3m. The question of whether this is to facilitate the connection from Cleanrath or other future development is another issue.

- The current amendments would now seem to be stipulating the connection from Cleanrath to Coomataggart. If the connection to the grid from Cleanrath is now part of the project, then it should be evaluated as part of the EIS. The Board will now be carrying out EIA on only part of a project.
- There is concern in the community that tracts of land surrounding this site may be used in the future for wind turbines. Landowners in Gortyrähilly townland to the north of Derragh, have been secured for the purpose of developing turbines. There is concern that the grid connection will be via Derragh. The question arises whether the NIS submitted should encompass all future developments which might be connected to the national grid through Derragh. The upgrading of the sub-station may imply that further developments are contemplated in the area. This could be considered to be project splitting.
- There are no surveys of the road within which the trench is to be dug to lay the grid connection. It is not clear if the trench will be cut beneath the base layer of the road – and so may be into undisturbed ground. The specification for the trench depth is 1220mm – the trench might be as deep as 1.5m. The unsurfaced sections of track do not appear to have been surveyed either. If it is not known what lies beneath the road, then how can the impact on the human environment be known. The ESB when laying 38kV lines can take up to seven days for some of the elements. It may be that cost-benefit analysis will result in the route being uneconomical, and an alternative will have to be found. If rock is encountered in the trench, then there will be impacts for vibration and noise for residents along the route.
- Domestic water supplies along the route may be impacted. Traffic disruption may affect the school bus.
- Whilst one private water supply in Rathgaskig has been visited, no monitoring proposals or mitigating measures have been put to people with private wells in the area. Residents will have little protection if this development damages their water supply.
- The Carrainadoura public water supply scheme supplies possibly over 40 households. The well is approximately 930m distant from the closest point to the grid connection trench. The vulnerability of the groundwater resource in this area is 'High' to 'Extreme'. The wind farm is uphill of the water supply – so it follows that the trench route for part of the grid connection will be uphill of the water supply also.

- The applicant refers to a group scheme supplying three houses – but it is not clear where this is located.
- The assumption seems to be that because the grid connection is within the public road, there will be no impact on the human environment.
- The revised EIS claims that there is no proven impact on human health from extremely low frequency (ELF). High voltage cables can have impacts on children’s health – and particularly so in this instance where buried cables will be located close to houses – less than 10m. Is it possible that each of the three cables on the line will each be carrying 38kV simultaneously?
- Property values will be negatively impacted by the wind farm and the grid connection. A property to the west of the wind farm has recently been sold for 25% less than the asking price. One reason cited was the proximity of the wind farm site at Derragh – 1.7km distant.
- The NIS contains an extended survey of water courses in the area. Freshwater pearl mussel was encountered in new surveys. It is acknowledged that the development could have a significant negative impact on this species. This impact could occur despite the intention to put in place mitigation measures – the impact being reduced to ‘slight negative’.
- In relation to noise, the impact on receiver H13 appears to have been reduced, despite the fact that T1 has been relocated 50m closer to the house. Without knowledge of wind speed or turbine model, it is not possible to establish the noise impact of this development.
- There is no quantification of the amount of waste which will be generated through trench excavation. It would appear that all material excavated will be replaced with new material. This will result in a substantial amount of waste.
- There are direct contradictions in relation to winter bird surveys in the Cleanrath EIS and the Derragh EIS. The standards enforced for the survey of White-tailed sea eagle are not the same in both EISs.
- The scope of this observation is limited by the short time afforded to make comments on 1,600+ pages of documentation forwarded by the Board.
- Unless the Board commissions its own data and surveys, it is difficult to see how the project can be properly evaluated.
- The route of the grid connection will be the most disruptive to the local community. This is a problem where there are no alternatives available for detours when a road is closed.
- It may well be that the route for the grid connection has been dictated by the shortness of the time afforded to the applicant to select a route.

## 4.4 Responses from Observers

### 4.4.1 Responses were received from the following observers-

1. Cecily O'Connell & Others, Derrinaleachan, Ballingearry – received on 3<sup>rd</sup> November 2015.
2. Caoimhghín & Joan Ó Buachalla agus Con Lucey, Doireach, Réidh na nDoirí – received on 3<sup>rd</sup> November 2015.
3. Diarmuid Ó Ceallacháin, Carraig na Gréine, Aharas Cross, Ballingearry – received on 18<sup>th</sup> November 2015.
4. Joan Uí Chéilleachair, Aharas, Béal Átha an Ghaorthaidh – received on 26<sup>th</sup> November 2015.
5. Siobhán Uí Chéilleachair, Gort na Gréine, Aharas, Béal Átha an Ghaorthaidh – received on 26<sup>th</sup> November 2015.
6. Diarmuid Ó Céilleachair, Aharas, Béal Átha an Ghaorthaidh – received on 26<sup>th</sup> November 2015.
7. Seán & Bernadine Cotter, Gortnabinna, Renanirree, Macroom – received on 30<sup>th</sup> November 2015.
8. Andrias Concannon, Goirtín na Coille, Béal Átha an Ghaorthaidh – received on 30<sup>th</sup> November 2015 [Glactha ar an 30 Samhain 2015].
9. Shane Ó Duinnín, Goirtín Fluich, Béal Átha an Ghaorthaidh – received on 1<sup>st</sup> December 2015.
10. Simon Swale and Noreen Fitzpatrick, Cahernacaha, Ballingearry – received on 1<sup>st</sup> December 2015.

### 4.4.2 The relevant issues raised in these response submissions, where in addition to those already raised by the 3<sup>rd</sup> party, and can be summarised in bullet point format as follows-

- Local roads have recently been repaired and resurfaced. The proposed grid connection will destroy all of that good work.
- Residents of the area did not object when the original application was made for the wind farm, because they thought that the development would not impact on them. Now, with the grid connection passing in front of houses, there is an impact – and not enough time given to go through all of the documentation.
- It is not clear to residents if local roads will be closed, when might necessary road closures be effected, and for how long?
- Was a copy of this document made available in the Co. Kerry Planning Office, and for how long?
- Residents at the Lackabaun end of the grid connection line could not have been expected to anticipate that connection might also be afforded to the Cleanrath wind farm development.
- There is no indication given of where excavated trench materials will be dumped.
- There was nobody available in the Cork Co. Council offices to answer questions on this application.

- The grid connection trench work could have an impact on a dog-breeding and kennels business which is reliant on regular access. Noise could have an impact on the dogs.
- Routing the grid connection along the road is likely to be more for the convenience of the applicant than for those who live along the road.
- Vibration from excavation for the grid connection may damage roadside boundary walls and nearby houses.
- Road closures may affect the ability of emergency vehicles to get into the area.
- The proposed project will impact negatively on tourism in the area.
- The original proposal was for an over-ground connection carried on wooden poles.
- Drainage from the trench excavation for the grid connection, in periods of heavy rainfall, may affect water supplies for houses along the route.
- CO<sub>2</sub> will be released when peat is disturbed for construction of turbines.

#### **4.5 1<sup>st</sup> Party Response to Responses of Prescribed Bodies, the 3<sup>rd</sup> Party, and Observers**

4.5.1 The Board circulated the responses of Prescribed Bodies, the 3<sup>rd</sup> Party and the Observers to the 1<sup>st</sup> Party. The response of Fehily Timoney & Co, agent on behalf of the applicant, Framore Ltd, received by the Board on 10<sup>th</sup> February 2016, can be summarised in bullet point format as follows-

- It is acknowledged that a Road Opening Licence will be required from Cork County. Council.
- The applicant acknowledges the positive observation from the Council.
- In relation to the observation from the DoAH&G, it should be noted that run-off from the site to the Toon River catchment is estimated at 0.07% (from the 360m of track), and the 0.25% increase referred to, relates to the total increase from the development spread over all catchments that drain to the River Lee. The estimated discharge does not take account of any mitigation measures proposed – in the form of SuDS drainage measures such as swales and stilling ponds (with diffuse outfalls). These features will be maintained for the lifetime of the wind farm. The effect of run-off from this site on the Toon River will be negligible. It is expected that any other projects within the catchment will be subject to the same drainage requirements. It can be concluded that the potential in-combination effects associated with any increased surface water run-off for the proposed development in conjunction with other projects within the catchment will not contribute to any significant cumulative impact on the aquatic environment – and The Gearagh cSAC in particular.

- There is no direct discharge proposed to any watercourse downstream of the development. The EIS for the Cleanrath wind farm development commits to providing attenuation of any discharges from the drainage system associated with the wind farm.
- Bird surveys carried out on the site over a number of years were alert to the possible presence of Merlin. The footprint of the site is 4.25ha or 1.65% of the total area of the site – made up of conifer plantation, felled plantation, wet heath and dry heath. The habitats are common in the surrounding area. Felling of trees will take place outside the nesting season – in order to protect nesting bird species (including Merlin). A pre-construction survey (March) will be carried out at proposed turbine locations, to ensure that birds have not nested in the intervening period. If Merlin is found to be present, then works within 500m of any nest will be excluded during the period April to July.
- The typical flight activity of Merlin is below the rotor sweep of turbines – in this instance 50m above ground level. Merlin is not considered to be particularly vulnerable to bird strike/collision risk with wind turbines – according to the EC 2011 guidance document ‘Wind Energy Developments and Natura 2000’.
- Bats were not noted at Bunsheelin Bridge during survey work in June 2015, but nonetheless, the structure offers potential roost for Daubenton’s bat. Ducting beneath the stream will be used at this location – with no impact on the bridge structure itself. Drilling and vibration could cause nuisance to any bats present within the bridge structure. A pre-construction bat survey will be undertaken at the bridge. If bats are found, the work will only be carried out in the vicinity of the bridge under Derogation Licence.
- Noise monitoring will be carried out following commissioning of the wind farm, to ensure that the amenity of residents is not impacted in a negative way. Turbines will be operated in reduced mode to reduce noise output, where necessary.
- Mitigation measures for shadow flicker are outlined in the revised EIS. It will not exceed 30 minutes per day or 30 hours per year.
- Section 5.5 of the revised EIS outlines mitigation measures to reduce nuisance from dust – during the construction phase.
- Water quality in wells and springs will be protected during the construction phase of the project.
- It is noted that Inland Fisheries Ireland had no objection, subject to compliance with IFI requirements in relation to drainage to watercourses. Mitigation measures have been incorporated to reduce the possibility of siltation or accidental discharges of hydrocarbons. Any in-stream works will be carried out in the April-September period.

- The dimensions of the sub-station have not been altered. The sub-station will have a capacity of 38kV – originally no capacity was indicated.
- The grid connection from the Cleanrath wind farm is not proposed as part of the Derragh wind farm application. Derragh and Cleanrath wind farms are not interdependent. Provision is made within the Derragh wind farm for a 38kV connection cable from Cleanrath. An appraisal of potential cumulative impacts due to the proposed development and the Cleanrath wind farm (including the associated grid connection) is included in the revised EIS, in any event.
- Bedrock along the grid connection is indicated at Figure 8.2 of the revised EIS. Excavation in rock is entirely feasible.
- Public consultation began for this scheme in 2011, and during preparation of the EIS in 2012. Additional consultation letters were sent out in 2015. Two public consultation events were held in 2012. Hard copies of the revised EIS were submitted to the Board, and electronic copies of the revised EIS were free to download from Cork County Council. The length of the period for observations was set by the Board, and not the applicant. The applicant appreciates that there was a large volume of material contained within the revised EIS and the NIS. However, a Non-technical summary of the revised EIS was included. This document is designed to facilitate interpretation without technical or expert assistance.
- Chapter 12 of the revised EIS deals with possible disruption of traffic due to cable-laying for the grid connection. An extensive list of mitigation measures is provided at section 12.4.2 – particularly for the cul de sac in Lackabaun townland. Mitigation measures are proposed for access by emergency vehicles.
- In practice, sections of cable trench can be excavated, ducts installed, and trench backfilled relatively quickly, and often during the same working day.
- The 38kV of power conducted along the grid connection will be spread between the three cables.
- Additional cable protection measures may be required at bridge or shallow crossings – such as steel plates or reinforced concrete.
- The location of the cable trench will be located so as to minimise the impact on existing services within the public road.
- Magnetic fields associated with underground cables decrease rapidly with distance. The electric field emissions from underground cables are negligible, as the ground absorbs the field.
- Section 7.6 of the revised EIS outlines the proposed mitigation measures for protection of watercourses (including Freshwater pearl mussel). There will be no instream works at larger water crossings for the grid connection. Only on smaller tributaries within Lackabaun townland will trenching techniques be used. Due to the

size of the streams, they are of limited value for aquatic species. The best practice pollution and sediment controls will be put in place during construction operations. Excavations near watercourses on the grid connection will not take place during months of August to March to protect salmonids and Freshwater pearl mussel.

- Chapter 9 of the revised EIS outlines the measures to be put in place to protect groundwater. The location of water pipes within public roads will be identified before commencement of trench work, and mitigation measures observed to protect these pipes.
- The Source Protection Zone (SPZ) for the Carraignadoura water supply has been clearly indicated in the revised EIS. The grid connection passes through the Carraig na Damhaire stream – but lower down than the borehole. The wind farm and other sections of the grid connection are located within other catchments and are separated from the SPZ both by distance and hydrologically. The grid connection cannot impact on either the yield or the quality of this public water supply.
- Section 10.4.2.1 of the revised EIS deals with property values. Noise mitigation and minimum 500m separation distance between turbines and houses will ensure that the wind farm will not impact on property values. Wind farms do not result in residential property devaluation.
- Different noise prediction parameters were used between original 2012 EIS figures and revised 2015 figures – in line with UK Institute of Acoustics ‘Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise’. This accounts for the difference in predicted levels – even allowing for the relocation of T1. A LiDAR unit was used to estimate the wind speed at a hub height of 100m on this site. Noise appraisal used a turbine with a rated sound power level of 105dB (assuming an uncertainty of 2dB) – i.e. up to 107dB. The appraisal has shown that for this turbine type, the typical 2006 Guideline noise limit criteria can be met, albeit with some mitigation measures for four receivers.
- At properties within 26m of the grid connection, there is a likelihood of exceedance of best practice noise limits of 65dB LAeq. However, this will be of limited duration (2-3 days) – as trench work will move along the road. The kennels referred to by one of the observers is approximately 55m from the cable route – with dog runs being 34m.
- The applicant has provided information in relation to projects in the area which are already constructed or which are permitted or which are undergoing approval. The applicant has no control over lands at Gortyrhilly to the north of the wind farm site, and is unaware of any application for consent for energy development on these lands.

- There will be no excavations in close proximity to watercourses/riparian habitats, and in-stream works will not be undertaken during the salmonid close season (October to March annually), in order to protect spawning salmonids, incubating ova and emerging fry.

4.5.2 The response submission is accompanied by the following items of note-

- Appendix 1 – Relating to impact of wind farms on birds – development of an objective assessment method.
- Appendix 2 – Groundwater Monitoring Programme for Carraignadoura Group Water Scheme – August 2011.

## 5.0 REVISED ASSESSMENT

### 5.1 General Comments

5.1.1 This revised assessment takes into consideration the alterations made to the proposed wind farm development by way of additional information submission of 21<sup>st</sup> September 2015; and the indication of the underground 38kV grid connection route to Coomataggart 110kV sub-station in Co. Kerry. It is noted that development consent is not sought for the grid connection – rather that the impacts of such connection are considered by the Board for the purposes of EIA and AA. I would note that the applicant proposes the development, and seeks permission. Where documentation (revised EIS & NIS) refers to the wind farm and the grid connection, the term ‘project’ is used.

5.1.2 An additional site inspection as carried out on 18<sup>th</sup> & 19<sup>th</sup> February 2016, both on the wind farm site and along the grid connection route. During this inspection of the grid connection route, it was noted that planning application notices had been erected on 22<sup>nd</sup> December 2015, within both Co. Cork and Co. Kerry for redesign of the Cleanrath wind farm and construction of a grid connection to Coomataggart in Co. Kerry.

5.1.3 The principal issues of this appeal relate to the principle of development as set out in national, regional and local policies, visual impact, residential amenity (noise and shadow flicker) and ecology. Other issues include traffic, archaeology, water supply and human health & safety.

5.1.4 Planning applications/permissions of relevance to the Board’s consideration of this appeal, include the following-

**Ref. 11/5245:** Permission refused by Cork County Council for wind farm development of 11 no. turbines at Cleanrath North, Cleanrath South and Derrineanig, Macroom, Co. Cork. On appeal by the 1<sup>st</sup> party to the Board (**PL 04.240801**), permission was granted on 29<sup>th</sup> April 2013. This wind



farm site is located east-southeast of the appeal site – the separation distance being 2.25km between the closest turbines – T4 at Derragh and T6 at the Cleanrath site. The decision of the Board is subject to Judicial Review proceedings in the High Court, with no outcome to date. The revised submission to the Board of 21<sup>st</sup> September 2015, provides for facilitation of an underground cable to link the sub-station of the Cleanrath wind farm into the sub-station for the proposed Derragh wind farm development – 1.0km of which is located within the current appeal site (as outlined in red). The cable trench is to be excavated from the Rathgaskig road as far as the 38kV sub-station within the Derragh wind farm site.

**Ref. 15/6966:** Refers to an application to Cork County Council on 22<sup>nd</sup> December 2015, by Cleanrath Windfarm Ltd, for revision to above-referenced permission – to include a grid connection to Coomataggart 110kV sub-station. The application was accompanied by an EIS and an NIS. Additional information was sought from the applicant on 23<sup>rd</sup> February 2016. [The route of the grid connection is identical to that identified in the Derragh wind farm project – from the Rathgaskig road as far as Coomataggart in Co. Kerry].

**Ref.15/1164:** Refers to an application to Kerry County Council on 22<sup>nd</sup> December 2015, by Cleanrath Windfarm Ltd, for that portion of the grid connection within Co. Kerry – relating to the above-referenced planning application to Cork County Council 9 Ref. 15/6966). The application is accompanied by an EIS and NIS. Additional information was sought from the applicant on 23<sup>rd</sup> February 2016.

**Ref. 15/262:** Refers to a grant of planning permission by Kerry County Council for the construction of the Coomataggart 110kV sub-station (via which it is proposed to connect into the national grid). This sub-station was under construction during site inspection by this Inspector in February 2016. The road base to the sub-station from the county road network is largely completed.

**Ref. PA0044:** Refers to an application to the Board, under the provisions of the Strategic Infrastructure Act, for the construction of a wind farm development of 38 no. turbines within the townland of Grousemount, Co. Kerry – with no decision to date. The portion of the grid connection for the Derragh wind farm within Co. Kerry runs through/partially along the wider red line site boundary of the Grousemount wind farm application.

- 5.1.5 Appendix B of the revised EIS contains copies of letters of consent to the making of the planning application from landowners of the wind farm site, and necessary roadworks to facilitate delivery of outsize loads; but not for the route of the grid connection to Coomataggart sub-station (as consent is not being sought for this aspect of the project).

## **5.2 Development Plan**

- 5.2.1 A new Cork County Development Plan has been adopted since my original report of 8<sup>th</sup> October 2013. Within the Cork County Development Plan 2014-2020, there are general objectives which favour development of electricity from wind energy. Chapter 9 deals with Energy and Digital Media. Figure 9.3 of the Plan indicates that the site is located within an area where wind farm development is 'Open to Consideration'. Cork County Council was satisfied that the development of a wind farm and grid connection was in accordance with the policies of the Development Plan.
- 5.2.2 A new Kerry County Development Plan has been adopted since my original report of 8<sup>th</sup> October 2013. The wind farm site is located approximately 3.5km from the Kerry County boundary – at its closest point. The intervening territory is mountainous. The site will not generally be visible, except from mountain peaks (at some distance) – such as The Paps, Crohane and Stoompa within County Kerry. Some 2km length of the identified grid connection is located within two upland townlands in Co. Kerry.

## **5.3 Landscape Character & Visual Amenity**

### **5.3.1 General Comment**

Section 9 of the original EIS dealt with the issue of landscape and visual assessment. Volume 4 of the original EIS contains the Zone of Theoretical Visibility (ZTV) map and photomontages. The ZTV extends to a radius of 20km. The revised EIS contains additional information in relation to this topic at Chapter 14 and Appendix J – to consider the impact of the grid connection. The original 3<sup>rd</sup> party appeal and response submissions contained additional photomontages. Claim and counterclaim is made in relation to the accuracy of photographs and photomontages submitted by parties to the appeal. On the original dates of site inspection by this Planning Inspector in 2013, visibility was poor in the vicinity of the site – borne out by the photographs submitted with the original Inspector's Report. Visibility was considerably better on the dates of site inspection in February 2016, and additional photographs are included for the consideration of the Board – both at the wind farm site and along the grid connection. Photographs and photomontages are simply an aide for the Board in arriving at its decision, and cannot be relied upon to predict the precise impact of the development in all weather situations. The turbines will be painted off-white and will all rotate in the same direction. This will assist in lessening the visual impact of the development. Access roads, transformers and the electricity compound will be largely screened from view by coniferous forestry. The felling of 7.2ha of coniferous forestry to facilitate the development will not have any

significant visual impact. The turbines will be visible from only a limited area of high ground within neighbouring Co. Kerry.

### 5.3.2 County Development Plan Landscape Character Assessment

The relevant map indicates that the site straddles two Landscape Character Types (LCTs) - No. 15a 'Ridged and Peaked Upland' and No. 12a 'Rolling Marginal and Forested Middleground'. LCT 15 is considered of 'High Landscape Value', 'High Sensitivity' and of 'County Importance'. LCT 12 is considered of "High Landscape Value", 'High Sensitivity' and of 'Local Importance'. The primary landscapes of the county have 'Very High Value' and 'Very High Sensitivity'. The site is located neither within an area "Acceptable in Principle" nor an area "Normally Discouraged" as per map 9.3 of the Development Plan, but rather an area "Open to Consideration" for wind energy development. The ZTV map indicates a wide area of visibility within a 20km radius, but also a significant area from which no turbines will be visible – due to the folding in the landscape – particularly to the west and northwest, within County Kerry. The ZTV does not take into account screening provided by hedgerows and trees – so that the scenario presented is the 'worst case'. The turbines are large structures, and there is no hiding them. The landscape in this area has already been significantly altered through plantation of coniferous trees. I note that there are currently no wind farms in the immediate vicinity – the closest built wind farms being to the west and northwest across the county boundary in Co. Kerry. The tips of blades of these turbines are visible from the more elevated portions of the Derragh wind farm site. The Board has recently granted planning permission for an 11-turbine wind farm at Cleanrath to the east – the subject of Judicial Review. These turbines are indicated at 126m in height – the closest one being 2.25km distant from the nearest turbine (T4) within the proposed development at Derragh. The Cleanrath wind farm is located within a similar Landscape Character Type area, at a slightly lower elevation. That wind farm would have a similar visual impact to the proposed wind farm at Derragh – although the Derragh development is for 6 no. turbines only. As noted elsewhere in this Report, a revised planning application has since been lodged with Cork County Council and with Kerry County Council for these 11 no. turbines together with a grid connection to Coomataggart. The indicated overall height of turbines is now 150m. There will be no visual impact arising from the indicated grid connection from the Derragh wind farm to the national grid – the line indicated being underground for its 11.5km length. I would be satisfied that whilst the six wind turbines would be visible over a wide area, visibility would not be such as to seriously detract from the visual amenities of this rural area.

### 5.3.3 Areas of 'High Landscape Value'

Lough Allua to the south and Gouganebarra to the southwest were identified as 'Scenic Landscapes' in the old Cork County Development

Plan. Whilst Gouganebarra remains an area of ‘High Landscape Value’ in the new Plan, Lough Allua has been removed from such designation. These designations are indicated on figure 13.2 of the Plan. The wind turbines will not be visible from the lakeshore at Gouganebarra – although they will be visible from higher ground around the lake.

#### 5.3.4 Scenic Routes

Section 3.8 of the 2006 Wind Farm Guidelines states- ‘*The visibility of a proposed wind energy development from designated views or prospects would not automatically preclude an area from future wind energy development but the inclusion of such objectives in a development plan is a material factor that will be taken into consideration in the assessment of a planning application*’. This site is located at the junction of 3 no. scenic routes identified in the County Development Plan – S25, S26 & S27. Whilst the wind turbines will not always be visible from all parts of the scenic routes, as indicated in the ZTV map submitted with the application, turbines will be visible from a short length of S25, pretty much all of S26, and about half the length of S27. S25 is a narrow twisting road, wide enough for one car only and certainly not suitable for coach traffic. The same goes for that portion of S27 from Gouganebarra as far as the L-3402 road. Vehicular traffic is not encouraged on these routes by way of signage. There are way-marked walking and cycling trails throughout the area – although none through the wind farm site. The wind turbines will be most clearly visible from S27 to the southwest of the site and from the S26 to the northeast of the site. There is no disguising just how significant will be the impact of these turbines on the views from the S26 & S27. However it does not follow that such impacts must be negative for all viewers. Permitted wind turbines at Cleanrath (the subject of Judicial Review – and now a new planning application) would be similarly visible from Scenic Routes. I would be satisfied that the proposed 6 no. turbines, whilst they will be clearly visible from points along S26 & S27, will not unduly impact on these Scenic Views, due to folding in the landscape, orientation of parts of the affected routes and intervening screening in the form of forestry and hedgerows. The wind farm will be visible from other designated scenic routes in the area – particularly S32, S33 & S34 around Lough Allua, and also from S35 further to the east. I would be satisfied that separation distance from these latter scenic routes would be such as to result in no significant visual impact. Objectors to the development have stated that planning permission has been refused for houses in this area on grounds of interference with Scenic Routes. I would contend that wind turbines are in the nature of strategic infrastructure for the country, and so cannot be judged in the same light as houses, in planning terms. Houses are more likely to endure in the landscape – turbines are granted permission generally for periods of 25 years, and may ultimately be removed, depending on whether planning permission to retain them is or is not granted.

### 5.3.5 Grid Connection

As the grid connection is underground, there will be no visual impact.

### 5.3.6 Cumulative Impact and Inter-visibility

Volume 4 of the EIS indicates built and permitted wind farms within a 20km radius of the site. The closest wind farm proposal was that at Cleanrath to the east – a proposed development when the original EIS for Derragh was being prepared. The Board has since granted planning permission for 11 no. turbines at the Cleanrath site (the subject of Judicial Review, and now a new planning application) – the closest turbine being 2.25km from the nearest turbine at the Derragh site. The Cleanrath site would be similarly visible from scenic routes in the vicinity of Lough Allua. The Cleanrath development would be similarly visible from S26, but would not have the same impact on S25 or S27. The 2.25km separation would be sufficient to distinguish the two wind farms visually – from close-up. Longer views towards the two sites could result in the two becoming merged in visual terms. Other wind farms within 20km would not have any significant cumulative visual impact due to the separation distances involved and due also to the nature of intervening terrain – the area being hilly and mountainous.

## 5.4 **Access & Traffic**

Section 5.2.7 and Appendix D of the original EIS dealt with the issue of traffic. These issues were expanded upon in the revised EIS submitted on 21<sup>st</sup> September 2015 – at Chapter 12 and Appendix H.

### 5.4.1 Delivery Route for Wind Turbine Components

Appendix D of Volume 3 of the original EIS and Chapter 12 of the revised EIS deal with the issue of the delivery route for the turbine components. The proposed route to the site will be from Ringaskiddy, via the N28, N25 and N22. The intended haul route will be via county road L-3402 from Lissacresig on the N22 through the hamlet of Reenanaree to the site (a distance of some 16.6km from Lissacressig). Within Lissacressig – some signage on the N22 may have to be removed temporarily (Area 1 & Area 2). Three pinch points were identified on the L-3402 (Area 3, Area 4 & Area 5). Road signage and fences may need to be temporarily removed to facilitate transport of components – particularly turbine blades at 50m in length. It was originally proposed to remove a rock outcrop (Area 5) along the L-3402. No details of owner permission to carry out works on private lands had been submitted. Appendix O of the additional information submission of 25<sup>th</sup> April 2013, included Land Registry Details, maps and letters of consent from landowners in Area 3 (Lissacresig) & Area 4 (Derragh) for alterations to boundaries to facilitate large loads delivered to the site. This information is repeated in Appendix B of the revised EIS.

Appendix P of the additional information submission and Appendix H of the revised EIS contain details of the works necessary. The additional information submission clarified that revised transportation equipment for blades would obviate the need to remove the rock outcrop at Area 5 – detailed at Appendix Q. This will involve elevating the turbine blade above the level of the transporter. Traffic restrictions will have to be put in place during delivery times of outsize loads (24 for tower components, 6 for nacelles, 18 for turbine blades, 6 for bases and 6 for hubs – total of 60 outsize loads). Condition 11 of the Notification of decision to grant planning permission related to agreement to be reached with the Council in relation to the delivery route. The proposed arrangements are satisfactory. A similarly-worded condition should be attached to any grant of planning permission to issue from the Board.

#### 5.4.2 Access for Conventional Construction Traffic to Wind Farm Site

Normal construction traffic to the wind farm site will use the existing road network – approaching the site from the N22 along the L-3402 or else from the direction of Ballingeary – using the R584. Access to Coillte lands from the south – Rathgaskig road (L-34024) – will not be used for construction traffic – although some traffic would have to use this road to effect the grid connection. Existing Coillte tracks within the site will be used, and widened where necessary. New internal site tracks (approximately 3.0km in total) are to be constructed to facilitate access to turbines. Within the portion of the site not owned by Coillte, trees have recently been planted. Access roads would have to be created when the time came to thin, and later to fell, these trees. All access tracks will be a minimum of 4.5m in width and will be finished with graded aggregate.

#### 5.4.3 Estimate of Traffic Volumes

Table 5.5 of the original EIS gave an estimated 492 HGV movements for deliveries of materials to the wind farm site. Employee traffic of some 15 cars per day was to be in addition to this amount. This significantly underestimated the traffic volumes which would be generated by this development. Chapter 12 of the revised EIS gives an estimate for HGV and LGV trips at Table 12.3. The volume of HGV traffic associated with the wind farm is 3,554 (including outsize loads) – over a nine-month construction period – amounting to approximately 17 HGV movements per day. LGV trips per day would be in excess of this amount. The volume of HGV traffic associated with the grid connection is 3,334 – over a five-month construction period – amounting to approximately 28 HGV movements per day. LGV trips per day would be somewhat less. The combined total of HGV and LGV movements would not be significant in terms of impact spread over the road network in the area. A bond condition was attached by Cork County Council to deal with any issues arising from damage to the road network. A similarly-worded condition should be attached to any grant of planning permission from the Board.

#### 5.4.4 Access Arrangements General

A new access point is to be created from the L-3402 – just to the west of turbine T1. Sightlines at this location are currently substandard. Sightline drawings and photographs were submitted as additional information on 25<sup>th</sup> April 2013 (Appendix N) illustrating proposals to improve sightlines. The new access point is located to the north of a derelict house within the wind farm site boundary. This is indicated on drawings submitted as Appendix H2 of the revised EIS. The additional information submission to Cork County Council indicated that an existing Coillte access point to the site from the Rathgaskig road would not be used for construction traffic. I note that there are two Coillte access points from the Rathgaskig road – one of which was not included within the site as outlined in red. The second will be used for the route of the grid connection. The Roads & Transportation Department of Cork County Council did not have any objection in principle to the development. The proposed access arrangements are acceptable.

#### 5.4.5 Recreational Access

It is proposed to retain visitor access to Coillte lands from the existing entrance on the Rathgaskig road. It is not clear from documentation submitted whether the proposed new access will be available to visitors to access Coillte lands.

#### 5.4.6 Grid Connection

The revised EIS outlines the route of the grid connection – to be underground within public roads and farm tracks for a distance of 11.5km. Approximately 7.0km is within public roads in Co. Cork – the remainder would be within farm tracks in Co. Cork and Co. Kerry. There would be no excavation of public roads in Co. Kerry – just farm tracks and the access to the Coomataggart sub-station (currently under construction). Nonetheless, parts of the rural road network in Co. Kerry would be used to access the western portion of the grid connection. The public roads in Co. Cork vary in width from 6m down to 3-4m. Traffic counts were undertaken at four points in June 2015 (shown on Figure 12.1 of the revised EIS) which indicated AADT for different sections of the road network (Table 12.2 of the revised EIS) – the lowest being 104 for that section of the cul de sac into Lackabaun townland. The volume of excavated material within public roads is estimated at 5,100m<sup>3</sup>. On the western section of the cable route (which does not comprise public road) it is assumed that half of the excavated material will be used as backfill and half taken to an appropriate facility for recovery and/or disposal – i.e. 1,300m<sup>3</sup>. Assuming loads of 15m<sup>3</sup>, this would result in 426 HGV movements for removal of unwanted excavated material. A similar amount of fill material may have to be imported to backfill the grid connection trench. Additional HGV movements will be generated by excavators/drills, cable delivery, concrete

and road construction/repair. Over the length of the route and the time involved to construct the grid connection (estimated at five months), this volume of HGV movements would not be significant in traffic terms. Traffic management – particularly on narrow cul de sac roads would be required – in the same manner as for any pipe or cable-laying within the county road network. Temporary Road Closure and Road Opening Licences would be required from Cork County Council. For the eastern portion of the grid connection route, alternative access is available – even if road sections are entirely closed. However, the western portion from Gurteenowen townland westwards (approximately 2.1km) is a narrow cul de sac, with no alternative access available. Item 21 of Section 12.4.2 of the revised EIS directly addressed this difficulty – specifying a number of additional mitigation measures- such as times of closure, backfilling of trenches in the event of an emergency, consideration of night-time working, maintenance of pedestrian access (escorted if necessary) and provision of temporary parking spaces. It is stated that the timing and sequence of the works would be determined through liaison with the Cork County Council and the local community. This consultation would inform the finalisation of a Traffic Management Plan – an outline of which is presented at Appendix A (Appendix H1) of the revised EIS. This would appear to be reasonable.

#### 5.4.7 Cumulative Impact

The cumulative impact in relation to construction of both the Derragh wind farm and the Cleanrath wind farm (should they both be constructed at the same time) will not be significant on local roads, as access to Cleanrath is from a different network of local roads. The cumulative impact of grid connection trenching will not be significant – except with the possible exception of the Rathgaskig road. Road Opening and Temporary Road Closure Licences will be required from Cork County Council. It would be possible to require that works be carried out at different times or else co-ordinated so that the road remains open in one direction at all times. Given that it is proposed to connect the Cleanrath wind farm into the sub-station at Derragh, this should be entirely feasible. The cumulative impact of the grid connection within Co. Kerry being constructed within the same time frame as any permitted wind farm development at Grousemount would not be significant – as the route runs partially along the boundary of the wind farm development site, and partially along an existing access road to the Coomataggart sub-station.

### 5.5 **Design & Layout**

#### 5.5.1 General

The site is entirely covered by coniferous forestry – some of which has recently been felled, and more of which has only recently been planted for the first time. The site measures 32.8ha, within a wider landholding



owned by Coillte and other individuals. The actual footprint of the development (turbines, new roads and compound) measures 2.6ha. The development will not require the significant felling of any trees outside of planned felling (turbines T5 & T6 and the access roads thereto. Access to the remaining turbine sites T1-T4 will be created through recently planted or replanted coniferous plantation.

#### 5.5.2 Turbines

The proposed 6 turbines (T1-T6) will have hub heights of 100m and rotor diameters of 100m – total base to tip height of 150m. Each turbine will have three blades which will rotate at a rate of 3-25 revolutions per minute (although it is indicated in the original EIS that some models can operate at up to 30 revolutions per minute). Turbines will be off-white/light grey in colour. Turbines T4-T6 will be located within Coillte forestry – and the bases of T5 & T6 will be screened from view. The base of T4 is exposed by recent felling and replanting. The remaining turbines T1-T3 will be located within recently-planted commercial forestry. It will be some time before the bases are screened by the growth of trees. The tapering towers will have a basal diameter of 4-5m. Transformers are located outside the towers (for fire reasons): measurements are 4.5m x 3m x 2.7m high. All transformers are banded. Reinforced concrete foundations are to be poured on site. The revised EIS indicates that turbine bases can measure up to 20 x 20m and will be between 1m and 2m deep: resulting in a requirement for up to 800m<sup>3</sup> of poured concrete per turbine base. In addition, 1,250m<sup>2</sup> hardcore bases will have to be provided for cranes erecting each turbine. The turbines will not be fenced around their bases. The applicant has not indicated a manufacturer for the turbines on the reasonable grounds that design of turbines is changing so rapidly and some models may be more appropriate to Irish conditions. I would be satisfied that the scale and location of the turbines are the most important factors in the consideration of the proper planning and sustainable development of the area. Requirements in relation to noise and shadow flicker are dealt with elsewhere in this report. I note that the Notification of decision to grant planning permission made no reference in relation to micro-siting of turbines.

#### 5.5.3 Electrical Compound

The compound is to be located to the south of a proposed new track – between turbines T2 & T3. It measures 18m x 24.3m. Within the compound will be a sub-station of building. The compound will be surrounded by palisade fencing. There is no water supply proposed – rainwater being harvested for flushing toilets (5,400 litre capacity). The application provides for a chemical toilet and 10m<sup>3</sup> holding tank to be emptied at six-monthly intervals. There will be no discharge of foul waste to ground. There will be no permanent employees on this site once operational. I would see no difficulty with these arrangements.

#### 5.5.4 Cable Trenches

There will be approximately 3,850m of cable trenches excavated within the wind farm site to link turbines back to the sub-station. Trenches will be 1.2m in depth and 0.6m wide. Excavated material will generally be used to backfill the trenches. In addition two further cable trenches will be required from the Rathgaskig road as far as the sub-station – one for the 38kV grid connection from Cleanrath into the sub-station and the other the grid connection from the sub-station to Coomataggart – each one approximately 1.0km in length. Each of the latter two trenches will result in 800m<sup>3</sup> of excavated spoil of which 400m<sup>3</sup> approximately will be reused to backfill the trenches. The remainder will be deposited in the borrow pit or used for landscaping the site.

#### 5.5.5 Borrow Pit

A single borrow pit is proposed – 3,500sq.m in area. It is located to the west of the sub-station – between turbines T2 & T3. Extraction will be by way of a bucket excavator or hydraulic hammer, mounted on the excavator. Blasting is not proposed. Rock will not be crushed or screened, as sandstone and siltstone is expected to be of appropriate size for direct use. Extraction will be up to 2.6m below ground level, and up to 5,400m<sup>3</sup> of rock will be extracted. Two trial pits were opened at this location on 6<sup>th</sup> November 2012. Some 0.5m of peat is underlain by a similar depth of silty sandy gravel, below which is bedrock (a fine-grained purple siltstone). Some 17,100m<sup>3</sup> of aggregate/subsoil is expected to be won from excavation on site for roads, turbine bases and compounds. This will be re-used as fill material on site or for construction of low earthen berms (up to 1m). Approximately 6,600m<sup>3</sup> of aggregate will be sourced from quarries outside of the wind farm site, in the form of Clause 804 material for track and hardstanding surfacing material. The borrow pit will be reinstated using surplus mineral soils and peat excavated on the site. I would see no difficulty with this arrangement.

#### 5.5.6 Temporary Site Compound

The site compound (70 x 50m) will be located to the north of a proposed new track between turbines T2 & T3. A wheel-wash is to be provided within it. Refuelling of vehicles and machinery will take place mostly within this area. Drip trays and spill kits will be stored in this area for use in the event of accidents. This location is satisfactory.

#### 5.5.7 New & Upgraded Site Roads

It is proposed to upgrade 2.1km of existing forestry track to a minimum width of 4.5m. It is proposed to add another 3.0km to this track network. Tracks will be created using rock from the borrow pit on site. Tracks will be constructed of 300mm of hard-core deposited on mineral soil. Peat, where encountered, is to be removed beforehand. Depending on the

quality of rock excavated at the borrow pit, more or less crushed rock will have to be imported to construct access tracks – in any event not less than 6,600m<sup>3</sup>. Condition 9(b) of the Notification of decision to grant planning permission required that no tracks be bound with tarmac, and this would appear to be reasonable. I have noted elsewhere that within that portion of the site outside of Coillte lands, new trees have recently been planted. Access tracks will be required for thinning and ultimately for felling of these trees. The layout of new tracks is to some extent constrained by the character of the landform in this area – largely parallel ridges of rock and intervening valleys. Swales will be provided alongside tracks – terminating in stilling ponds. Stilling ponds will drain diffusely over vegetated ground. I would see no difficulty with the track layout proposed for this site.

#### 5.5.8 Excavated Spoil

Peat probes carried out on the wind farm site indicate depths ranging from 0.0-1.6m at new road and turbine locations. Spoil will be used for embankments or deposited within the exhausted borrow pit, and will not be exported off-site.

#### 5.5.9 Grid Connection Route

The length of the grid connection is approximately 11.5km. The 38kV transmission will be through 3 no. cables laid within a 0.6m wide and 1.2m deep trench. The depth to the cables may vary depending on ground type and crossings (e.g. bridges). Plate 2.2 of the revised EIS gives an indication of typical trenching. The excavated material will be removed to an appropriate facility for recovery and/or disposal. There will be no storage of material along the route. Joint bays (6.0m x 2.5m and 2.0m deep) will be provided where individual lengths of cable are joined. No indication is given of the number required. The location of water pipes, drains and other power/telephone cables within the public road will be ascertained with the relevant service providers and through slit trench investigations. It is stated that it is usual to lay the cables beneath existing services, but that it may sometimes be necessary to lay the cables over existing services. Section 2.5.6.3 of the revised EIS describes how cables will be laid. Section 2.5.6.4 describes how watercourse crossings will be effected – either within existing bridges where there is sufficient space for the ducts, through drilling beneath the watercourse, or else via a trench excavated perpendicular to the flow of the watercourse. Contaminated soils or other waste may be encountered whilst excavating the grid connection. The decision on whether to leave the waste in the ground or to export it to an appropriate waste-handling facility will be taken following consultation with the relevant local authority and/or the EPA. I would see no difficulty with these arrangements. The sharing of the grid connection route with the Cleanrath wind farm development is seen as a positive environmental impact.

## 5.6 Cultural Heritage

Section 13 and Appendix H of the original EIS dealt with issues of cultural heritage. This information is supplemented by Chapter 13 and Appendix I of the revised EIS.

### 5.6.1 Archaeology – Wind Farm

There are stated to be two recorded archaeological monuments within the wind farm site boundary as outlined in red – viz-

- RMP CO 069 039-001 – ringfort or cashel.
- RMP CO 069 039-002 – souterrain.

These monuments are located at the southern end of the site, within mature coniferous forestry – not visible from any road. The souterrain is located within the ringfort/cashel – the entire of which is somewhat overgrown. There are no works proposed within the vicinity of these recorded archaeological sites – the closest turbine T6, being 580m distant, and the closest new track being 480m distant. The application was referred to the Development Applications Unit of the DoAH&G. That Department had no objection to the development subject to archaeological monitoring. This would appear reasonable, on grounds of the extent and spread of disturbance to ground within this site.

### 5.6.2 Archaeology – Grid Connection

The revised EIS addresses the issue of the grid connection from the wind farm site to the Coomataggart sub-station in Co. Kerry. Three recorded monuments are indicated as being located close to the route – two within Co. Cork and one within Co. Kerry – viz-

- CO 069 072 – bullaun stone, associated with Augeris church.
- CO 069 084 – ritual site – holy well, associated with Augeris church.
- KE 095 005 – anomalous stone group.

The two recorded monuments within Co. Cork are located 19m and 23m respectively from the grid connection, and within a public road – where ground has already been disturbed. Movement of machinery in the vicinity of these recorded monuments is identified as potentially requiring mitigation. Section 13.5.1 of the revised EIS identifies the necessary mitigation measures, and includes ensuring that the cable route is located on the east side of the road (as far as possible from the recorded monuments), pre-development archaeological testing along the road, archaeological monitoring to be carried out along the grid connection, and assessment by structural engineer of two old stone bridges prior to commencement of excavation for the cable trench. EIA scoping carried out by the applicant included a letter to the Kerry County Council Archaeological Officer. A response, dated 18<sup>th</sup> August 2015, noted that Kerry County Council will require pre-development archaeological testing

of all areas of the proposed scheme that are located within open countryside and not in existing local roads. Testing should be carried out under licence from the DoAH&G, and a report submitted to the National Monuments Service and Kerry County Council, prior to commencement of works. This would seem to be reasonable. It is noted that consent is not being sought for the grid connection, rather that the potential impact on archaeology/cultural heritage be assessed. Recorded monument KE 095 005 is located approximately 160m from the cable route. There will be no impact on this recorded monument.

#### 5.6.3 General Cultural Heritage of the Area

The appeal and observations refer to the general cultural heritage of this area relating to the march of O'Sullivan Beare, and local stone walls and the part they played in the War of Independence. The proposed development will not involve the removal of any walls. Obviously, turbines will be highly visible within the area, as are other forms of development and land use – such as forestry. The construction of turbines is for a period of 25 years – after which time the local authority can review their impact in the light of new technology or other planning or cultural considerations. I would not consider that the construction of a wind farm or the grid connection would detract from the cultural heritage of this area.

#### 5.6.4 Protected Structures & Structures of Cultural Interest

There are no Protected Structures within the wind farm site boundary or immediately adjoining it. Neither are there any lining the route of the grid connection. The remains of an old stone house and outbuildings were mapped in the northwestern portion of the wind farm site, within the townland of Derragh, during site survey work. This house appears on the 1<sup>st</sup> edition of the OS maps for the country – dating from the 1830's. Photographs of this derelict house and a nearby derelict shed are included within Appendix H2 of the EIS. The house is roofless and in a poor state of repair. Adjoining outbuildings are in a similarly parlous condition. No site works will impact on the remains of these buildings. The revised EIS identified a total of 19 structures of possible cultural interest either on or adjacent to the route of the grid connection within Co. Cork – including bridges, stepping stones and lime kilns amongst others (listed at Table 13.5). In addition, an old stone house was identified within the townland of Grousemount in Co. Kerry. A building is recorded here on the second edition of the OS maps – located some 12m from the grid connection. The project will not have any significant impact on Protected Structures or other items of built heritage.

#### 5.6.5 Gaeltacht Area/Ceantar Gaeltachta

The wind farm site lies entirely within the Muskerry Gaeltacht. The Environmental Impact Statement indicates that any temporary signage will be bilingual. There will be no permanent workers on the site, once

commissioned. The development will not have any impact on the Irish language.

Tá an suíomh mhuilte gaoithe lonnaithe ina iomlán i nGaeltacht Mhúscraí. Scríobhtar san Ráiteas faoin Tionchar ar an gComhshaol go mbeidh fógraí sealadacha dhá-theangach. Ní bheidh oibríthe buan ar an suíomh tar éis tús na forbartha. Ní bheidh tionchar ar an teanga Ghaeilge maidir leis an bhforbairt seo.

## **5.7 Noise & Vibration**

5.7.1 Section 12 and Appendix I of the original EIS deal with the issue of noise. This information was revised and supplemented by chapter 6 and Appendix D of the revised EIS, which dealt with the joint issues of noise and vibration. The revised EIS indicates the position of the proposed Cleanrath wind farm turbines and noise receptors around that development, and considers the potential noise impact of both wind farms operating at the same time. Two types of noise - mechanical and aerodynamic – are caused by wind turbines. Noise will not increase at wind speeds greater than 10m per second (due to the impact the of the wind noise itself on the hearer). Houses within 1km of the turbines were identified as noise-sensitive receptors. Further baseline noise monitoring was carried out in August 2015, at three locations- NML1, NML14-18 and NML15-17 (all within the wind farm site boundary). The background daytime  $L_{A90}$  at NML1 varied from below 30dB up to 34dB; at NML14-18 it never went above 30dB; and at NML15-17 similarly never went above 30dB. Night-time levels were even lower, never being above 30db for NML1 and not above 25dB for NML14-18 and NML15-17. No baseline noise monitoring was carried out at adjacent noise sensitive receptors, on the grounds that permission could not be obtained from the owners. Derived noise limits were established for nearby houses arising from proximity to the 3 no. baseline monitoring locations – indicated at Table 6.11 of the revised EIS. Table 6.21 of the revised EIS indicates predicted noise levels (day-time and night-time) at houses in the area, for wind speeds from 3-10m/s – above which it is considered that wind noise would obscure any noise from turbines. Houses H14, H15, H17 & H18 were estimated to be most affected by the proposed development. At wind speeds of 6m/s, predicted  $L_{A90}$  sound for H14 was 2dB in excess of the day-time recommendation, and for H18 was 2.7dB in excess of the day-time recommendation level. A small number of other exceedances were in the range of 0.1-0.4dB for higher wind speeds. Infrasound noise emissions are significantly below the threshold of perception for acoustic energy. The World Health Organisation states that there is no reliable evidence that infrasound below the hearing threshold produces physiological or psychological effects.

- 5.7.2 The additional information submission to Cork County Council further dealt with the issue of noise. Not all of the four most affected houses are located downwind of the turbines all of the time – because of the layout of the wind farm. Two derelict/vacant houses have been included in noise monitoring – D1 & D2 (subsequently indicated as H20 & H19 respectively). H20 (most affected) is in the ownership of one of the promoters of the scheme, and he acknowledges the impact that turbines will have on the dwellinghouse, which is only 330m from T1.
- 5.7.3 Noise levels in relation to construction activity will be of limited duration. No blasting is proposed at the borrow pit. Rock breaking will result in some nuisance, but the separation distance from the closest house (435m) will ensure that noise will not cause nuisance to receptors. Some night-time noise may be inevitable arising from delivery of large turbine components or pouring of foundations for turbine bases. However, such occasions would be limited in number. Noise nuisance from excavation of the trench for the 38kV grid connection will be limited to 2-3 days in the vicinity of any house. Any noise caused during decommissioning will be of limited duration.
- 5.7.4 The appeal and responses thereto contain some criticism of and additional information in relation to, noise. It is suggested that this area is particularly quiet, with noise levels in the range of 15-20dB. It is further contended that larger turbines make more noise. It is contended that turbine noise had been underestimated by up to 2dB. Noise assessment graphs should have been shown for houses H14 and H18. It is also contended that wind speeds have been used for 57m turbine heights and not 100m turbine heights. The applicant contends that using wind speed measurements from a nearby wind farm is acceptable – being within a margin of 0.25m/s of what would be expected. Revised graphs were submitted by the applicant for wind speeds at hub heights of 100m. Wind monitoring at the site was unattended.
- 5.7.5 Condition 13 of the Notification of decision to grant planning permission related to permitted noise levels, and measurement at nearest noise-sensitive receptors (in this instance, houses). The condition referred to the greater of a 43dB  $L_{A90}$  limit or 5dB(A) above background levels. The condition refers to agreement in relation to a noise compliance monitoring programme. Condition 25 related to a one-year timeframe for noise monitoring, following on from commissioning. The appellant has argued that this is too long a period, and I would be inclined to agree. A six-month period would be more appropriate. The 2006 Guidelines state that noise will not generally be a problem where the separation distance between turbine and house is greater than 500m (with no reference made to height or power output of the turbine). The Guidelines recommend a limit of 35-40 dB  $L_{A90}$  where background noise levels are low – such as is the case in

this area. The revised EIS contends that the mid-point of this range should be chosen – based on the low number of houses in the vicinity, the effect that limiting the power output to reduce noise would have on the overall output of the wind farm (in this instance one turbine would need to be curtailed in its operation or removed altogether), and the duration and level of exposure to noise. Table 6.11 indicates the proposed noise limits for receivers for day-time (varying depending on wind speed) and for night-time (a flat upper limit of 43dB  $L_{A90}$ ). The Guidelines recommend this night-time fixed limit of 43dB(A). The Board has in practice been using this limit, or else 5dB(A) above background levels (whichever is the greater), in conditions attached to wind farm permissions – applicable to the entire 24-hour period. Having regard to the low baseline noise recorded by the applicant in this area, it is the case that noise output would exceed 5dB(A) above background levels at certain lower wind speeds, but predicted noise levels for receptors do not rise above the 43dB(A) threshold. The noise contour map submitted at Figure 6.14 of the revised EIS indicates the position of receptors relative to the important 43dB(A) contour. No houses, other than H20 (unoccupied and in the ownership of one of the promoters of the development) are within this contour. In order to mitigate against nuisance during day-time operation, the applicant proposes to run the turbines in noise-reduced mode (reducing the rotational speed of the turbines). The turbines concerned are T4 & T6. The example used is a GE 103-type turbine. There is a possibility that another type of turbine would not be required to be run at noise-reduced mode if it could achieve 35dB  $L_{Aeq}$  during operation at the nearest receptor. I would be satisfied that appropriate noise-monitoring conditions would be acceptable in the case of this wind farm.

- 5.7.6 The closest house to the 38kV grid connection trench is 12m. Trench excavation, cable-laying and refilling of trenches would be of limited duration – estimated at 2-3 days in the vicinity of any one house. The separation distance between the closest house and the trench will ensure that vibration will not be a nuisance to residents. The closest house to the borrow pit is stated to be 435m – a separation distance which will ensure that there will be no vibration nuisance. No blasting is proposed at the borrow pit.

## **5.8 Shadow Flicker**

- 5.8.1 Section 5.2.6 of the original EIS dealt with the issue of shadow flicker. Chapter 11 of the revised EIS takes into account the relocation of T1 some 50m to the south. The assumed rotor diameter was 100m – although this may be subject to change depending on the turbine model which is ultimately selected. Residential properties within 1km of the site were examined in 2012, and again in 2015 – numbered H1, H2, H3, H13, H14, H15, H16, H17, H18, H19 & H20 (the latter two being derelict). Assuming



100% sunshine, all but H3 & H16 would exceed the 30-minute daily limit set down in the 2006 Wind Energy Guidelines – as set out at Table 11-2 of the revised EIS. H1 & H20 are the most affected, with 71 and 70 minutes potential daily exposure to shadow flicker respectively. This is a worst case scenario, as it is unlikely that the sun will be shining 100% of the time. The model employed also assumed no screening from trees or hedgerows. The model assumed that the wind direction was always parallel with the line between the sun, the turbine and the window in question. Cloud covers the sky well over 50% of the time in Ireland, and typically only between 30-40% sunshine potential would be available for the months of April to September. Mitigation measures outlined at section 5.3.6 of the original EIS included planting of screening vegetation and installation of blinds (with the agreement of owners) and the curtailment of operation at certain times. It is stated that the turbine shadow flicker control system (as outlined in section 11.5 of the revised EIS) can be modified to meet any revised planning requirements which may emerge from revised Wind Farm Guidelines which may issue before the Board makes its decision on this appeal. I note that there is no indication that more stringent guidelines are about to issue at national level.

- 5.8.2 The additional information submission of 25<sup>th</sup> April 2013, addressed further the issue of shadow flicker at Appendix L. There is a derelict house adjacent to the site entrance – in the ownership of one of the promoters of the scheme. This Dwelling H20 (formerly D1) is closer to the turbines than any other house. There is a letter submitted from the owner of this house acknowledging the impact of the development on the house in terms of shadow flicker and noise. The revised EIS indicates that H1 is some 535m from T1, and is most affected by shadow flicker (excluding H20). H18 is only 524m from T5, but because of its position in relation to the wind farm and due to local topography, the impact of shadow flicker on this house is not nearly as great as on H1. The applicant contends that because sunshine will in reality be available 33% of the possible number of hours, no house (other than H20) will be subject to in excess of 30 minutes of shadow flicker on any day.
- 5.8.3 The 2006 Guidelines refer to houses within 500m of turbines, but also refer to shadow flicker above 10 rotor diameters (in this instance 1,000m) – not being significant. The Guidelines are silent in relation to houses located between 500m and 10 rotor diameters – in this case 1,000m. Mitigation measures such as screen planting and blinds on windows are not likely to be effective – and need agreement from affected house-owners. Shutting down the offending turbine(s) during the affected time periods would be a more desirable solution. Section 11.5 of the revised EIS sets out proposed mitigation measures which might be required, (following on from evaluation of existing screening, orientation of existing windows and the period of shadow flicker actually occurring) and which

will be undertaken during the commissioning phase of the development (in consultation with an relevant property owner). Table 11-3 of the revised EIS indicates the turbines, and dates, which are likely to cause shadow flicker nuisance. Assuming maximum sunshine and appropriate wind direction, there are four houses (excluding H20) impacted by T1, T2, T4 & T6, and recommends shut-down – controlled by light sensors affixed to turbines. Condition 14 of the Notification of Decision to grant planning permission addressed this issue. An appropriate condition could be attached to any grant of planning permission issuing from the Board to mitigate potential shadow flicker nuisance – relating to shut-down times for offending turbines. Because of the separation distance from the Cleanrath wind farm, there is no potential for cumulative impact arising from shadow flicker.

## **5.9 Ecology**

5.9.1 Section 6 and Appendix E of the original EIS dealt with the issue of ecology. Chapter 7 and Appendix E of the revised EIS further deal with this issue. An NIS was submitted on 21<sup>st</sup> September in relation to potential impacts on European sites.

5.9.2 There are no nature designations within the wind farm site, although there are a number of Special Protection Areas, Special Areas of Conservation and Natural Heritage Areas in the vicinity of the wind farm site and grid connection as follows-

- Mullaghanish to Musheramore Mountains SPA – 8.3km.
- St. Gobnet's Wood SAC – 6.8km.
- Sillahertane Bog NHA – 3.9km from the wind farm site – but traversed by the grid connection.
- Conigar Bog NHA – 9.9km.
- Lough Allua pNHA – 3.0km.
- Ballagh Bog pNHA – 7.9km.
- Gouganebarra Lake pNHA – 8.0km.
- Prohus Wood pNHA – 9.6km.

The additional information submission of 25<sup>th</sup> April 2013, also included-

- The Gearagh SAC – 11.0km.
- The Gearagh SPA – 11.0km.

Lough Allua is the closest pNHA – being hydrologically connected to the wind farm site and the grid connection – being just 3km south of the wind farm site and approximately 2km southeast of the closest point along the grid connection. Gouganebarra Lake, Ballagh Bog, Conigar Bog and Sillahertane Bog are NHAs in different surface water catchments – but the latter would be impacted by the identified grid connection within Co. Kerry.

5.9.3 The wind farm site comprises coniferous plantation – some of which has been felled and replanted, and yet more of which is only recently-planted

for the first time. Extensive drains have been dug throughout the site to facilitate planting. Sandstone outcrops are evident throughout the site. Habitats on site were classified following walkover in December 2011. Wet heath and dry heath habitats within the site have recently been planted with trees, and species within these habitats will die away as coniferous trees grow to maturity. Site walkovers were carried out in 2011 and 2012 for mammal species. No bat survey was carried out, as the site habitats were unsuitable. The site was assessed for winter birds on 2<sup>nd</sup> February 2012 – particularly Whooper swan at Lough Allua, 3.0km to the south. Red grouse was surveyed under licence from NPWS. Vantage Point (VP) surveys for raptors were carried out in March & April 2012 – for species such as Hen harrier, Merlin and White-tailed sea eagle. Breeding bird surveys were carried out over two days in March & April 2012. No rare flora species were encountered on the site – survey list included at Appendix E-5.

- 5.9.4 Following a detailed request for additional information, further studies were carried out and details submitted on 25<sup>th</sup> April 2013. These included assessment relating to the Kerry slug, Hen harrier, White-tailed sea eagle, wintering waterfowl, bats, Whooper swan, Merlin, Peregrine falcon and Red grouse. A possible Hen harrier roost was observed 500m from the nearest proposed turbine.
- 5.9.5 Additional studies and surveys were carried out between June and August 2015, both within the wind farm site and along the grid connection. A habitat survey for the grid connection, where it leaves the road in Lackabaun townland, is included as an insert of Figure 7.6 of the revised EIS. Additional diurnal VP surveys for birds were carried out during June and July 2015. Additional breeding bird surveys were carried out on one day in each of the months June, July and August 2015, at the wind farm site. Only Kestrel and Peregrine falcon (of the raptor species) were observed during these additional surveys. Meadow pipit (a Red List species) was recorded as being plentiful. Chough and Peregrine falcon were observed on the site in the 2015 surveys – both are Annex I species. White-tailed sea eagle was not observed crossing the site during surveys – the closest identified roost is at Sillahertane in Co. Kerry (some 7.0km from the wind farm site). Coniferous forestry is not preferred for hunting prey. The impact on this species is not likely to be significant. This is a small wind farm development, and the impact on Peregrine falcon will not be significant. Hen harrier has been known to roost over 500m from T6. Outside of breeding season the birds are generally low fliers – not at risk of collision with turbines. No breeding activity is recorded within the wind farm site. The nearest Hen harrier site is the Mullaghanish to Musheramore Mountains SPA, 7.25km distant. Waders and waterfowl do not regularly overfly the site. A flock of 14 Greylag geese was observed overflying the site in July 2015. The species has a high avoidance rate of

turbines. VP surveys indicate that the wind farm site is not on any major migratory pathway. There were no observations of Whooper swan overflying the site. The potential for collision with turbines is low. The wind farm site is not suitable habitat for Red grouse. The applicant addressed the issue of Merlin (of concern to the NPWS) in the response submission received by the Board on 10<sup>th</sup> February 2016. No Merlin were recorded during site surveys. The habitat which will be lost on site is widely available elsewhere within the site boundary and also within coniferous plantations within 2.0km of the wind farm site. Merlin, because of its flying habits is not regarded as being of high risk of collision with turbine blades. This assessment appears reasonable.

- 5.9.6 Aquatic ecological surveys were carried out in July 2015, at a total of 24 no. sites within both Counties Cork and Kerry. These included visual inspection in all, kick sampling in five, and Freshwater pearl mussel Stage 1 surveying in seven (carried out under licence from the NPWS) – indicated at Table 7-1 of the revised EIS. Surveys revealed unpolluted waters at all but one location. The wind farm and most of the grid connection drain to the River Lee, whilst that portion of the grid connection within Co. Kerry drains to the Roughty River. The applicant consulted with NPWS prior to submission of the revised EIS. Inland Fisheries Ireland was consulted, and was satisfied with the proposal, provided mitigation measures were put in place to prevent siltation of watercourses or leakage of hydrocarbons, and requirements in relation to works carried out at watercourse crossings.
- 5.9.7 The issue of aquatic ecology occupies a considerable space in the relevant chapter of the revised EIS. The Roughty catchment in Co. Kerry and the Lee catchment in Co. Cork could be impacted by the development. The wind farm site is drained by a number of tributaries of the Lee – principal amongst which are the Toon River, Aghnakinneirth (Eachros) River and the Bunsheelin River – together with a number of smaller tributaries. The Bunsheelin River and its tributaries drain most of the grid connection in Co. Cork, with the Roughty River tributaries draining the grid connection route within Co. Kerry. Lough Allua pNHA to the south of the site contains Freshwater pearl mussel and alluvial woodland, together with diverse habitats and protected species. No wind turbine is within 100m of a watercourse. The measures to be put in place to prevent siltation of drains at the wind farm will ensure that significant amounts of silted water do not flow from the wind farm site into local streams. Most rivers in the area are salmonid, and contain Brook lamprey species.
- 5.9.8 The Kerry slug is widespread across the site. The species utilises both conifer plantation and clear-fell areas. Approximately 7.2ha of coniferous plantation will be felled to facilitate the wind farm and access roads. The species takes advantage of clear-felled areas also. The overall loss of

habitat (4.25ha) will not be significant in terms of overall similar-type habitat in the vicinity (113ha). Contact with the NPWS indicated that a Derogation Licence was not likely to be required for this species.

- 5.9.9 Surveys revealed mammal species within the wind farm site. As the site is already crossed by forestry tracks, there is already disturbance in the area. The construction period will result in some displacement for mammal species, but this will be of short duration (8-10 months). The site will not be staffed on a permanent basis.
- 5.9.10 Evaluation of likely risk of bat species colliding with turbines is outlined at Table 7-27 of the revised EIS (based on work carried out by Natural England). Risk is high for Leisler's and Nathusius' pipistrelle; medium for Common pipistrelle and Soprano pipistrelle; low for Daubenton's, Natterer's, Whiskered, Brandt's, Long-eared and Horseshoe. Bat activity was recorded as being low on this site. Only one Leisler's bat was recorded. The potential collision risk to bats during the operational phase of this development is estimated to be slight. This would seem reasonable – regard being had to the unsuitability of conifer plantation for bat activity. No old buildings will be demolished to facilitate the development. Crevices in bridges would be examined for bat roosts prior to any work being carried out for the grid connection.
- 5.9.11 The grid connection for the wind farm is indicated as traversing 770 linear metres of Sillahertane Bog NHA. This NHA is designated for upland blanket bog. Survey work revealed a mosaic of upland blanket bog, wet heath, and poor fen & flush habitats to the north and south of the farm track – although only lands to the north are included within the NHA. The habitat types accord with Annex I habitat types 'Northern Atlantic Wet Heath with *Erica tetralix*' and 'Active Blanket Bog' (Priority habitat). I note that old turf banks (where peat was harvested in the past) are still in evidence within the pNHA. The trench for the grid connection would be located within a farm track (old Kilgarvan Road) on made ground. This track is currently fenced on both sides within Co. Kerry. The trench would be 1.2m deep and 1.2m wide. Excavated material will be used to refill the trench. The habitats in the vicinity of the track have been compromised by the excavation of drains on either side – which has resulted in flanking peatland drying out. The work for the grid connection would not have any significant impact on the habitats present in the NHA. Red grouse is present within Co. Kerry. There would be some disturbance during the laying of the grid connection, but this would be of limited duration. A section of the cable is to be laid within a permitted road to the Coomataggart sub-station. The grid connection is 7.5km upstream of the Roughty River pNHA. This separation distance would ensure that any siltation caused by the project would not have a significant impact on the pNHA – the ecological interest of which relates to the species Scully's

hawkweed. Otter activity was recorded at a bridge on the Bunsheelin River. The grid connection would not have any significant impact on this species. Any disturbance caused by trench work would be of short duration. The trench is running along a road at this point. Bunsheelin Bridge offered potential roosting for Daubenton's bat. The revised EIS outlines avoidance and mitigation measures for the grid connection where it crosses watercourses (up to 14 in number) – either using existing bridges, boring beneath the channel, or where this is not possible, excavating a trench through the watercourse whilst diverting the channel or over-pumping (mostly on the upper reaches of the Bunsheelin river within Lackabaun townland. These measures are considered reasonable to protect watercourses

5.9.12 Freshwater pearl mussel is present in Lough Allua, the Toon River and the Roughty River – downstream of the proposed wind farm and grid connection. The development is not likely to impact on Freshwater pearl mussel through siltation – regard being had to the separation distances involved and the mitigation measures to be put in place during excavation and construction. The Kerry slug is widespread throughout this wind farm site, both within and outside forestry areas. Habitat along the grid connection is not conducive to this species – requiring rock outcrops. The footprint of the wind farm site is relatively small (4.25ha) in relation to the overall area of similar habitat within the wider boundary of the site. The loss of habitat will not be significant. A bat survey revealed that bat activity across the wind farm site was low. There are no plans to demolish old stone buildings on site which might serve as bat roosts. The site is not on any major migratory route for wintering waterfowl. Whilst raptor species have been observed on site, none were recorded breeding or roosting within the site boundary.

5.9.13 Whilst there are 15 proposed or permitted wind farms within 20km of the proposed site, only one is within 5km – at Cleanrath. The cumulative impact of the proposed wind farm with Cleanrath will not be significant in ecological terms. It is proposed that an ecologist will be present during site clearance – particularly in parts of the site which could not be penetrated during survey work due to dense vegetation. Construction will take place during daylight hours only. I would be satisfied that the extensive survey work carried out in relation to ecological matters, together with the distance of the site from nature conservation areas, and taken in consideration with the mitigation measures proposed, will ensure that the proposed development will not have any significant impact on habitats or species either within the wind farm site, in its vicinity, or along the grid connection.

5.9.14 Impacts on ecology from decommissioning are likely to be limited to disturbance to bird species and mammals, caused during removal of

turbines and equipment from the site. The disturbance will be of limited duration. There is no proposal to remove any access tracks or buried cables – so there is unlikely to be any impact on watercourses and associated species and habitats. This aspect of the development will not have any significant impact on the ecological environment.

5.9.15 The principal mitigation measures to be implemented are set out below in bullet point format-

- Project ecologist to be employed for duration of construction phase.
- Site works will be restricted to small footprint.
- Where vegetation is to be removed, it will be checked for mammals (including bats).
- A 50m buffer will be maintained between trees and turbines – to protect bat species.
- Most construction will take place during daylight hours.
- Bridges along grid connection would be inspected for potential bat roosts.
- Removal of vegetation will be restricted to period outside of the bird breeding season, insofar as is possible (March 1<sup>st</sup> to August 31<sup>st</sup>).
- Any Snipe nests will be set within an exclusion zone of 500m (April to June).
- Measures to control discharge of silt (settlement ponds, stilling ponds, silt traps, silt fencing, overland outfalls) will be implemented within the wind farm site and along the route of the grid connection.
- Use of V-notched dams and settlement ponds to control surface water run-off from the wind farm site.
- Various stream-crossing methodologies for grid connection will be utilised.
- Turbidity meters will be installed upstream and downstream of construction activity on wind farm site.
- Most sensitive works will be carried out outside the Salmonid close season – i.e. between the months April to September.
- A Kerry Slug monitoring programmed will be carried out when construction is complete, and three years later.
- Any plantation tree felling will be subject to licence.
- Trenches will be excavated during dry periods, where possible.
- Wheel-wash facility will be provided at the entrance to the wind farm site.
- Fuel and lubricants will be stored in bunded tanks.
- Construction Environment Management Plan (CEMP) to be followed.
- Monitoring for bat fatalities during first three years of operation.
- Post-construction annual monitoring for birds (collision, barrier and displacement).

## 5.10 Geology, Soil & Hydrogeology

Section 7 and Appendices F & G of the original EIS dealt with geology, hydrogeology and slope stability. Chapter 8 and Appendices F & G of the revised EIS further deal with these issues.

### 5.10.1 Geology

The wind farm site and the grid connection are underlain by Devonian Old Red Sandstone – comprising pink/grey-green/purple siltstone and fine sandstone of the Bird Hill Formation and the Gun Point Formation. The site is characterised by ridges of bedrock outcrops with peat settled/lodged between the ridges. The soil in the area is principally glacial till deposits and peat. Some rock is to be extracted from a borrow pit between turbines T2 & T3.

### 5.10.2 Peat Stability

A peat probe survey was carried out in the vicinity of proposed turbines which showed maximum depth of peat to be 0.5m. Further probes around the site indicated maximum depth of 1.8m. The landform in the area trends downhill from north to south – with typical gradients between 2-4 degrees. Because of the nature of the landform – rock outcrops along ridges with peat lodged between, and the coverage of the site by coniferous plantation, the likelihood of a peat slide is minimal. The development has been designed to make maximum use of existing forestry tracks. Additional probes were made in August 2015, within the blanket peat at the western end of the grid connection route (within Co. Kerry). The position of probes is shown on Figure 8.3 of the revised EIS. The maximum depth encountered in 29 probes was 1.8m. The deepest peat is at the location of the Coomataggart sub-station (currently a construction site). The peat strength profile was measured using a hand-held shear vane. Undrained shear strength of the peat ranged from 15kPa to 17kPa – at the upper end of shear strength. The grid connection within Co. Kerry is along an old farm track (made ground) through Sillahertane Bog and on to the line of the access road to Coomataggart sub-station. The Geological Survey of Ireland is stated to have no records of slope failure either within the wind farm site or along the grid connection.

### 5.10.3 Rock Stability

At the western-most section of the grid connection route, within the townland of Lackabaun, the topography rises sharply from the valley up to 470m OD at the county boundary – illustrated in photographs 4 & 5 of Appendix F of the revised EIS. Slopes are up to 45 degrees in this area, and past rock-toppling is evident along the farm track. It is considered that rock toppling will continue to occur on these steep slopes, but that the construction of the cable trench will not result in increased risk of this occurring, as the cable route follows the line of an existing farm track (old



Kilgarvan Road). Rock cutting would have to be undertaken at some points along this route in Lackabaun where rock outcrops are evident along the farm track.

#### 5.10.4 Ground Water

The bedrock aquifer beneath the wind farm site is classified by the Geological Survey of Ireland (GSI) as 'Poor – unproductive except in local zones'. Groundwater vulnerability is classified as 'Extreme' due to bedrock outcrops and shallow soils. Groundwater was encountered at 2.7m in one of the trial holes excavated for the borrow pit. As excavation is to be no greater than 2.6m, it is unlikely that groundwater will be reached within the pit, and hence, dewatering is unlikely to be required. If dewatering is required, then three ponds will be constructed in series, separated by overflow weirs. Final discharge will be to the stilling pond for the borrow pit, which will have a diffuse outfall over ground. The same bedrock aquifer underlies most of the grid connection – with the exception of approximately 2.5km where there is a Locally Important Aquifer – Moderately productive locally. Any necessary dewatering of the grid connection trench will be pumped to a stilling pond or mobile silt-buster. As progress in relation to trench excavation is expected to be no more than 50-100m per day, and water to lodge only at topographical low points, the likely necessity for dewatering will be limited and temporary. The Carrainadoura source protection zone is located some 570m from the closest point of the grid connection. The source is generally uphill of the grid connection – except in the vicinity of the wind farm site itself. However, in this area the wind farm is more than 1.0km from the source protection zone, and is separated from it by an intervening stream within a valley. The excavation of a trench to lay the grid connection will not have any impact on this source protection zone (indicated at Figure 8.4 of the revised EIS and within Appendix 2 of the 1<sup>st</sup> Party response received on 10<sup>th</sup> February 2016). The line of the grid connection has a groundwater vulnerability of 'extreme' or 'high'. As it is located mostly within disturbed ground beneath roads or tracks, the impact of excavation of the necessary trench would not pose a significant threat to groundwater. There is no proposal to extract ground water for this wind farm development.

#### 5.10.5 Drinking Water

Objectors to the scheme claim that private water sources in the area have not been tested by the applicant and that run-off from the wind farm site may cause contamination – the site being generally uphill of the water sources. Having regard to the nature of the various elements of the development, the distance from houses, and the bedrock aquifer in the area, I would consider that there will be no impact on wells in the area. The proposed wind farm development will not have any impact on private wells outside of the site boundary. Observations made during the course of the appeal refer to a spring source which is used for drinking water.

The spring referred to is just outside the site boundary in the townland of Rathgaskig. The 1<sup>st</sup> party response to the grounds of appeal included a report into this water source, and states that the applicant company has engaged with the family who uses a spring located downhill of T5 & T6. These are houses H14 & H18 – both of which draw water from this spring. Only T5 and part of the new access road are located within the zone of contribution of this spring. T5 is 450m away from the spring. There has already been substantial felling of trees on higher ground above these houses. The area has been subjected to heavy machinery for digging drains, creating access tracks and thinning and felling of trees. The applicant has stated that the spring will be tested before commencement of construction and at monthly intervals during construction. This is entirely reasonable. The excavation of the trench for the grid connection may encounter water pipes within the road, which, in line with other services, will have to be by-passed. It is stated that the cable route will be beneath any other pipes within the road.

#### 5.10.6 Geological Heritage

Geological heritage sites are indicated on Figure 8.6 of Volume 4 of the revised EIS. The haul route to the site passes through the townland of Gortnabinna – where it forms the northwestern boundary of the wind farm site. There is a County Geological Site, with fossilised burrows in the fluvial old red sandstone facies, indicated in this area. The rock cutting on the road is illustrated at Photo 3 of Appendix F of the revised EIS. This site is listed as a Site of Geological Interest in Table 3.8 of the Cork County Development Plan. Works are proposed in the vicinity of this site to facilitate the transporting of outsize loads to the wind farm site. However, the works are to be carried out on a roadside bank on the opposite side of the road to the rock outcrop. There will be no impact on this geological site arising from the proposed development. A second site of geological interest is identified along the grid connection within the townland of Carraignadoura – Ballingearry Esker. The existing road passes through the esker, and so the excavation of a trench within this road will not cause any damage to the esker. I note that this esker, whilst identified by the Geological Survey of Ireland as being of importance, is not included in Table 3.8 of the Cork County Development Plan.

### 5.11 **Hydrology and Water Quality**

Section 8 of the original EIS dealt with the issues of hydrology and water quality. Chapter 9 and Appendix G of the revised EIS further deal with these issues.

#### 5.11.1 Surface Water

The site measures some 32.8ha overall. The stream network draining the wind farm site is to the upper Lee River catchment (indicated at Figure 9.1

of the revised EIS) – part of the South Western River Basin District (Hydrometric Area HA 19). The grid connection route drains to the same catchment where it is within Co. Cork. The Co. Kerry portion drains to the Roughty River catchment (Hydrometric Area HA 21). No new significant watercourse crossings are proposed and no in-stream works are planned within the wind farm site. A separation distance of 210m is indicated between major works areas and significant watercourses which drain the wind farm site. No new access track will be within 50m of an existing stream. Settlement/stilling ponds will be used during construction. Shallow swales (0.15m deep) will be constructed alongside access tracks to retard the speed of run-off and to encourage settlement of silt. Silt traps will be installed upstream of existing outfall points. Silt fencing will be installed at strategic locations downstream of new track construction, and some new interceptor drains will be excavated. All track construction and widening will use clean uncrushable stone with a minimum of fines. Diesel and fuel oils stored on site will be in fully-bunded tanks. Refuelling/storage areas will be provided with hydrocarbon interceptor and spillage tank. A permanent hydrocarbon interceptor will be provided at the sub-station site for surface water discharge. A concrete wash-down area will be provided within the temporary site compound for chutes of ‘Readymix’ trucks – discharging to a settlement lagoon. A full list of the mitigation measures proposed during construction is outlined at section 9.7.2 of the revised EIS. Monitoring of watercourses during the construction phase will be carried out – including the installation of turbidity meters upstream and downstream of the wind farm site. Drainage of the site has been indicated at Figure 9.5 of the revised EIS [I note that the legend accompanying this Figure indicates a green circle with black dot in the centre and does not indicate what the symbol represents. From perusal of the revised EIS, I conclude that this symbol represents stilling ponds]. Existing forestry in the area has resulted in the creation of a significant amount of man-made drains – both flanking access tracks and running in parallel lines through the plantation. Many of the drains on site were running with water on the dates of site inspection in 2013 and 2016, or else water was lodging within them. Inland Fisheries Ireland made comment to the Council during consideration of the application, and was satisfied that permission could be granted subject to attachment of conditions in relation to drainage to watercourses, control of discharges, and construction mitigation in relation to structures within or adjoining watercourses. Where stream crossings are required along the grid connection, the revised EIS indicates alternative methods for laying cables within bridge structures, boring beneath the stream bed or laying a trench through the stream bed whilst the stream itself is diverted or over-pumped. Drawings for siltation control are included at Appendices G3-G6 of the revised EIS. If such measures are carried out, then the proposed project will not result in any significant siltation of watercourses either during construction or at decommissioning stage. The Cleanrath wind farm ultimately drains to the Lee River, but the

majority of turbines for that development are located within the Toon River catchment. The majority of site drainage for the Derragh Wind farm is to the Aghnakinneirth (Eachros) River. The response of the 1<sup>st</sup> party, received by the Board on 10<sup>th</sup> February 2016, indicates that only a small portion of the wind farm site drains to the Toon River catchment. Swales and stilling ponds to be installed during the construction phase will be maintained during the operational phase of the development, and will serve to throttle the surface water run-off from areas of the site cleared of vegetation. Over time, areas cleared of vegetation will re-vegetate – particularly as there are to be no permanent employees (and hence no regular vehicle movements) over most of the site. Cumulative impacts on surface water drainage will not be of significance – notwithstanding the contention of the DoAH&G to the contrary. The contention of the DoAH&G that existing and other development in the catchment could result in an increased hydrological peak discharge to the Toon River is not backed up by any evidence, figures or examples. There is no reason why the opposite should not be the case, where marginal farmland within the catchment is being abandoned, where coniferous plantations are resulting in less run-off or where existing field and road drains are not being maintained. In any event, no evidence is submitted one way or the other.

#### 5.11.2 Water Framework Directive

The proposed wind farm development lies within three river waterbodies. All are of ‘Good’ status, although risks have been identified as acidification as a result of coniferous afforestation to the Aghnakinneirth (Eachros) River. Waterbodies traversed by the grid connection have been assessed as ‘Good’ status, although risk has been identified as pollution from a WWTP in the Bunsheelin River catchment. The proposed development will not have any impact on the ‘Good’ status of water bodies in the area of the proposed development/project under the Water Framework Directive.

#### 5.11.3 Grid Connection Route

The grid connection was subject to walkover survey on 15<sup>th</sup> August 2015. Section 9.3.6 of the revised EIS identifies 7 no. stream crossings within Co. Cork, and a further 4 no. crossings in Co. Kerry (works included as part of the planning permission for Coomataggart sub-station – now under construction). In some instances the cable will be laid within the bridge structure and in others will be bored beneath the watercourse. Where this is not possible, a trench will be excavated across the stream bed. The grid connection would not have any significant cumulative impacts with permitted wind farms and Coomataggart sub-station within the Roughty River catchment in Co. Kerry.

#### 5.11.4 Flood Risk

There are no flood risk areas within the site boundary. Slopes at Derragh would render such impossible. Appendix G2a of the original EIS and

Appendix G1 of the revised EIS indicate flooding areas around Ballingearry village to the south – caused by the River Lee breaking its banks. Table 9.6 of the revised EIS indicates that there will be a marginal increase in run-off within the three water bodies which drain the wind farm site. In the overall context, the estimated increase in run-off to the Lee River is 0.062m<sup>3</sup>/s, amounting to a 0.25% increase in the run-off from the impervious areas as a result of the proposed development. This will be spread over a number of tributaries – principally the Toon River and the Aghnakinneirth (Eachros River). This increase in run-off will reduce over time as vegetation is re-established. The estimated increase will not give rise to any significant impacts. There will be no increased run-off arising from excavation of short sections of trench for the grid connection. The proposed development will not result in any downstream flooding of lands.

## **5.12 Air & Climate**

5.12.1 Section 11 of the original EIS and section 5 of the revised EIS deal with the issues of air quality and climate change. The proposed development may result in some short-term impacts relating to dust during the construction period – depending on how dry the season is. The fact that the site is covered by coniferous trees (being felled in rotation) will help to limit the spread of any fugitive dust arising from excavation of the borrow pit, construction/widening of tracks, excavation of bases for turbines and hard stands for cranes, and the construction of the electrical compound. Sporadic wetting of access tracks during extended dry periods is proposed by way of mitigation of dust nuisance. The closest house (H13) is 435m from the borrow pit, whilst house (H1) is located 535m from the nearest turbine base (T1). These separation distances will ensure that there will be no nuisance caused by fugitive dust. Trench excavation for the grid connection would be of limited duration and would not result in any significant dust nuisance for residents of houses flanking the route. An outline dust plan is included within the CEMP.

5.12.2 The proposed development will help reduce the dependence of the country on fossil fuels for the generation of electricity, and consequently will increase the amount of electricity generated from renewable sources. This will, in turn, reduce the amount of greenhouse gases emitted to the atmosphere. Ireland is committed to increasing the amount of electricity generated from renewable sources; of which wind power will provide the major component. The development will have an overall beneficial impact on climate within the country.

## **5.13 Environmental Impact Assessment**

5.13.1 The application to Cork County Council was accompanied by an Environmental Impact Statement (EIS) which included a number of

appendices. The additional information submission made to Cork County Council on 25<sup>th</sup> April 2013 made changes to certain of the information contained within the original EIS – based on further studies and survey. The additional information submission to the Board of 21<sup>st</sup> September included a revised EIS, which included consideration of the proposal to construct an underground 38kV grid connection to Coomataggart sub-station in Co. Kerry. The revised EIS was accompanied by a series of appendices – principal amongst which was Appendix A – an outline Construction and Environmental Management Plan (CEMP). EIA scoping was carried out in 2011-2012, and again in 2015, following receipt of the Board's request for submission of a revised EIS. As pointed out by the appellant, the Board (and not the applicant) carries out EIA of the proposed wind farm and grid connection. This EIA is based on the information submitted by the applicant, the local authorities, prescribed bodies, appellant, and observers, and is informed by local, regional and national guidance.

#### 5.13.2 Compliance with Requirements of Articles 94 & 111 of the Planning and Development Regulations 2001 (as amended)

The proposed project, in overall terms, is in compliance with Articles 94 and 111 of the Planning and Development Regulations, 2001, as amended. To this extent I would observe that-

- The EIS and revised EIS contain the information specified in paragraph 1 of Schedule 6 of the Regulations. The EIS and revised EIS-
  - Describe the proposal, including the site and the development's design and size; and the proposed connection to the national grid;
  - Describe the measures envisaged to avoid, reduce and, if possible, to remedy significant adverse effects;
  - Provide the data necessary to identify and assess the main effects the project is likely to have on the environment;
  - Give an outline of the main alternatives studied both in relation to the location of the wind farm itself and the grid connection, and the main reasons for the choice of site/development and grid connection, taking into account the effects on the environment.
  
- The EIS and revised EIS contain the relevant information specified in paragraph 2 of Schedule 6 of the Regulations. This includes-
  - A description of the physical characteristics of the project (wind farm and grid connection) and its land use requirements;
  - The main characteristics of the wind energy process to be pursued;
  - The emissions arising;
  - A description of the aspects of the environment likely to be significantly affected by the project;

- A description of the likely significant effects on the environment resulting from the project's existence, the project's use of natural resources, the emission of pollutants and creation of nuisances, and a description of the forecasting methods used;
  - An indication of any difficulties encountered in compiling information.
- There is an adequate summary of the EIS and revised EIS in non-technical language.
  - Section 3.5 of the EIS considered alternatives to the proposed wind farm development. Appendix C of Volume 3 indicated two alternative layouts in map form. Alternative locations (in the ownership of Coillte Enterprise) and alternative layout and designs were examined. Wind speed, grid connection, County Development Plan designations, environmental designations, accessibility, proximity of houses, visual impact, and land ownership were amongst the major issues which led to the selection of the current site. Turbine locations within the site make maximum use of existing forestry roads. Turbine locations were altered as the development proposal advanced to reflect telecommunications requirements, difficult terrain, foundation suitability, need to reduce wake effects, and separation from houses. The exact turbine type has not been specified in the application – although a selection of possible turbine types has been indicated. Maximum hub heights and rotor diameter have been specified – as has the number of blades, at three. Technology is rapidly changing in turbine design. By the time the wind farm comes to be built, technology and suppliers to the Irish market may have changed. Suppliers have different requirements in relation to financing and ordering of units. I would see no difficulty with the arrangement as proposed by the applicant, whereby exact model types are not specified.
  - Section 1.4.4 of the revised EIS deals with the issue of alternative routes for the grid connection to the sub-station at Coomataggart. Consideration was given to underground versus over-ground options. It was acknowledged that stakeholders generally prefer underground cables, and it was decided to favour this option, notwithstanding that it was considerably more expensive than over-grounding. Eirgrid and ESB Networks favour the location of underground cables in public roads. The applicant consulted with Cork and Kerry County Councils, and the principal considerations were identified as length of route, hydrology, traversing nature designated sites, and existence of farm tracks. Four potential routes were identified and examined (Options A-D). Option C was eventually selected – it would appear largely on the basis of the fraction which was located within public roads – thereby

limiting the extent of 3<sup>rd</sup> party agreement to cross private lands. The desire to avoid excavation in peatland (particularly Sillahertane Bog NHA) was another deciding factor. Whilst the route chosen is through Sillahertane Bog NHA, the cable would be buried within existing tracks which are constructed on made ground.

### 5.13.3 Identification of the Likely Significant Direct and Indirect Effects of the Project on the Environment

The submitted EIS and revised EIS, and the assessment preceding this part of the Inspector's Report, focus on the significant direct and indirect effects arising from the proposed wind farm project. I propose here solely to identify the main likely effects under a range of headings as follows:

#### Human Beings

- Employment.
- Impact on tourism.
- Shadow flicker.
- Noise.
- Water supply.
- Impact from road closures or diversions, for grid connection.

#### Flora & Fauna

- Effects on Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas.
- Species impact.
- Avifauna disturbance.

#### Soils & Geology

- Peat stability.
- Rock extraction.

#### Water

- Undermining water quality in surrounding streams during construction.
- Effecting important habitats downstream of the site.

#### Air, Climate, Noise and Vibration

- Climate change.
- Noise disturbance to residents.

#### Landscape and Visual Impact

- Scale, height and extent of visibility.
- Impact on landscape character.
- Impact on important Scenic Routes and areas of High Landscape Value.

#### Cultural Heritage



- Effects on archaeology.
- Effects on built heritage items along the grid connection.

*Material Assets*

- Impact on local road network – particularly delivery of outsize loads and excavation for laying 38kV grid connection.

*Interactions*

- Humans and noise, shadow flicker, visual impact, and tourism.
- Flora & fauna and water quality.
- Landscape and the natural environment.

5.13.4 Description of the Likely Effects Identified

The likely effects arising from the project proceeding are anticipated to include the following-

*Human Beings*

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

*Tourism:* Visual and landscape impact affecting the natural tourism product.

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

*Flora & Fauna*

*Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas:* Impacts on the surface water system at the construction stage due to drainage and soil/peat disturbance.

*Avifauna:* Impacts on birds which use or traverse the wind farm site.

*Water*

*Undermining water quality:* Changes in site run-off volumes, impacting on water chemistry for fish, Freshwater pearl mussel, and siltation in streams.

*Affecting important habitats:* Impact on The Gearagh cSAC.

*Air, Climate, Noise & Vibration*

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

*Noise disturbance:* Mechanical and aerodynamic noise impacts on nearby residents.

### Landscape and Visual Impact

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

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

*Impact on Important Views:* Incongruity with views into, across and beyond the wind farm site – in relation to listed Scenic Views S25, S26 & S27, in particular.

### Cultural Heritage

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

### Material Assets

*Road Network:* Transportation of materials and consequences for the structure and carrying capacity of existing local roads, and disturbance to residents necessitated by road closures during construction of grid connection.

### Interactions

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

## 5.13.5 Assessment of the Likely Significant Effects Identified, Having Regard to the Mitigation Measures Proposed

The detailed assessment which precedes 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 if the proposed development/project proceeds. What follows is a short list of some of the most important mitigation measures proposed to be employed which are considered necessary to address the range of potential significant impacts arising from the proposed development.

### Human Beings

*Tourism:* The development will not result in closure of any forestry tracks open to the public – except during the short period of construction.

*Shadow flicker:* Separation distance from sensitive receptors, turbine controls during sensitive periods – individual turbines being shut down at certain times.

### Flora & Fauna

*Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas:* Constraints-led approach to layout of turbines, detailed surface water drainage proposals, and choice of grid connection along existing made ground within Sillahertane Bog NHA.

*Impacts on on-site habitats:* Avoidance of natural watercourses, maximum use of existing forestry roads.

*Species impact:* Protection of watercourses on surrounding lands through drainage design and application of buffer zones, and clearance of Kerry slug from construction areas prior to commencement of development.

*Avifauna disturbance:* Monitoring of the effects of the operating wind farm, undergrounding of cables, separation distance between turbines to minimise barrier effect to movement.

*Freshwater pearl mussel:* Instigation of measures to control and treat surface water run-off during the construction phase to prevent any significant siltation of watercourses.

#### Soils & Geology

*Peat impacts:* Placement of turbines in areas of shallow or no peat, deposition of excess extracted peat within the borrow pit.

*Borrow Pit:* Use of stone on site won from the borrow pit – to reduce the requirement to import materials to the site

#### Water

*Water quality:* Minimising run-off volumes, drainage design and control, avoidance of impacts by application of buffer zones, no on-site cement batching.

*Natural water system:* Off-site disposal of human effluent.

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

#### Air, Climate, Noise and Vibration

*Climate Change:* Application of project and consequent carbon savings.

*Noise disturbance:* Separation from sensitive receptors, adherence to standards, post-commissioning noise surveys.

#### Landscape and Visual Impact

*Landscape character and important views:* Separation distance from the public realm.

*Cumulative impact:* Separation from other similar permitted developments.

*Cultural Heritage*

*Archaeology:* Archaeological monitoring of soil disturbance both within the wind farm and along the grid connection.

*Material Assets*

*Road network:* Heavy materials delivery and plant transportation from identified import ports, with areas requiring minor changes identified. Traffic management plan to be instigated during construction of the grid connection along public roads.

*New Access:* New access to site to separate construction traffic from forestry and amenity traffic during construction phase.

*Aviation:* Warning lights affixed to turbines.

5.13.6 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 the main assessment and it is not proposed to repeat them. Suffice to indicate, that the principal areas of concern focus on landscape & visual impacts, impacts on humans (noise/shadow flicker), hydrology and ecology.

**5.14 Appropriate Assessment**

5.14.1 The original planning application to Cork County Council was accompanied by an EIS – Appendix E-4 of which comprised an Appropriate Assessment Screening Report (dated 16<sup>th</sup> May 2012), as required by Article 6(3) of the Habitats Directive. An updated Screening Report (dated 22<sup>nd</sup> April 2013) was submitted as additional information on 25<sup>th</sup> April 2013 – Appendix G.

5.14.2 The submission from the applicant to the Board of 21<sup>st</sup> September 2015, included a Stage One Screening Report and a Stage Two Appropriate Assessment Report (Natura Impact Statement) for the proposed wind farm in conjunction with the grid connection. It should be noted that the applicant is not seeking consent from the Board for the grid connection – rather that the Board consider the grid connection in association with the wind farm for the purposes of Appropriate Assessment (AA) of the overall project. [I note that Figures 1.1 & 1.2 of the NIS document incorrectly indicate the line of the grid connection route for a portion of the line within Co. Kerry. This is clearly a mapping error – as later Figures and text

within the NIS allude to the correct line – which accords with the line indicated within the revised EIS. The applicant carried out some peat probing over a possible alternative line across peatland in Co. Kerry, but ultimately favoured a line that followed a farm track (the old Kilgarvan Road) across the peatland, and that joined up with the route of the access road to the Coomataggart sub-station – now under construction].

5.14.3 In the preparation of the document, the applicant consulted with NPWS and Inland Fisheries Ireland (IFI) – and referred to previous correspondence from these organisations. Section 2.5 describes the various field assessments for habitats, mammals, bats, Kerry slug, avifauna, and aquatic ecology (including Freshwater pearl mussel), carried out, which informed the preparation of the NIS – between 2011 and 2015. The existing ecological environment is described in section 3 of the NIS – placing the wind farm site and grid connection in context of waterbody catchments – the Lee River and the Roughty River (for that portion of the grid connection within Co. Kerry). A total of 24 no. aquatic ecological sites were surveyed in July 2015 – the last four of which were within Co. Kerry. Included were seven Freshwater pearl mussel Stage 1 surveys (carried out under Licence). Four rivers were evaluated – Toon, Bunsheelin and Aghnakinneirth (Eachros) in Co. Cork, and Roughty in Co. Kerry. The County Cork rivers and streams drain to the River Lee (Hydrometric Area HA 19) whilst the County Kerry streams drain to Dunmanus, Bantry and Kenmare Bay (Hydrometric Area HA 21).

5.14.4 A long list of European sites and Natural Heritage Areas, (within 15km of the project), was identified – illustrated at Figure 3.1. There are no European sites located within the appeal site boundary or immediately adjacent to it. The closest sites identified are-

- Mullaghanish to Musheramore Mountains SPA (Site code 004162) – some 7.25km to the northeast of the wind farm site and 9.0km from the grid connection.
- The Gearagh cSAC (Site code 000108) – some 11.0km to the east of the wind farm site and 13.0km from the grid connection.
- The Gearagh SPA (Site code 004109) – some 11.0km to the east of the wind farm site and 13.0km from the grid connection.
- St. Gobnet's Wood SAC (Site code 000106) – some 6.0km to the northeast of the wind farm site and 7.5km from the grid connection.
- Mullaghanish Bog cSAC (Site code 001890) – some 10.7km to the north-northeast of the wind farm site and 12.4km from the grid connection.
- Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment cSAC (Site code 000365) – some 11.1km to the north-north west of the wind farm site and 8.3km from the grid connection.

- Derryclogher (Knockboy) Bog cSAC (Site code 001873) – some 12.8km southwest of the wind farm and 7.3km from the grid connection.
- Kilgarvan Ice House cSAC (Site code 000364) – some 12.7km west of the wind farm site and 7.3km from the grid connection.
- Old Domestic Building, Curraghglass Wood cSAC (Site code 002041) – some 14.0km northwest of the wind farm site and 9.7km from the grid connection.
- Bandon River cSAC (Site code 002171) – some 12.5km south of the wind farm site and 13.5km from the grid connection.
- Glanlough Woods cSAC (Site code 002315) some 14.5km west of the wind farm site and 8.4km from the grid connection.
- Killarney National Park SPA (Site code 004038) – some 20.3km northwest of the wind farm site and 15.2km from the grid connection.

Because of their location either within different waterbody catchments, or the conservation interests of the sites concerned, all but the first three on this list were deemed not to be within impact range of the proposed project. This conclusion is reasonable.

5.14.5 The qualifying interests of the three identified sites are as follows-

Mullaghanish to Musheramore Mountains SPA qualifying species are-

- Hen harrier (*Circus Cyaneus*).

The site has an area of 5,011ha, and also supports a breeding population of Merlin. The site synopsis indicates that the main threat to Hen harrier is afforestation.

The Gearagh cSAC qualifying interests' are-

- Otter (*Lutra lutra*).
- Watercourses of plain to montane levels with the *Ranunculion fluitantis* and *Calitricho-Batrachion* vegetation.
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles.
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicon albae*).

This site covers an area of 558ha. Part of the site was destroyed by tree-felling and flooding in the mid-1950's for the construction of the Lee River Hydroelectric Scheme. The wind farm site and grid connection are hydrologically linked with the cSAC via the Aghnakinneirth (Eachros) River and the Bunsheelin River which flow into Lough Allua (part of the Lee River) and via the Toon River (which joins the Lee within the cSAC). The wind farm site is 11.0km from the cSAC as the crow flies, and 14.5km via the Toon River (and further again via Lough Allua and the main channel of the Lee River [notwithstanding that the revised EIS gives the distance as only 10.9km]).

The Gearagh SPA qualifying species are-

- Wigeon (*Anas Penelope*).
- Teal (*Anas crecca*).
- Mallard (*Anas platyrhynchos*).
- Coot (*Fulica atra*).
- Wetland & Waterbirds.

The site covers an area of 323ha – formed by the flooding of the Lee River for the construction of the Lee River Hydroelectric Scheme. The site supports an important population of wintering waterfowl – including some waders. There are important populations of Mute swan (*Cygnus olor*), Wigeon (*Anas penelope*), Northern shoveler (*Anas clypeata*), Coot (*Fulica atra*) and European golden plover (*Pluvialis apricaria*). The main threat to birds is indicated as illegal shooting.

5.14.6 A derelict building on the wind farm site has been identified as a potential bat roost for Common pipistrelle. Soprano pipistrelle and one Leisler's bat were recorded in low numbers foraging over the site. All bat species are listed under Annex IV of the Habitats Directive. Of these species, only Leisler's is identified as being at high risk from collision with the blades of wind turbines. Having regard to the single recording, the likelihood of significant effect on this species is low. One bridge along the grid connection route (Bunsheelin Bridge) offered a potential roosting habitat for Daubenton's bat. It would be examined, under licence, for any bats present prior to commencement of work. It is stated that the grid connection at this bridge will be beneath the river, and any disturbance would be by way of vibration. The mitigation measures put forward are reasonable – regard being had to the fact that this bridge is already used by traffic.

5.14.7 A number of surveys for avifauna were carried out over the wind farm site and at nearby Lough Allua – for raptors, wintering birds and breeding birds. Surveys were carried out in 2011, 2012, 2013 and 2015. White-tailed sea eagle was not recorded on the wind farm site, but is known to roost at Sillahertane in Co. Kerry. Other raptor species (apart from Hen harrier) were recorded over the wind farm site infrequently – Peregrine falcon and Kestrel. Whooper swan was observed at Lough Allua. No Whooper swan or other waterfowl species were observed overflying the wind farm site. The appeal site is unlikely to be traversed by birds from The Gearagh SPA – given the separation distance of 11.0km and the elevation of the site (up to 340m OD) in the foothills of the Derrynasaggart Mountains. Waterfowl are more likely to follow the course of the Lee River, as borne out by surveys in winter, with birds commuting between Gouganebarra, Lough Allua and the Lee Reservoir. Hen harrier was not observed foraging on the site during the breeding season surveys (March – September 2012). Four sightings of Hen harrier were made during winter surveys (October 2012 – January 2013) on or near the site (set

down at Table 3-6 of the NIS). A roost site was identified outside the wind farm site – some 500m from the closest turbine (T6). Red grouse were not recorded at the wind farm site – and there was just one observation near the Coomataggart sub-station in 2015 surveys. Merlin is not a Feature of Interest of the Mullaghanish to Musheramore SPA – although mention it is stated to support a breeding population. The species is listed in Annex I of the Birds Directive. The species was not recorded during VP surveys, and notwithstanding that the concern of the DoAH&G that the species is hard to spot, there is no evidence that the site is used by this species. The habitat which will be lost on site is widely available elsewhere within the site boundary and also within coniferous plantations within 2.0km of the wind farm site. Merlin, because of its flying habits is not regarded as being of high risk of collision with turbine blades.

5.14.8 The Kerry slug is listed in Annex II and IV of the Habitats Directive. The species is widespread across the wind farm site – trapped under Licence from the NPWS in 2013. The species utilises both conifer plantation and clear-fell areas. Approximately 7.2ha will be felled to facilitate the wind farm and access roads. The species takes advantage of clear-felled areas also. The overall loss of habitat (4.25ha) will not be significant in terms of overall similar-type habitat in the vicinity (113ha). Contact with the NPWS indicated that a Derogation Licence was not likely to be required for this species. The bog habitat on the grid connection route in Co. Kerry is not suitable for this species, due to the absence of rock outcrops.

5.14.9 Freshwater pearl mussel is present in waters downstream of the wind farm site and grid connection route in both County Cork and County Kerry – within the River Lee upstream and downstream of Lough Allua, the Toon River, and the Roughty River. The species is listed in Annex II and Annex V of the Habitats Directive. A Stage 1 survey for this species was undertaken in seven watercourses in 2015. Mitigation measures to be put in place to prevent the discharge of silted waters from the wind farm site and grid connection and to deal with and minimise the likelihood of accidental spillages of hydrocarbons, will protect watercourses in the area. If properly managed, these measures should ensure that there will be no significant effect on this species. The presence of the species within the Toon River and at Lough Allua is noteworthy – as both of these rivers flow into The Gearagh cSAC – one of the conservation interests of which is alluvial forests with Alder and Ash. The habitat requires silt within the watercourses, whilst the species is affected negatively by silt. I would note that Freshwater pearl mussel is not a qualifying interest of the cSAC, notwithstanding its presence in waters which flow into the cSAC.

5.14.10 In July 2015, an aquatic ecology survey was carried out in 24 no. watercourses within both Counties Cork and Kerry (detailed at Appendix 8 of the NIS). Only one site recorded a Q3-4 rating of moderately polluted



waters (no. 18) – the Cathair na Caithe Stream – which is crossed by the grid connection route.

5.14.11 The Stage 1 Screening Report identified effects of the proposed wind farm and grid connection on European sites, that are likely to be significant-

- Hydrological connection between the wind farm site/grid connection and The Gearagh cSAC and The Gearagh SPA, and threat from siltation and accidental spillage of hydrocarbons.
- Disturbance/displacement/collision impact of turbines on bird species from Mullaghanish to Musheramore Mountains SPA.
- Collision impact with turbines on bat species.

Cumulative impacts with neighbouring wind farms were considered not to be significant – the closest being Cleanrath (11 turbines) – and subject to Judicial Review. The separation distance of 2.25km between the closest turbines will ensure that the wind turbines will not create a barrier effect for avifauna. The Cleanrath wind farm site predominantly drains to the Toon River, whilst only a small section of the Derragh wind farm drains to this catchment – ultimately both drain to The Gearagh cSAC and the Gearagh SPA. The trench for the grid connection draining to the Roughty River catchment is not of such an order as to cause cumulative impacts with other works in this area – such as the construction of the Coomatagart sub-station.

5.14.12 A Stage 2 Appropriate Assessment Report (NIS) was submitted by the applicant on 21<sup>st</sup> September 2015. Three European sites were identified – The Gearagh cSAC, The Gearagh SPA and the Mullaghanish to Musheramore SPA – as being possibly affected by the project. Potential impacts included-

- Reduction in water quality in The Gearagh resulting in loss of food or prey species for birds and otter, arising from siltation or pollution of watercourses.
- Loss of foraging habitat for Hen harrier.

The wind farm site has already been subjected to extensive drainage for forestry plantation. Heavy machinery has traversed this site to drain it, plant trees, construct roads, thin and fell trees. The contention of the DoAH&G that the applicant has not considered the impact of increased run-off into the catchment of The Gearagh cSAC, and the impact that this would have in terms of deepening channels within the cSAC, to the detriment of alluvial deposition over the site is noted. I have elsewhere within this Report commented on the small increase in run-off which the development of this site would generate – mostly to the Aghnakinneirth (Eachros) River, with only small amounts to the Toon River, which was of concern to the DoAH&G. The Site Synopsis for The Gearagh cSAC (produces by the DoAH&G) indicates that the Alluvial forest is an Annex I Priority habitat. Part of the alluvial woodland was removed to create the

Lee River Hydroelectric Scheme in the 1950s. It is noted that The Gearagh contains “rather dry alluvium”. Whilst some activities within the cSAC are described; such as grazing by cattle (and coppicing in the past), no indication is given of any threats to the status of the cSAC. There is certainly no mention made of any threat to the cSAC from deepening of river channels due to increased run-off from sites within the catchment. It is not reasonable of the DoAH&G to maintain that the applicant should have considered the threat of increased run-off from the wind farm site, where it is nowhere mentioned in either the Site Synopsis or the generic Conservation Objectives for this site – produced by the DoAH&G. I would be satisfied that the proposed wind farm will not result in any significant increase in run-off into The Gearagh cSAC, and particularly into the Toon River, and so would not have any likely significant impact on the Annex I Priority habitat or affect its integrity.

5.14.13 Mitigation measures proposed to avoid or reduce the adverse effects on the integrity of European sites are listed at Table 5.2 of the NIS, and include the following-

- Buffer zones, silt traps and stilling ponds will be put in place prior to construction at the wind farm site.
- Excavated soil at the wind farm site will be deposited in the borrow pit.
- Wheel-wash facility will be located at the wind farm site entrance.
- Roadside swales will be provided along access roads within the wind farm site with appropriate check dams to act as attenuation features – to ultimately discharge diffusely over land.
- Tracks will be surfaced with clean, graded stone.
- Any standing water to be pumped will be discharged to temporary settlement basins.
- Cable trenches will be excavated in short runs, and during dry periods, where possible.
- Hydrocarbons on site will be stored in bunded tanks.
- Foul effluent is to be removed off the site.
- Silt fencing would be erected at stream crossings along the grid connection.
- Any instream works required would be carried out in the period April to September.
- Increased surface water flow from the wind farm site will be checked using V-notch weirs on drains.
- Removal of vegetation will be undertaken outside of the bird-breeding season (March-August).
- The drainage system on site will be maintained during the operational and decommissioning phases of this development.
- Any tree-felling on site will be subject to licencing.
- Brash mats will be used on site to minimise compaction of soil and run-off from machinery tracks.

- A water quality monitoring programme will be instituted during the construction phase of the wind farm – including turbidity meters upstream and downstream of construction works.
- Implementation of all measures outlined in the Construction Environment Management Plan (CEMP).

5.14.14 I consider it reasonable to conclude, on the basis of the information on the file, which I consider adequate in order to carry out a Stage 2 Appropriate Assessment, that the proposed development/project, individually or in combination with other plans or projects would not adversely affect the integrity of European sites 000108, 004109 and 004162, or any other European site, in view of the Conservation Objectives of those sites.

## 5.15 Other Issues

### 5.15.1 Site Ownership

Letters of consent to the making of the application from two landowners and from Coillte Enterprise were included with the original application. The 3<sup>rd</sup> party appellant claims that a number of individuals have turbary rights over part of this site/all of this site. No maps from the Land Registry have been submitted by the appellant/observers. The applicant states that lands affected by turbary rights are outside of the site as outlined. A matter of dispute between private individuals over property rights is not a relevant planning consideration. Section 34(13) of the Planning and Development Act 2000, states- '*A person shall not be entitled solely by reason of a permission under this section to carry out any development*'. I would be satisfied that the applicant company has sufficient legal interest in the site to make the planning application. I note that consent is not being sought for the grid connection which traverses private land either side of the Cork/Kerry boundary.

### 5.15.2 Employment

The construction of the proposed development will provide an unspecified no. of jobs – although 15 no. employee cars are estimated in the traffic section of the EIS. The construction period will last 8-10 months. The wind farm will be monitored remotely. There will be a part-time caretaker job created at the wind farm.

### 5.15.3 Aircraft Safety

Chapter 15 of the revised EIS deals with the issue of aviation. The nearest large airport is at Farranfore, Co. Kerry – some 36km to the northwest of the site. The application was referred by Cork County Council to the Irish Aviation Authority. There does not appear to be any report from the IAA on the file. The EIS indicates at section 10 that the IAA was consulted and had no objection, provided the development

complied with requirements for aeronautical lighting. A standard condition to reflect this requirement should be attached to any grant of planning permission issuing from the Board, in the interests of the safe navigation of aircraft. It has been pointed out by one of the observers that red lights on turbines distract from the rural feel of an area at night-time. Whilst this may be true, the requirements of the safe navigation of aircraft would override such considerations.

#### 5.15.4 Waste Management

Section 3.2.7 of the EIS deals with this issue. A Waste Management Programme will be implemented by the contractor(s). All waste cooling and lubricating oils will be removed off-site for disposal. All mechanical and electrical components will be removed upon decommissioning. Spoil from the excavation of the grid connection trench would be removed for disposal at a registered waste-handling facility. A condition should be attached to any grant of planning permission relating to generation of a construction waste management plan (as part of a detailed environmental health and safety management plan). The issue is dealt with in the Construction & Environmental Management Plan (CEMP) submitted on 21<sup>st</sup> September 2015 – Appendix A of the revised EIS.

#### 5.15.5 Telecommunications

Section 10 of the EIS deals with the issue of telecommunications. This information was supplemented by Chapter 15 of the revised EIS. The applicant company contacted a number of service providers when drawing up proposals for the wind farm. Service providers were generally satisfied with the layout – one provider requiring T5 to be relocated by 70m, which request was acceded to. There are no communications structures either within or immediately adjoining the site. Section 4.2.4 of the revised EIS lists the communications providers contacted by the applicant in 2012 and again in 2015. The applicant has been in contact with 2rn (Formerly RTÉ Transmission Network Ltd.) and refers in the revised EIS (Section 3.6.4) to a protocol agreement signed with 2rn on 7<sup>th</sup> September 2015, relating to impact on telecommunication signals by receivers (television and radio). Other communications providers submitted comments in relation to potential impacts on their networks in the area. Condition 15 of the Notification of decision to grant planning permission related to protection of radio/television/telecommunications signals. As telecommunications networks are constantly evolving, and there may be alterations to networks before wind turbines are erected on foot of a 10-year planning permission, it would be appropriate to attach such a similarly-worded condition to any grant of planning permission issued by the Board.

#### 5.15.6 Financial Contribution/Bonds

There is no financial contribution condition attached to this planning permission. The Cork County Development Contribution Scheme – dating

from 2004 (with rates regularly updated), does not provide for payment of a development contribution for wind farms – not even for buildings within such wind farm developments. The Scheme provides for Special Development Contributions for wind farms, where deemed necessary by the Council. It would appear that in this instance the Council did not deem it necessary to attach such a condition. A condition requiring payment of a general development contribution payment should not be attached to any grant of permission which might issue from the Board. I would, however, note that in granting planning permission for another wind farm in Co. Cork in 2016 (ref. PL 04.245196), the Board did attach a condition (no. 24) requiring payment of a Development contribution under Section 48. The Notification of Decision to grant planning permission issued by Cork County Council required payment of bonds for reinstatement of roads (no. 27) and for reinstatement of the site (no. 28). Similarly-worded bond conditions should be attached to any grant of planning permission issuing from the Board.

#### 5.15.7 Decommissioning

Section 3.4 of the EIS refers briefly to decommissioning. Condition 3 of the Notification of decision to grant planning permission limited the life of the development to 25 years from the date of commissioning of the first wind turbine on the site: this would appear reasonable. This will allow the planning authority to review the operation of the wind farm in the light of conditions then prevailing. Turbines will be removed, with tracks and foundations covered over and the areas allowed to revegetate. The sub-station building will remain in place (in the ownership of ESB networks). The EIS refers to the possible replacement of machines after 15 years – depending on technology advances. A Site Reinstatement Plan was submitted as additional information on 25<sup>th</sup> April 2013 – Appendix B of the Construction and Environmental Management Plan (itself submitted as Appendix M). Proposals put forward would seem reasonable. The revised EIS refers to decommissioning within the different chapters. I would not see that decommissioning of the wind farm would have any significant impact in terms of hydrology/hydrogeology, traffic, ecology or visual impact. Condition 16 of the Notification of decision to grant planning permission relates to decommissioning. Condition 28 relates to a bond to be paid for decommissioning. Conditions of similar wording should be attached to any grant of planning permission issuing from the Board.

#### 5.15.8 Construction Hours

Construction operations with respect to heavy goods vehicles supplying the site should be limited to between 0800 and 2000 hours Monday-Friday and 0800 and 1800 hours on Saturdays. Exceptions may need to be made for over-sized loads. The construction phase is estimated to last 8-10 months for the wind farm and would last 5 months for the grid connection.

#### 5.15.9 Duration of Planning Permission

Having regard to the scale of the project, it would be appropriate to allow for a 10-year planning permission, as sought by the applicant. Condition 2 of the Notification of decision to grant planning permission by Cork County Council referred to a ten-year permission. This is not unusual in relation to wind farm applications.

#### 5.15.10 Impact on Tourism

No evidence has been provided one way or another in relation to claims of impact/no impact on tourism. This is a rural area. Planning permission has been granted by the Board for an 11-turbine wind farm at Cleanrath, approximately 2.25km to the east-southeast (although the subject of Judicial Review, and now a revised planning application). The wind farm site does not benefit from any special tourist designation in the Development Plan. Lough Allua and the surrounding area, some 4km to the south, was designated a Scenic Landscape in the old Development Plan, but is no longer so designated. Gouganebarra, some 8km to the southwest, is a noted beauty spot. The grid connection would not have any impact on tourism. The visual impact of turbines, in terms of the beauty or rural nature of a site, in terms of tourism, is a subjective one. There is no evidence that tourists avoid areas within which turbines are located. The Slí Gaeltacht Mhúscraí walking route and the Beara-Breifne Cycle Route utilise some of the minor roads and off-road paths in the area. Turbines will be visible from selected points along these routes, but will not be unduly dominant on long-distance routes which traverse a wide variety of landscapes, and which are not designated for scenic quality alone. Visual impact has been assessed in Chapter 14 of the revised EIS – with additional photomontages presented at the end of Volume 4. The grid connection route would utilise some short sections of the same roads, and temporary closures and diversions would be required. The revised EIS states that necessary closures would be programmed carefully and in consultation with the local community. The trench work would be of limited duration and would not impact in any significant way on these tourist amenities.

#### 5.15.11 Devaluation of Property

The applicant undertook a survey of residential property. This was updated by a house survey undertaken on 3<sup>rd</sup> July 2015. There are nine occupied dwellings within 1.0km of the wind farm site. No house (other than an unoccupied house within the ownership of one of the proponents of the development) is within 500m of any wind turbine – this in the interest of reducing the potential for nuisance caused by noise or shadow flicker. There is no evidence submitted that a wind farm in an area results in a reduction in house prices. Evidence of such, submitted by objectors to the development, is anecdotal. The construction of the grid connection

would result in some disruption for occupants of houses along the route, but disruption would be of limited duration, and the road would be repaired by the developer.

#### 5.15.12 Health & Safety

Exposure to electromagnetic fields (EMF) is common – even within houses. Houses flanking the grid connection are located a minimum of 12m from the road. No evidence has been submitted by applicants to indicate that 38kV cables, buried 1.0m below the road, would have a deleterious impact on human health. The magnetic field associated with underground cables decreases rapidly with distance, as the ground absorbs the field. The grid connection would be laid in accordance with the international guidelines for ELF-EMF of the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The wind farm will be constructed, operated and decommissioned in accordance with existing safety, health and welfare legislation and standards. The wind farm will be remotely monitored, and routine maintenance visits will be undertaken. The sub-station will be surrounded by 2.4m high palisade fencing, and turbine access doors will be locked.

#### 5.15.13 Wind Farm Contribution to the Economy

The development will result in the creation of 15-20 jobs during the construction phase, with benefits to suppliers of local services and materials. Rates of €110,000-130,000 will be paid annually to the Local Authority.

#### 5.15.14 Impact on Dog Kennel Business

If properly managed, the impact of the grid connection should not be significant in terms of management and operation of any business along the route. There is no evidence submitted by objectors that the noise involved in excavation of a trench (for a limited duration) will have any impact on a dog breeding and kennel business. The response of the applicant to submissions from observers indicates the location of the kennel business and the 35m separation distance between road and dog run. This business is located on the L3402 – where one-way traffic could be maintained during construction of the grid connection.

#### 5.15.15 Project Splitting

Observers have claimed that the proposed development will facilitate development of wind turbines within the townland of Gortyrähilly to the north of the current wind farm site. The applicant has indicated that there is no involvement with any proposal – and that the EIS and NIS submitted only relate to existing developments in the area, permitted developments/projects or projects/developments under consideration for consent. This is entirely reasonable.

#### 5.15.16 Planning and Development (Amendment) Regulations 2016

I note that the Minister of State at the Department of Environment, Community and Local Government has recently laid before the Houses of the Oireachtas, the Planning and Development (Amendment) Regulations 2016, wherein Article 5 amends Part 1 (Exempted Development – General) of Schedule 2 to the Principal Regulations by inserting a limitation for Class 26 & 27 exemptions for grid connections (over-ground or underground) where the project would require Environmental Impact Assessment or Appropriate Assessment.

## 6.0 RECOMMENDATION

I recommend that permission be granted for the Reasons and Considerations set out below and subject to the attached Conditions.

### REASONS AND CONSIDERATIONS

Having regard to:

- (a) national policy with regard to the development of alternative and indigenous energy sources and the minimisation of emissions of greenhouses gases,
- (b) the provisions of the “Wind Energy Development Guidelines – Guidelines for Planning Authorities” issued by the Department of the Environment, Heritage and Local Government (2006),
- (c) the policies set out in the Regional Planning Guidelines for the South-West Region 2010-2020,
- (d) the policies of the planning authority as set out in the Cork County Development Plan 2014-2020,
- (e) the location of the wind farm site in an area which is identified in the Cork County Development Plan 2014 as an area ‘Open to Consideration’ where it is the policy of the planning authority to facilitate the development of appropriate wind energy proposals,
- (f) the character of the landscape in the area and the absence of any ecological designation on or in the immediate environs of the wind farm site,
- (g) the pattern of existing development in the area, including other wind farms,



- (h) the distance from the proposed development to dwellings or other sensitive receptors,
- (i) the range of mitigation measures set out in the documentation received, including the Environmental Impact Statement, revised Environmental Impact Statement, Natura Impact Statement, and Further Information,
- (j) the planning history of the site and its surrounds,
- (k) the submissions made in connection with the planning application and the appeal',

it is considered that, subject to compliance with the conditions set out below, the proposed wind farm development (and grid connection) would not have a significant adverse impact on the landscape or the visual or residential amenities of the area or upon its archaeological heritage, would not give rise to any significant impacts on the natural heritage of the area or affect the integrity of any European Site or any protected species. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

## **CONDITIONS**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application to Cork County Council (as amended by the further plans and particulars submitted on the 20<sup>th</sup> day of June 2012, and the 25<sup>th</sup> day of April 2013) and as submitted to the Board on the 21<sup>st</sup> day of September 2015, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development, and the development shall be carried out and completed in accordance with the agreed particulars. Specifically, the mitigation measures described in the Environmental Impact Statement, revised Environmental Impact Statement and Natura Impact Statement and other details submitted to the planning authority and to An Bord Pleanála shall be implemented in full during the construction, operation and decommissioning of the development.

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

2. This permission shall not be construed as any form of consent to a connection to the national grid.

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

3. The period during which the development hereby permitted may be carried out shall be 10 years from the date of this Order.

**Reason:** Having regard to the nature of the proposed development, the Board considered it reasonable and appropriate to specify a period of validity of the permission in excess of five years.

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

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

5.
  - (a) The wind turbines, including tower and blades, shall be finished externally in a light grey colour.
  - (b) Cables within the site shall be laid underground.
  - (c) The wind turbines shall be geared to ensure that the blades rotate in the same direction.
  - (d) No advertising material shall be placed on or otherwise be affixed to any structure on the site without a prior grant of planning permission.
  - (e) The access tracks within the site shall be surfaced in gravel or hard-core, either won from the borrow pit on site or imported to the site from nearby quarries, and shall not be hard topped with tarmacadam or concrete.

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

6.
  - (a) All mitigation measures set out in the Environmental Impact Statement, revised Environmental Impact Statement and Natura Impact Statement, submitted as part of this planning application and appeal, shall be implemented in full (except as may be required by terms of conditions herein).
  - (b) Prior to the commencement of development, the developer shall submit a schedule of mitigation measures identified in the Environmental Impact Statement, revised Environmental Impact

Statement and Natura impact statement to the planning authority for its written agreement.

**Reason:** To safeguard the amenities of the area and in the interest of orderly development.

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

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

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

- (a) 5 dB(A) above background noise levels or,
- (b) 43 dB(A)  $L_{90,10min}$

when measured externally at dwellings or other sensitive receptors.

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

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

9. (a) Shadow flicker arising from the proposed development, by itself or in combination with other existing or permitted wind energy development in the vicinity, shall not exceed 30 hours per year or 30 minutes per day at existing or permitted dwellings or other sensitive receptors.
- (b) Within 12 months of commissioning of the proposed wind farm, a report shall be prepared by a suitably qualified person in accordance with the requirements of the planning authority and submitted to the planning authority for its written approval. The

report shall indicate the level of compliance achieved with the above requirements. The developer shall outline proposed measures to address any recorded non-compliances, including control of turbine rotation if necessary. A similar report may be requested at reasonable intervals thereafter by the planning authority.

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

10. Prior to commencement of development, the developer shall agree a protocol for assessing any impact on radio or television or other telecommunication reception in the area. In the event of interference occurring, it shall be the responsibility of the developer to mitigate such interference according to a methodology to be agreed with the planning authority.

**Reason:** In the interest of residential amenity and orderly development.

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

**Reason:** To ensure the satisfactory completion of the project.

12. The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the developer shall:
  - (a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, and
  - (b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.

The assessment shall address the following issues:-

- (i) the nature and location of archaeological material on the site, and
- (ii) the impact of the proposed development on such archaeological material.

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

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

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

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

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

14. Prior to commencement of development, a transport management plan for the construction stage shall be submitted to, and agreed in writing with, the planning authority. The traffic management plan shall incorporate details of the road network to be used by construction traffic, including over-sized loads, and detailed arrangements for the protection of bridges, culverts or other structures to be traversed, as may be required.

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

15. Rock from the borrow pit shall be won only for the purposes of road/hardstand construction on the site, and shall not be sold or transported off site without a prior grant of planning permission.

**Reason:** In the interest of orderly development.

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

- (a) location of the site and materials compound including areas identified for the storage of construction waste,
- (b) location of area for construction site offices and staff facilities,
- (c) measures providing for access for construction vehicles to the site, including details of the timing and routing of construction traffic to and from the construction site and associated directional signage, to include, in particular, proposals to facilitate and manage the delivery of over-sized loads,
- (d) measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network,
- (e) alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public road or footpath during the course of site development works,
- (f) details of appropriate mitigation measures for construction-stage noise, dust and vibration, and monitoring of such levels,
- (g) containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater,
- (h) appropriate provision for re-fuelling of vehicles,
- (i) off-site disposal of construction waste and construction-stage details of how it is proposed to manage excavated soil,
- (j) means to ensure that surface water run-off is controlled in accordance with the mitigation measures proposed in the submitted documents, and
- (k) details of the intended hours of construction.

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

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

17. The developer shall review usage by birds of the wind farm site (particularly Hen harrier and Merlin) through an annual monitoring programme, which shall be submitted by the developer to, and agreed in writing with, the planning authority prior to commencement of development. This programme shall be developed following consultation with the Department of Arts, Heritage and the Gaeltacht and shall be repeated annually for a period of 3 years following completion of construction.

**Reason:** To ensure appropriate monitoring of the impact of the development on the avifauna of the area.

18. (a) Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads that may be damaged by the transport of materials to the site, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.
- (b) Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site upon cessation of the project, coupled with an agreement empowering the planning authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

**Reason:** In the interest of traffic safety and the proper planning and sustainable development of the area, and to ensure satisfactory reinstatement of the site.

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**Michael Dillon, Inspectorate.**

**26<sup>th</sup> February 2016.**