An Bord Pleanála

Inspector's Report
PL08.248768

Development	A ten year permission for the development of a Wind Farm consisting of fourteen (14) No. wind turbines with a rotor diameter of up to 120m and a blade tip height of up to 150m above ground level, two (2) No. permanent meteorological masts, two (2) No. medium voltage substations, one (1) No. high voltage substation, thirteen (13) No. new site entrances comprising of 7 No. new site entrances and 6 No. upgraded site entrances, three (3) No. borrow pits and adjacent repositories, the provision of new and upgraded internal site service roads and surface water management measures, temporary site compounds, all underground cabling and associated infrastructure necessary to construct the development.
Location	Barna (two (2) No. Turbines), Knocknageeha (one (1) No. Turbine), Reanasup (two (2) No. turbines),

	Lisheen (one (1) No. turbine), Reaboy (three (3) No. turbines) Ballynahulla (five (5) No. turbines) and Tooreengarrive, Killarney, Co. Kerry.
Planning Authority	Kerry County Council
Planning Authority Reg. Ref.	17/300
Applicant(s)	Silverbirch Renewables Limited
Type of Application	Permission
Planning Authority Decision	Refusal
Type of Appeal	First Party v. Decision
Observer(s)	Shaun & Bernie O'Rourke Donal Fitzgerald & Nick Coveney Cynthia Daly Nora Dennehy Ger Knee Denise Fenton Tadghie O'Leary Thomas Fitzpatrick & Others Susan Finn Patrick O'Donoghue (Jnr.) Patrick (Paddy) O'Donoghue Donal Vaughan Norma Guerin Mary O'Sullivan Dan Dennehy Danny Fleming

	An Taisce
	Birdwatch Ireland
	Niall Kelleher MCC
	Maura Walsh (IRD Dunhallow)
	John Ballinger (Raptor LIFE Project)
	B. McDonnell & E. McDonnell
	Towercom Ltd.
	Mike & Fiona Fleming (c/o Griffin Project Management)
	Dr. Ilse Corkery (Dunhallow Environment Working Group)
	Irish Raptor Study Group
	Fred O'Sullivan
	Mike & Fiona Fleming
Date of Site Inspection	9th December, 2017
Inspector	Robert Speer

1.0 Site Location and Description

1.1. The proposed development site is located in the rural townlands of Barna, Knocknageeha, Reanasup, Lisheen, Reaboy, Ballynahulla and Tooreengarrive, Co. Kerry, approximately 18km northeast of Killarney town, 2km north of the village of Gneevgullia and 1km southwest of Ballydesmond, on elevated lands to the west of (and sloping towards) the upper reaches of the Blackwater River Valley which runs north to south though the uplands of east Kerry and northwest Cork with the Blackwater River itself forming the county boundary between Cork and Kerry for much of its length within its upper reaches. The surrounding landscape is dominated by wet grassland, cut-over bog and commercial forestry plantations with intermittent instances and localised concentrations of individual farmsteads and one-off rural housing. There are also a number of existing (and permitted) wind energy developments in the wider area, including the Cordal and Scartaglen wind farms to north and northwest respectively, and the turbines serving Munster Joinery at Lacka Crossroads, Co. Cork. The site itself has a stated site area of 96 No. hectares, is irregularly shaped and presently comprises a combination of wet grassland, cut-over bog and commercial forestry. It effectively comprises 2 No. parcels of land located within the northern and southern extremities of the overall site area that will be connected by the local road network, with particular reference to Local Road No. L-2032. It is of further relevance to note the presence of a recently developed 110/220kV substation at Ballynahulla adjacent to the proposed northernmost turbine cluster and the Clashavoon to Tarbert 220kV overhead line which traverses the northern part of the site. The wider site area is accessed via a series of minor roads / tracks which extend from Local Road No. L-2032 to the south of its junction with the R577 Regional Road at Knocknaboul Cross.

2.0 Proposed Development

2.1. The proposed development consists of the construction of a wind farm with a total installed capacity not exceeding 50MW and involves the erection of 14 No. wind turbines with a maximum base to blade-tip height of 150m and a maximum rotor diameter of 120m (*N.B.* Table 2.1 of the EIS details the configurations of 3 No. candidate wind turbines which fall within the aforementioned parameters i.e. hub

height, rotor diameter and ground-to-blade tip height). Associated site development works will include:

- The erection of 2 No. permanent meteorological masts with a height of up to 100m;
- The construction of 2 No. medium voltage substations including control buildings, external electrical equipment, compound fencing etc.;
- The construction of 1 No. 110kV grid connection substation including control buildings, external electrical equipment, compound fencing etc.;
- The provision of a foul effluent treatment system and a treated effluent holding tank;
- The provision of 13 No. site entrances (comprising 7 No. new entrances and 6 No. upgraded entrances);
- The excavation / formation of 3 No. temporary borrow pits with adjacent repositories;
- The upgrading of c. 2,060m of existing access tracks, including associated drainage and sediment control infrastructure;
- The construction of c. 7,700m of new site access tracks, including associated drainage and sediment control infrastructure;
- The carrying out of alterations to the public road network in order to facilitate access for the delivery of turbine components;
- The provision of temporary construction compounds;
- Associated underground cabling works, including a connection to the existing Eirgrid Ballynahulla 110/220kV substation; and
- Landscaping and reinstatement works.

2.2. The applicant has sought a 10-year permission.

3.0 Environmental Impact Assessment Report

3.1. An Environmental Impact Statement has accompanied the subject application and this provides a generally satisfactory description of the receiving environment, the proposed development, its impacts and proposed mitigation measures. It has been

accompanied by a non-technical summary and includes the information required by Schedule 6 of the Planning and Development Regulations, 2001, as amended, and complies with Section 172 of the Planning and Development Act, 2000 and Article 94 of the Regulations. In this respect I would advise the Board that Paragraph 3(i) of Part 2 of Schedule 5 of the Planning and Development Regulations, 2001, as amended, prescribes *'Installations for the harnessing of wind power for energy production (wind farm) with more than 5 turbines or having a total output greater than 5 megawatts'* for the purposes of Part X of the Act.

3.2. The Environmental Impact Assessment (EIA) Directive (2014/52/EU) entered into force on 15th May, 2014, with a requirement that it be transposed into national legislation by 16th May, 2017, however, to date it has not been transposed into Irish law. Circular Letter 1/2017 issued by the Department of Housing, Planning, Community and Local Government (DHPCLG) sets out the transitional arrangements in advance of the commencement of the transposing legislation. In this regard it is stated that Article 3 of Directive 2014/52/EU provides that where an application for planning permission or other development consent with an Environmental Impact Statement has been submitted before 16th May 2017 the relevant provisions of Directive 2011/92/EU must be applied. Therefore, as the subject appeal relates to an application for planning permission which was received by the Planning Authority on 5th April, 2017 it will be assessed pursuant to the applicable requirements of Directive 2011/92/EU.

N.B. The document entitled *'Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems: Key Issues Consultation Paper'* was published by the Department of Housing, Planning, Community and Local Government in May, 2017.

4.0 Planning Authority Decision

4.1. Decision

4.1.1. On 30th May, 2017 the Planning Authority issued a notification of a decision to refuse permission for the proposed development for the following 3 No. reasons:

- Having regard to the spatial extent, size and scale of the proposed turbines relative to the nature of the receiving environment of hilly and flat farmlands and transitional marginal landscapes, it is considered that a wind farm development of the scale proposed would create a significant visual intrusion in this landscape by reason of the height and spatial extent of the proposed turbines which would be excessively dominant and visually obtrusive when viewed from the surrounding countryside and villages. The proposed wind farm would have a significant impact on the value and character of the landscapes in the area and would seriously injure the amenity and quality of life of communities and individuals who dwell in the area. The proposed development would, therefore, seriously injure the residential amenities and visual amenities of the area, would be contrary to the provisions of the Wind Energy Guidelines for Planning Authorities, DoEHLG, 2006 and Section 7.4.5.15 of the Renewable Energy Strategy 2012, would contravene Objective ZL-1 of the Kerry County Development Plan 2015-2021, and would be contrary to the proper planning and sustainable development of the area.
- The application site is located within the catchment of the Munster Blackwater River which is designated under the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations, 2009. Having regard to the scale, nature and extent of the proposed development, the Planning Authority is not satisfied that the construction of the proposed development would not cause pollution of local watercourses. The proposed development would, therefore, have a significant adverse effect on the water quality of the Munster Blackwater River and would be contrary to the proper planning and sustainable development of the area.
- The proposed Turbines T8 and T9 are located in an area used by hunting hen harriers which may breed in the nearby Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area. The proposed development would cause the loss of hen harrier hunting habitat which would have a significant adverse effect on the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

4.2. **Planning Authority Reports**

4.2.1. *Planning Reports:*

States that the proposed development site is located in an area that has been identified as *'Rural General'* in the County Development Plan and has also been designated as *'Open for Consideration'* for wind energy development in the Kerry County Council Renewable Energy Strategy, 2012. The report proceeds to consider the site context and the relevant policy considerations, with a particular focus on the visual impact of the proposed development. Reference is made to the site location within the Munster Blackwater Valley Landscape Character Area and, whilst it is acknowledged that the receiving landscape is not of any particular value in terms of landscape character, the report ultimately concludes that the proposed development would not integrate with its surroundings, would be visually dominant, and would have a significant negative visual impact on the area. It is further stated that the overall scale, height and siting of the proposed turbines would have a detrimental impact on the residential amenity of surrounding dwelling houses.

4.2.2. *Other Technical Reports:*

4.2.3. *County Archaeologist:* Refers to the archaeological impact assessment (including the pre-development archaeological testing report) which accompanied the application, and notes that whilst no Recorded Monuments were identified within the site, the pre-development testing recorded the presence of a burnt spread / mound within Trench No. 22. Accordingly, it was recommended that the following conditions should be attached to any grant of permission:

- A 20m buffer zone should be preserved around the burnt mound / spread identified during testing in Ballynahulla Townland (SMR KE050 016). The buffer zone should be measured from the outermost element of the monuments and should be securely fenced during construction. No traffic or machinery or storage of materials should take place within the buffer zone.
- All ground works associated with the proposed development should be archaeologically monitored under licence from the National Monuments Service.

4.2.4. *Environment:* Notes that the majority of the works will be located within the upper reaches of the Munster Blackwater catchment and that the main drainage of the proposal will be directed towards same. In this respect reference is made to the designation of the Munster Blackwater as a Special Area of Conservation (Site Code: 002170) due to the presence of a number of sensitive freshwater species, including the Freshwater Pearl Mussel, and the understanding that the catchment is not currently achieving its relevant protected area objectives due to the fact that the Freshwater Pearl Mussel populations are not at favourable conservation status. More notably, failure to achieve favourable conservation status in this instance would be classified as a breach of the requirements of the Water Framework Directive.

This report proceeds to state that the decline in the population of Freshwater Pearl Mussel has been linked to a number of factors, although an increase in sediment movements through rivers and other watercourses is considered to be of particular importance. Whilst it is accepted that the populations of Freshwater Pearl Mussel in the Munster Blackwater catchment are generally in serious decline, the Council is still duty bound to ensure that water quality conditions consistent with achieving the relevant protected area objectives are met. The Council is also cognisant that silt plumes can travel considerable distances through river catchments and thus can affect downstream populations.

It is stated that it is a core objective of the Water Framework Directive to prevent the deterioration of water quality and that the stretch of river within which the proposed development will be located is presently classified as being of good status and, therefore, at a minimum, this status must be maintained.

In reference to the mitigation measures proposed in the EIS in relation to the management of sediments associated with the construction of the project, it is stated that there are nevertheless serious concerns in relation to the potential adverse impact of the proposal on the Munster Blackwater and, in particular, the potential for increased sediment loading to the river. In this regard cognisance has been had to the scale, nature and extent of the development in question. It is also stated that it has been the experience of the Environment Department that the management of sediment and the satisfactory treatment of waters for developments of the scale proposed can be challenging, particularly during periods of heavy rainfall.

Cognisance is to be taken of the obligations placed on public authorities, including Articles 4 & 5 of the European Communities Environmental Objectives (Surface Waters) Regulations, particularly with regard to Protected Area objectives and the need to prevent deterioration in water quality status. The Council should also be mindful of the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations, 2009 and the Draft Freshwater Pearl Mussel Sub-Basin Management Plan for the Munster Blackwater.

The report subsequently concludes by stating that in light of the site context, the nature and scale of the development proposed, and the sensitivity of the surrounding catchment, it is considered that the subject proposal would pose an unacceptable risk to water quality in the catchment and thus a refusal of permission is recommended.

4.2.5. *Biodiversity Officer:* An initial report notes the following points (in summary):

- The information in the Natura Impact Statement, with particular reference to the measures proposed to protect water quality in downstream sensitive catchments during the construction phase,
- Having regard to the comments of the Environment Section, it is considered unlikely that the protection of water quality during the construction phase can be satisfactorily mitigated. Considering the scale, extent and nature of the civil works associated with the proposed development, there is the potential for impacts at construction stage on water-dependent species.
- By applying the precautionary principle, and in light of the sensitive nature of the catchment in which the works are proposed, an appropriate assessment of the proposal has concluded that adverse impacts on the integrity of the Munster Blackwater cSAC cannot be ruled out.
- Whilst the proposed development will be located outside of the nearby Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area, it will be directly adjacent to that designation. The National Parks and Wildlife Service has identified areas of the development site that support breeding Hen Harrier and other birds of conservation interest (specifically at Barna Bog). Therefore, the omission of Turbine Nos. T8 & T9

is recommended in order to prevent adverse effects on the integrity of the SPA.

- The EIS has documented a thorough evaluation of ecological constraints on site.
- It is considered that the nature, scale and extent of the works proposed are likely, even with mitigation, to have a significant effect on water quality and downstream fisheries habitats and / or species (unannexed).

The report thus recommends a refusal of permission on the aforementioned grounds.

The remainder of the report provides an analysis of the ecology and hydrology chapters of the EIS, including the habitat and mammal surveys and the Avian Impact Assessment, and states that the main impacts identified in relation to non-annexed habitats / species are as follows:

- Loss / fragmentation of habitats of low ecological value
- Potential construction impacts on watercourses and associated fisheries
- Disturbance to species, particularly avian species.

It subsequently concludes:

- The overall potential loss / fragmentation of habitats is not deemed to be significant in the context of the habitat types found on site which are predominately of local importance and of low-high value.
- Any disturbance of species (non-annex) is not deemed to be of significance in the context of the species recorded and / or utilising the site.
- With regard to the Hen Harrier, the NPWS has recommended the omission of Turbine Nos. T8 & T9 given the potential for adverse effects on the integrity of the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area.
- In relation to other bird species of special conservation concern, doubt remains as regards the potential for significant effects on species such as the Short-Eared Owl during the construction and operational phases of the project.

- The potential for localised impacts during the construction stage to negatively affect water quality and downstream fisheries / habitats is deemed to be significant in the context of the scale, location and nature of the development proposed.

(*N.B.* A separate report has been prepared by the Biodiversity Officer for the purposes of Appropriate Assessment and this is appended to the Planner's Report).

4.2.6. *Killarney Municipal District Operations:* Details a series of requirements / conditions to be considered in the event of a grant of permission before recommending that further information be sought in respect of the following items:

- Details of all proposed haul routes for the entire project
- Details of the expected commencement date and the duration of the works
- The anticipated duration of the proposed ducting works
- A Traffic Management Plan for ducting works, including any proposed road diversions.

4.3. **Prescribed Bodies:**

4.3.1. *Health Service Executive / Environmental Health Officer:* States that there is no objection to the proposed development provided it is carried out according to best practice standards. It also notes that those areas of concern from an environmental health perspective (i.e. soils and geology, water, air quality, noise and vibration, shadow flicker, and cumulative impacts) have been addressed in the EIS. Therefore, the mitigation measures proposed are accepted 'in good faith' and are to be strictly adhered to.

4.3.2. *Farranfore Airport:* No comments.

4.3.3. *Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs:* States that the proposed development is adjacent to the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area (Site Code: 004161) and is also upstream of the Blackwater River (Cork / Waterford) candidate Special Area of Conservation (Site Code: 002170). It is further noted that Barna Bog provides habitat for Annex I listed bird species (hen harrier and short-eared owl) for which there is an

obligation under Article 4 of the EU Birds Directive to strive to protect their habitats outside of protected areas.

The report proceeds to advise that hen harriers will currently be displaced from using hunting habitat within 250m of operational wind turbines and that wintering short-eared owls are likely to be disturbed from their habitats by the construction and operation of nearby turbines. It is also submitted that there is evidence in the last two years of hen harrier mortality within the aforementioned SPA due to collisions with turbine blades and, therefore, the previous risk of collision may have been underestimated.

With regard to the access arrangement serving Turbine No. T9, it is noted that this will require the provision of watercourse crossings of the Carhoonoe Stream in an area with sloping peat soils; these crossings are approximately 3km upstream of the Blackwater cSAC. In this regard it is submitted that there is an anecdotal report of serious siltation of an upper Blackwater watercourse due to the construction of a wind-farm with similar general mitigation measures as cited in its EIS.

The report proceeds to recommend the omission of Turbine Nos. T8 & T9 for the following reasons:

- Turbine Nos. T8 & T9 are within 1km of the SPA and both turbines are in an area used regularly by hunting hen harriers which may breed in the nearby SPA. The loss of hunting habitat due to disturbance / displacement and mortality attributable to collision are significant risks which cannot be ruled out. The Department disagrees with the conclusion of no adverse effects on the SPA (as stated in the NIS) and is of the opinion that reasonable scientific doubt remains in relation to Turbine Nos. T8 and T9.
- In the absence of more specific data other than sightings within the Barna Bog in general, the disturbance of short-eared owls using Barna Bog by the construction and operation of Turbine Nos. T8 and T9 cannot be ruled out.
- While detailed mitigation measures are given in general to avoid siltation during construction, how siltation of the small but fast-flowing Carhoonoe Stream can be avoided during the construction of an access track large enough to support a crane in an area with sloping peat soils is not clear from the EIS. A detailed description of the crossing, the mitigation measures that

will be used at this crossing point, and how any such measures will be monitored and managed is not included in the EIS. No monitoring evidence demonstrating the performance of the proposed mitigation measures at other wind-farm construction sites has been provided (this is not due to a shortage of such sites with similar EIS conditions).

4.3.4. *Inland Fisheries Ireland:* States that whilst there is no objection in principle to the proposed development, it should be noted that such developments have the potential to significantly impact on the aquatic environment if they are not carried out in an environmentally sensitive manner. Therefore, it is submitted that consideration should be given to the following:

- *Physical interference with stream channels:*

  There should be no interference or alterations (drainage or otherwise) without prior consultation with IFI. Instream works, if required, should only take place during the period July to September inclusive (the period prior to October to June inclusive is inappropriate for instream works).

- *Prevention of discharges of polluting matter such as cement:*

  Uncured concrete can kill fish by altering the pH of the water. Precast concrete should be used whenever possible, to eliminate the risk to fish. When cast-in-place concrete is required, all works must be done in the dry and effectively isolated from any water that may enter watercourses for a period sufficient to cure the concrete.

- *Prevention of silt deposition in streams:*

  Silt (from the discharge of silt-laden waters) can clog salmonid spawning beds and can also precipitate further riverbank erosion downstream. This can lead to the loss or degradation of valuable habitat. It is important to incorporate best practice into construction methods and strategies to minimise discharges of silt / suspended solids to waters.

  Site excavations should be minimised and high risk areas identified with additional emphasis on silt mitigation measures and precautionary practices in work method statements. Silt traps should be constructed at locations that will intercept runoff to streams. The silt traps should not be constructed

immediately adjacent to natural watercourses. A buffer zone should remain between the silt trap and the watercourse with natural vegetation left intact so as to assist in silt interception.

All natural watercourses that have to be traversed during site development work should be effectively bridged prior to commencement. The crossing of watercourses at fords is unacceptable because of the amount of uncontrolled sedimentation that can be generated by their use. Measures must be put in place to prevent silt runoff during road construction.

- *Stream Crossings:*

  The migration of fish must not be impeded. Bridging should be of a nature that will not interfere with the natural streambed, stream width or its gradient. Clear span designs maintain the stream channel profile, do not alter stream gradients, readily pass sediment and debris, and retain the natural streambed and gradient. Water velocity is not significantly changed, and they can be designed to maintain the normal stream width. Culvert pipes are not recommended.

- *Borrow pits / borrow pit materials:*

  While the use of borrow pits is accepted as practical in the provision of fill materials for hard-standing areas, road augmentation and material storage, the quality of materials excavated for use may be a potential source of surface water pollution. Where dirty aggregate with significant finings is sourced and used in road and hardstanding areas there then exists a short and medium term risk of significant suspended solids runoff which may overburden silt mitigation measures due to the volume or nature of the subsoil materials. It is recommended that a measures of scrutiny or an approval system to assess the suitability of borrow pit sourced materials be put in place in order to avoid such incidents. Where excavated materials are found to be substandard in this regard controlled washing at the borrow pit may be required or if this is impractical then the importation of materials should be considered. This would avoid the undesirable occurrence of dirty road materials being washed en-situ by precipitation, which had been the experience of IFI on a number of

occasions when inspecting the temporary and permanent road construction projects in sensitive upland areas high in river catchments.

- *Hardcore areas:*

  The increased volumes of surface water runoff from hardcore areas must not impact on the river habitat by giving rise to erosion.

- *Storage of fuels / oils etc.:*

  All storage areas should be adequately bunded and hydrocarbon interceptors placed in locations to contain potential spillages on loading / working areas.

In addition to the foregoing, the Planning Authority should require the applicant to ensure that ground stability is kept under constant review and that the site development works are carried out in such a manner so as not to result in the creation of unstable ground conditions, or subsequently lead to ground instability.

4.3.5. *Department of Agriculture, Food and the Marine:* States that the construction of several of the wind turbines will impact directly on areas of 'wet grassland' and that whilst this is not an annexed habitat, it potentially has a biodiversity value as a semi-improved agricultural habitat. It is also stated that the value of 'wet grassland' as a habitat varies widely, depending on its management, although its ecological value will be affected by direct disturbance due to the proposed construction and drainage works. It is further noted that no mitigation measures have been proposed with regard to this habitat.

The report proceeds to advise that if the proposed development involves the felling or removal of any trees then the developer will be required to obtain a Felling Licence. In addition, any felling or removal of any forest area which has benefitted from grant-aid by the State will require the prior written consent of the Minister. Furthermore, it is noted that deforestation is a project to which the provisions of Article 4(2) of the EIA Directive applies, being one of the projects listed in Annex II of that Directive.

The submission subsequently specifies certain information which should be provided in the Environmental Impact Statement where the felling of forested areas is proposed.

4.4. **Third Party Observations:**

4.4.1. A total of 65 No. submissions were received from interested parties and the principle grounds of objection contained therein can be summarised as follows:

- Detrimental impact on residential amenity by reason of proximity, noise, shadow flicker, vibration, visual impact etc.
- Concerns with regard to possible public health implications
- Devaluation of property
- Visual obtrusiveness / adverse impact on landscape character
- Potential land subsidence / peat spillage
- The potential for water pollution / contamination
- Ecological considerations and the likely impact on wildlife, including several protected species such as hen harrier, freshwater pearl mussel & bats, by reason of disturbance, displacement, loss of habitat, collision risk etc.
- The potential for the spread of invasive species
- Interference with telecommunications services
- Inadequate consideration of the cumulative impact when taken in combination with other existing / permitted wind farm developments in the area.
- Detrimental impact on the cultural heritage of the area and local tourism
- Exacerbation of rural depopulation
- The inadequacy of the EIS and the accompanying survey work etc.
- Insufficient legal interest in the application site
- The substandard nature of the surrounding road network.
- The potential adverse impact on animal welfare, agriculture and the equine industry in the area.
- Inadequate public consultation / local engagement
- Health and safety concerns, including the risk of the catastrophic failure of the proposed turbines (blade-throw).

5.0 **Planning History**

5.1.1. *<u>On Site:</u>*

PA Ref. No. 16/1284 / ABP Ref. No. PL08.248216. Was granted on appeal on 28th November, 2017 permitting EirGrid Plc. permission for the uprate of a section of the existing Clashavoon to Tarbert 220 kV overhead line. The proposed development pertains to the length of existing overhead line between mast structure number 63 (south-east of the existing Knockanure 220kV substation, Co. Kerry, and mast structure number 233 (north of the existing Ballyvouskill 220 kV substation, Co. Cork). The overall length of this section of overhead line is approximately 60.4 kilometres, of which 39.2 kilometres is located in County Kerry and 21.2 is located in County Cork. The proposed development in County Kerry, between mast structure number 63 and the Kerry-Cork County boundary south-east of mast structure number 172, is located in the townlands of Lacka East, Foildarrig, Coolvackagh, Kilcarra More, Scrahan, Knockaderreen, Rylane, Meenahoma, Meenscovane, Ahane, Beheenagh, Knocknagasthel East, Meenbannivane, Ballyduff, Lackbrooder, Meenleitrim North, Meeneitrim South, Knockachur, Lackanoneen, Knockardtry, Kilbannivane, Kilcusnaun, Ballyplimoth, Ballynahallia, Codal West, Breahig, Mullen, Leaha, Derreen, Knockyeala, Tooreengarriv and Ballynahulla. The proposed development in County Kerry comprises of renewal and alteration to a total of 110 mast structures, including foundation upgrade development, removal of an existing lattice steel intermediate mast structure number 107 in the townland of Lackbrooder and replacement with a new steel angle mast structure up to 22 metres in elevation above the ground, installation of one new lattice steel angle mast structure up to 22 metres in elevation above the ground in the townland of Meenleitrim North and restringing of the existing overhead line with new conductor. The proposed development also includes all associated and ancillary works, including comprising or relating to permanent and temporary construction and excavation, involving construction of temporary guard poles, the construction and reinstatement of temporary access tracks, improvement and reinstatement of new temporary entrances, widening of existing entrances, temporary silt fencing, temporary silt traps, temporary culverts, temporary clear span bridging and the clearance of vegetation at various locations along the route to facilitate the proposed principal development. The proposed development will be facilitated by the storage of

construction materials and associated and ancillary activities, at existing hard-standing yards. These six yards (two in County Cork and four in County Kerry) are located in the vicinity of the existing overhead line, in the townlands of Shronebeirne, Dooneen, Glanlarehan and Knocknaboul, County Kerry. No works or change of use, are proposed in these existing yards and do not form part of the development.

5.1.2. *<u>On Sites in the Immediate Vicinity:</u>*

The Scartaglen Wind Farm:

PA Ref. No. 081675. Was granted on 31st March, 2009 permitting Scart Energy Limited permission to construct a wind farm consisting of 4 No. wind turbines with hub heights of not more than 85m and an overall blade tip height of not more than 120.5m with access roads and ancillary works. Previous permission for a wind farm consisting of 4 No. turbines on the site was granted under PA Ref. No. 03/274. All at Barna, Scartaglen, Co. Kerry.

PA Ref. No. 082030. Was granted on 22nd May, 2009 permitting Scart Energy Limited permission to construct a wind farm consisting of 5 No. wind turbines with hub heights of not more than 85m and an overall blade tip height of not more than 120.5m, with access roads, electrical substation, and ancillary works. Previous permission for a wind farm consisting of 5 No. turbines on the site was granted under PA Ref. No. 03/1902. All at Barna, Scartaglen, Co. Kerry.

PA Ref. No. 091284. Was granted on 16th August, 2010 permitting Scart Energy Limited permission to construct an extension to a wind farm (previously granted under PA Ref. No. 08/2030) consisting of 3 No. wind turbines with hub heights of not more than 85m and an overall blade tip height of not more than 120.5m with access road and ancillary works. All at Barna, Scartaglen, Co. Kerry.

PA Ref. No. 13114. Was granted on 4th September, 2013 permitting Scart Energy Limited permission to construct a wind farm including 12 No. wind turbines (with a maximum height of up to 126.5m) 1 No. permanent meteorological mast, 1 No. substation, the provision of new and upgraded internal site service roads, underground cabling and all associated infrastructure the proposed development would entail the construction of 12 No. wind turbines which would be higher than the 12 No. turbines previously permitted on site under PA Ref. Nos. 08/1675, 08/2030 & 09/1284. All at Barna, Scartaglen, Co. Kerry.

PA Ref. No. 13725. Was granted on 6th June, 2014 permitting Scart Energy Limited permission to construct an extension to a permitted 12 No. turbine wind farm development (PA Ref. No. 13/114). The development will consist of 6 No. wind turbines (hub height up to 85m and maximum blade tip height of up to 126.5m), upgrading of existing access roads, construction of additional access roads, further development of 2 No. existing borrow pits on site and associated ancillary works. Development previously granted under PA Ref. No. 13/114 will facilitate the proposed extension to the wind farm. All at Barna and Knockrower East, Scartaglen, Co. Kerry.

PA Ref. No. 1493. Was granted on 19th May, 2014 permitting Coolegrean Wind Farm Ltd. permission to construct an 8.19km long underground 38kV electrical cable to connect the proposed electrical substation for the permitted Cordal Wind Farm (Pl. Reg. No. 12/460 to the proposed electrical substation for the permitted Coolegrean Wind Farm (Pl. Reg. Nos. 06/1489 & 06/91489) at Glanawaddra, Glanowen, Knockauncurragh & Coolegrean, Co. Kerry.

PA Ref. No. 14/545 / ABP Ref. No. PL08.244065. Was refused on 5th June, 2015 refusing Scart Energy Limited permission for the construction of a 38kV overhead line (4.3 kilometres approximately) and 38kV underground cable (2.8km approximately) from Cordal 110kV station in the townland of Glanowen to the Scartaglen Wind Farm 38kV station in the townland of Barna. The proposed line will be erected over or within the vicinity of the townlands of Glanowen, Glanawaddra, Knockyeala, Knockeennahone and Barna, Co. Kerry:

- Having regard to the scale and nature of the development and in particular the proposal to develop an overhead power line through part of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area (Site Code 004161), the Board is not satisfied that the proposed development would not lead to adverse indirect and in-combination effects on the special conservation interest of this European site, that is, the hen harrier, and that, notwithstanding the mitigation measures proposed by the applicant, there remains reasonable scientific doubt that there would be no such adverse effects. It is, therefore, considered that the Board cannot be satisfied that the proposed development would not adversely affect the

integrity of this European site. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

PA Ref. No. EX582 / ABP Ref. No. RL08.RL3601. Referral to the Board by Kerry County Council as to whether the grid connection and associated works for the purposes of conducting generated electricity between the Scartaglen Windfarm 110kV substation at Barna, Scartaglen, Co. Kerry, to the Cordal Windfarm 110kV substation ay Knockauncurragh, Coom, Glanowen and Glaawaddra, Co. Kerry, through the townlands of Knockeennahone, Knockyeala along the local road to the Knoppoge Crossroads at Knocknaboul, along the Cordal road to Knockyeala, then to Glanawaddra, all in Co. Kerry, is or is not development or is or is not exempted development. No decision to date.

The Cordal Wind Farm:

PA Ref. No. 033977. Was granted on 30th April, 2004 permitting Saorgus Energy Limited permission to construct a wind farm of 21 No. turbines together with ancillary services roadways, transformers, 50m monitoring mast and control house. All at Coom, Glanowen, Knockauncurragh, Co. Kerry.

PA Ref. No. 061489. Was granted on 1st February, 2007 permitting Magson Holdings Ltd. permission to erect a wind farm consisting of 7 No. wind turbines with a hub height of up to 70m approximately and a propeller radius of up to 40m approximately, 50m high wind monitoring mast, access roads, and ESB substation and ancillary works. All at Coolleegrean, Brosna, Co. Kerry.

PA Ref. No. 072633. Was granted on 17th April, 2008 permitting Saorgus Energy Limited permission to construct 11 No. wind turbines, construction access, access tracks, borrow pit, electrical substation, control house and meteorological mast. All at Knockauncurragh, Glanowen and Glenawaddra, Cordal, Co. Kerry.

PA Ref. No. 10352. Was refused on 28th March, 2011 refusing Coollegrean Wind Farm Ltd. permission to construct a wind farm consisting of 6 No. wind turbines (hub height up to 85m and maximum blade tip height of 125m), 1 No. substation compound, 1 No permanent 80m meteorological monitoring mast, 1 No. temporary construction compound, upgrading of existing access roads, construction of additional access road and associated works. All at Coolleegrean, Brosna, Co. Kerry.

PA Ref. No. 10692 / ABP Ref. No. PL08.239473. Was granted on 11th May, 2012 permitting Saorgus Energy Limited permission to construct a wind farm comprising 28 No. wind turbine generators with a maximum hub height of 90 metres, a maximum rotor diameter of 90 metres and a maximum overall height of 135 metres, an electrical substation compound, control building, anemometer (two number) and associated site infrastructure including site roads, crane hardstandings and underground cabling, all at Knockauncurragh, Coom, Glanowen and Glanawaddra, Cordal, Co. Kerry.

PA Ref. No. 12460. Was granted on 22nd November, 2012 permitting Saorgus Energy Limited permission to construct a 110kV grid connection substation compound with associated control building, equipment plinths / bunds and fencing, Class 1 oil interceptor, on site wastewater treatment plant and treated effluent storage tanks and associated site development works within the permitted wind farm development (PA Ref. No. 10/692). The proposed development will be located in an area designated as temporary construction compound (location of future grid connection substation compound). The proposed development includes amendments to the location, layout and details of the wind farm substation compound and the location of an anemometer mast from those permitted under PA Ref. No. 10/692 in order to facilitate connection to the proposed 110kV connection substation compound. All at Knockauncurragh, Coom, Glanowen & Glanawaddra, Cordal, Co. Kerry.

6.0 Policy Context

6.1. National and Regional Policy

6.1.1. Wind Energy Development, Guidelines for Planning Authorities:

The guidelines pertaining to wind farm development in Ireland are set out in the publication *"Wind Energy Development, Guidelines for Planning Authorities"* issued by the Department of the Environment, Heritage and Local Government in June, 2006. The presumption is in favour of wind farm development in suitable circumstances.

The Guidelines indicate:

- The need for a plan led approach.
- In section 4.3 there is reference to access to the electricity grid and that best practice would suggest having in applications for windfarms information on grid connection including indicative or feasible options but this may not always be possible.
- Noise is another important consideration and is referred to in paragraph 5.6 and account should be taken of the nature and character of nearby surroundings and developments in assessing noise levels and guidance on levels for different locations are outlined.
- Chapter 6 relates to aesthetic considerations in siting and design.
- Regard should be had to profile, numbers, spacing and visual impact and the landscape character.
- Account should be taken of intervisibility of sites and the cumulative impact of developments.

The Guidelines consider that the following influence visual impact:

- Form and characteristics of the landscape;
- Design and colour;
- The existing skyline;
- Layout of turbines, and
- The number and size of turbines and intervisibility of sites.

N.B. Whilst an emerging "preferred draft approach" to the 'Review of the 2006 Wind Energy Development Guidelines' was jointly announced on 13th June 2017 by the Department of Housing, Planning, Community and Local Government (DHPCLG) and the Department of Communications, Climate Action and Environment (DCCAE), this updated guidance has yet to be finalised or issued under Section 28 of the Planning and Development Act 2000, as amended.

6.1.2. *South West Regional Planning Guidelines 2010-2022:-*

Chapter 5: Transport and Infrastructure Strategy:

RTS-09: *Energy and Renewable Energy*:

It is an objective to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the

sustainable expansion of the network. National grid expansion is important in terms of ensuring adequacy of regional connectivity as well as facilitating the development and connectivity of sustainable renewable energy resources.

It is an objective to ensure that future strategies and plans for the promotion of renewable energy development and associated infrastructure development in the Region will promote the development of renewable energy resources in a sustainable manner. In particular, development of wind farms shall be subject to:

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

6.2. **Development Plan**

6.2.1. ***Kerry County Development Plan, 2015-2021:-***

Chapter 7: Transport & Infrastructure

Section 7.6: *Energy/Power Provision:*

EP-1: Support and facilitate the sustainable provision of a reliable energy supply in the County, with emphasis on increasing energy supplies derived from renewable resources whilst seeking to protect and maintain biodiversity, archaeological and built heritage, the landscape and residential amenity.

EP-3: Facilitate sustainable energy infrastructure provision, so as to provide for the further physical and economic development of the County.

EP-7: Facilitate the sustainable development of additional electricity generation capacity throughout the region/county and to support the sustainable expansion of the network. National grid expansion is important in terms of ensuring adequacy of regional connectivity as well as facilitating the development and connectivity of sustainable renewable energy resources.

EP-8: Ensure that the siting of electricity power lines is managed in terms of the physical and visual impact of these lines on both the natural and built environment, the conservation value of Natura 2000 sites and especially in sensitive landscape areas. When considering the siting of powerlines in these areas the main technical alternatives considered should be set out, with particular emphasis on the undergrounding of lines, and the identification of alternative routes at appropriate locations. It should be demonstrated that the development will not have significant, permanent, adverse effects on the environment including sensitive landscape areas and the ecological integrity of Natura 2000 sites.

Section 7.6.3: *Renewable Energy:*

EP-11: Implement the Renewable Energy Strategy for County Kerry (KCC 2012).

Chapter 10: Natural Environment & Flood Risk Management:

Section 10.2: *Environmental Designations:*

NE-11: Ensure that all projects likely to have a significant effect on a Natura 2000 / European site will be subject to Habitats Directive Assessment prior to approval.

NE-12: Ensure that no projects which will be reasonably likely to give rise to significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites having regard to their conservation objectives, shall be permitted on the basis of this Plan (either individually or in combination with other plans or projects) unless imperative reasons of overriding public interest can be established and there are no feasible alternative solutions.

NE-13: Maintain the nature conservation value and integrity of all Natural Heritage Areas (NHAs), proposed Natural Heritage Areas (pNHAs), Nature Reserves and Killarney National Park. This shall include any other sites that may be designated at national level during the lifetime of the plan in co-operation with relevant state agencies.

Section 10.14: *Environmental Impact Assessment*

Chapter 12: Zoning & Landscape:

Landscape Protection:

ZL-1: Protect the landscape of the County as a major economic asset and an invaluable amenity which contributes to the quality of people's lives.

Section 12.3.1: *Zoning Designations:*

Rural General:

Rural landscapes within this designation generally have a higher capacity to absorb development than the previous rural designations. It is important that development in these areas be integrated into their surroundings in order to minimise the effect on the landscape and to maximise the potential for development.

Proposed developments in areas zoned Rural General, should in their designs take account of the topography, vegetation, existing boundaries and features of the area as set out in the Building a House in Rural Kerry Design Guidelines (Kerry County Council 2009). Permission will not be granted for development which cannot be integrated into its surroundings.

N.B. From a review of Map No. 12.1k of the Development Plan it is apparent that the proposed development site is located within an area which has been designated as *'Rural General'.*

Chapter 13: Development Management – Standards & Guidelines:

Section 13.2: *Development Standards / General*

6.2.2. ***Kerry County Council Renewable Energy Strategy, 2012 (as incorporated by Variation No. 8 of the Kerry County Development Plan, 2015-2021):-***

Section 7.4.1: *Introduction:*

Strategic Objectives For The Development Of The Renewable Energy Sector:

NR 7-21: To maximise the development of all renewable energies at appropriate locations in a manner consistent with the proper planning and sustainable development of the county. This will include requirements and considerations in relation to: landscape; cultural heritage; Natura

2000 sites and the Habitats & Birds Directive; the objectives of the Water Framework Directive; Flood Directive; Sustainable Forestry Management; and Best Practices in the production of energy crops.

NR 7-24: To secure the maximum potential for the generation of electricity from wind energy resources that is consistent with proper planning and sustainable development of the county. This will include requirements and considerations in relation to: landscape; cultural heritage; Natura 2000 sites and the Habitats & Birds Directive; the objectives of the Water Framework Directive; Flood Directive; electricity infrastructure; settlement patterns; and wind energy potential.

NR 7-25: All renewable energy developments will be subject to Ireland's obligations under the Habitats Directive (92/43/EEC), the EU (Birds) Directive (79/409/EEC), the Environmental Impact Assessment Directive (85/337/EEC), the Water Framework Directive (2000/60/EC), and the Flood Directive (2007/60/EC).

NR 7-26: Only renewable energy proposals where a Habitats Directive Article 6 Assessment concludes that there will be no adverse effects on the integrity of Natura 2000 sites shall be permitted.

Section 7.4.2: *Renewable Energy Penetration and Resource Appraisal:*

Section 7.4.2.5.1: *Onshore Wind Energy Development:*

Wind energy is the focus of public policy for achieving the National Target of 20% of electricity consumed from renewable energy sources by the year 20206. 14 wind farm developments are operational with a total installed capacity of 222.64mw and a maximum export capacity of 217.1mw as detailed in Table 7.2. Under the Gate 3 Node Assignment published by EirGrid (update 20th May 2011) a total of 296.4mw has been assigned to the County spread between 16 different projects. This is in addition to the 195.5mw which is contracted under Gate 2.

The total for connected windfarms, contracted windfarms and Gate 3 Node Assignments is 714.54mw. In addition to which, under Post Gate 3, there are plans for a further 324.15mw of wind energy in Kerry. This could result in potentially over 1gw of power generated by wind in the county. To deliver this energy, significant resources have been directed at increasing the capacity of the transmission network.

It is intended that this electricity will be exported to the high population centres in the east of the country.

However, while the county's theoretical wind energy source is considerable there are environmental, social and economic constraints on the development of wind energy. Such constraints include factors such as landscape and ecology. These factors determine the practical capacity for the development of wind. Based on an analysis of these constraints specific geographical areas have been identified as being suitable for wind. Areas are classified as being Strategic, Open-to-Consideration or Unsuitable for Wind Development. These geographic areas are shown on Map 7.6. Section 7.4.5 sets out the methodology by which these areas have been identified, and also the criteria to be used in the assessment and determination of planning applications.

The capacity of the grid when upgraded, taken in conjunction with and the scale of wind development envisaged by the Commission for Energy Regulation, suggests that the potential for electricity generated by wind is considerable. To deliver this level of development in a manner which is consistent with the proper planning and sustainable development of the county presents the planning authority with significant challenges. Section 7.4.5 sets out the scale of development envisaged in wind development zones and the policy and objectives which will maximise development in these areas.

It should be noted that at present the gate process which offers grid connections for wind development is not integrated with the planning process. Grid connections are offered to developers who have not yet secured a site or a grant of planning. Conversely sites with permission for wind development have not secured an offer of a grid connection. Given this disconnect it is unlikely that the proposed level of wind development envisaged under the Gate programme will be fully realised during the lifetime of this strategy.

Section 7.4.3: *Transmission Network and Transportation*

Section 7.4.4: *Policy Development and Environmental Protection*

Section 7.4.5: *Wind Energy:*

Section 7.4.5.1: *Introduction:*

- To secure the maximum potential for the generation of electricity at appropriate locations from wind energy resources that is consistent with proper planning and sustainable development of the county.
- To identify key areas where there is wind energy potential and where, subject to criteria such as design and landscape planning, natural heritage, environmental and amenity considerations, wind energy development can be deployed.
- To set out the specific criteria for wind energy development that the planning authority will apply when considering the merits of any wind development proposal.
- To provide a sustainable policy framework for the development of small-scale wind developments and single use turbines.

Section 7.4.5.6: *Transmission Grid*

Section 7.4.5.7: *Natural Heritage Designations:*

Section 7.4.5.8: *Biodiversity*

Section 7.4.5.12: *Landscape and Visual Impacts*

Section 7.4.5.13: *Kerry County Development Plan 2009-2015 – Landscape:*

Section 7.4.5.13.3: *Rural General:*

Rural landscapes within this designation generally have a higher capacity to absorb development than the previous rural designations. It is important that development in these areas be integrated into their surroundings in order to minimise the effect on the landscape and to maximise the potential for development.

Section 7.4.5.15: *Wind Deployment Zones:*

There are a significant number of one-off houses in all rural areas throughout the county. The only exception to this is on the higher reaches of mountainous areas. There are, therefore, of necessity, houses located in all wind deployment zones. In identifying sites and in the disposition of turbines, development proposals must carefully consider potential impacts on residential amenity. Proposals which have a significant negative impact on residential amenity will not be permitted.

Open-to-Consideration:

Site searches within these areas will identify sites with wind energy capacity and the environmental and infrastructural capacity to support wind development. They differ from Strategic Areas in that there are fewer suitable sites. It is recommended that during the site search process, developers consult with the planning authority. Again the capacity of these areas has limits and the cumulative impact of wind development in these areas will be monitored.

N.B. The proposed development site is located in an area which has been designated as 'Open for Consideration' on Map No. 7.6: *'Wind Deployment Zones'* of the Kerry County Council Renewable Energy Strategy, 2012.

NR 7-33: Proposals shall demonstrate conformity with existing and approved wind farms to avoid visual clutter and how they have taken regard of potential cumulative effects, where appropriate.

NR 7-34: Projects shall be designed and developed in line with the Wind Energy Development Guidelines, Guidelines for Planning Authorities (DoEHLG, 2006) and any update of these guidelines in terms of siting, layout and environmental studies. Any proposed development of on-shore wind adjacent to Natura 2000 sites will have to ensure a suitable buffer zone exists between the development and the Natura 2000 boundary. The Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (Site Code 004161) will require a buffer zone of at least 250m between the SPA boundary and operating wind turbines.

NR 7-35: Applications shall be accompanied by a Natura Impact Statement under Article 6 of the Habitats Directive if the site is located in close proximity to a (candidate) Special Area of Conservation or Special Protection Area or if the site is within the catchment of a (candidate) Special Area of Conservation. Only proposals where a Habitats Directive Article 6 Assessment concludes that there will be no adverse effects on the integrity of Natura 2000 sites shall be permitted.

NR 7-36: All applications must comply with the objectives and development standards of this strategy and the provisions of the Kerry County Development Plan 2009-2015. This will include requirements and considerations in relation to: landscape; cultural heritage; Natura 2000

sites and the Habitats & Birds Directive; the objectives of the Water Framework Directive; Flood Directive; electricity infrastructure; settlement patterns; and wind energy potential.

NR 7-37: Applications for wind development shall be accompanied by a technical assessment in relation to the slope stability, landslide susceptibility of the development site and the proposed project. This assessment shall incorporate slope stability mapping and groundcover assessment in the context of potential cumulative effects arising from multiple developments and consider potential impacts on slope stability in relation to climate change impacts, particularly flash floods and changing weather conditions.

Section 7.4.5.19: *Development Management Standards*

Section 7.4.5.21: *Disposition of Turbines*

Section 7.4.5.24: *Population and Human Health*

Section 7.4.11: *Considerations in the Making of a Planning Application:*

Section 7.4.11.2.3: *Buffer Zones*

Section 7.4.12: *How the SEA/HDA Informed the Renewable Energy Strategy and Mitigation Measures Proposed:*

Section 7.4.12.2: *Mitigation Measures*

6.3. Natural Heritage Designations

6.3.1. The following Natura 2000 sites are located within a 15km radius of the proposed development site:

- The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area (Site Code: 004161)
- The Blackwater River (Cork/Waterford) Special Conservation Area (Site Code: 002170)
- The Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment Special Conservation Area (Site Code: 000365)
- The Castlemaine Harbour Special Conservation Area (Site Code: 000343)

- The Lower River Shannon Special Conservation Area (Site Code: 002165)

7.0 The Appeal

7.1. Grounds of Appeal

- The proposed development, including the location, context and suitability of the site, accords with best practice and is also in accordance with national and regional policy, the Kerry County Development Plan, and the Kerry Renewable Energy Strategy. The proposed additional capacity of renewable energy generation assists towards the achievement of government targets for the reduction of fossil fuel consumption, reduction in the emission of greenhouse gases and reduced dependence on imported fuels.
- Over the last five years, very significant public investment has been made to develop the electricity transmission grid infrastructure in the southwest of Ireland as part of a national programme to facilitate further integration of renewable energy projects. This has resulted in the construction and commissioning of 4 No. new 220kV substations and associated transmission lines and cables in the southwest region. Accordingly, one of main reasons for the selection of the subject site for the proposed development was because of its proximity to one of these newly commissioned 220kV substations at Ballynahulla.
- The proposed development will contribute significantly towards achieving national and EU targets for renewable energy production and a reduction in CO_2 emissions.
- In order to meet national renewable energy and greenhouse gas emission reduction targets, between 200MW and 250MW of additional wind capacity must be installed very year to 2020. The subject proposal has the potential to add up to 50MW or 25% of the additional annual wind capacity required to meet these targets.
- The proposed development is supported by the Kerry Renewable Energy Strategy by virtue of its nature, location, layout and design. The site selection process undertaken has concluded that the subject site is one of a very

limited number of locations in the county which satisfies the appropriate planning, environmental, land availability and proximity to grid connection criteria.

- The subject site is located within the Killarney Municipal District in an area which has been designated as *'Open to Consideration'* and in this regard it is of relevance to note that Objective EP-12 of the County Development Plan states that wind farm development will not be permitted in areas designated as '*Open to Consideration'* in the Tralee and Listowel Municipal Districts until 80% of the turbines with permission in those areas, on the date of adoption of the Plan, have either been erected or the relevant permissions have expired (or a combination of both) and the cumulative effect of all the permitted turbines in the vicinity of the proposal have been fully assessed and monitored. Given the impact of the exclusion of the Tralee and Listowel Municipal Districts on the availability of suitable sites, it is submitted that the subject site clearly emerges as a favourable location for wind energy development as it has sufficient area where it is possible to comply with the guidelines for separation from dwellings and is also located in very close proximity to the national grid.
- The Renewable Energy Strategy defines '*Strategic Search Areas'* as those areas which have economically feasible wind speeds, relatively low ecological sensitivity, and where the receiving landscapes have the capacity to host wind. Additionally, these areas are within 10km of the transmission network. The subject site meets all the criteria of a '*Strategic Search Area'* and thus a wind energy project can be developed, installed and commissioned quickly at this location.
- The following attributes render the application site suitable for the proposed development:
    - Good wind speeds (as verified by on-site monitoring)
    - It lies outside of environmentally designated sites, including European Sites and Natural Heritage Areas.

- The ability to connect to nearby electrical grid infrastructure. The Ballynahulla 220kV substation and grid line is c. 300m from a proposed wind farm substation.
- The ability to utilise existing site trackways and infrastructure.
- The ability to use the nearby national road network for haulage.
- It is in a rural area and the recommended separation distances are achievable. The proposed wind turbines will be a minimum of 500m from the dwellings of 'non-involved' parties.
- It is located in an area designated as '*Open to Consideration'* in the Kerry Renewable Energy Strategy.

- The Renewable Energy Strategy also refers to the sensitivity of the receiving landscape in the assessment of a wind farm project:
  - The site is located in a landscape zoned as '*Rural General'* which has the highest capacity to absorb development.
  - The Munster Blackwater Valley Transitional Marginal Land, Hilly & Flat Farmland Area is identified in the RES as having capacity for wind energy development.
  - The Landscape Assessment contained in the RES categorises this area as marginal in nature and thus has very little scenic value.
  - The proposal does not impact on any protected views / prospects or designated scenic landscapes.
  - There are no views to protect and the landscape does not have any particular scenic quality.
- The size and scale of the proposal is in line with international trends and is such that a small number of tall turbines in a given area can yield more output than a development with a multiplicity of smaller turbines in the same area.
- With regard to the initial reason for refusal and the reference therein to the potential impact of the proposed development on residential amenity by reason of noise, vibration, dust and shadow flicker:

- Shadow flicker will be controlled at source in order to avoid the occurrence of same at any dwelling house and the incorporation of the shadow flicker control measures set out in the EIS can be included as a condition of any grant of permission.
- The noise impact assessment detailed in the EIS describes the worst case noise levels that may be experienced at the nearest dwellings and found that noise levels would not exceed the recommended day and night-time guideline limits. The proposed wind farm can operate within the recommended limit values whilst conditions can be attached to any grant of permission with regard to the control of noise.
- With regard to the assertion by the case planner that the noise and possible vibration impacts of the proposed borrow pits were not adequately assessed, the Board is referred to Section 9.3.8.2 of the EIS which provides an assessment of the construction noise likely to be generated by the operation of the borrow pit. This found that due to the separation distances available and the nature of the equipment to be used, the noise levels emanating from Borrow Pit Nos. 1 & 2 will not exceed typical construction noise limits at the nearest dwelling house. With regard to Borrow Pit No. 3, it is acknowledged that while the rock breaker is in operation it is possible that the construction noise limit will be exceeded, however, this is considered to be a worst-case scenario and the on-time of the rock breaker can be managed to ensure that the 8-hour daily noise limit threshold (as set out in BS5228) is not exceeded. Furthermore, the working face of the pit will act as a barrier to noise propagation. In addition, the use of a rock breaker can be avoided completely where possible and a ripper or back-hoe bucket used instead (which will give rise to lower noise levels).
- Current technology allows construction noise levels to be managed in real time and a noise monitoring programme can be implemented to ensure that construction noise from the borrow pits is kept to a minimum.
- Vibrational impacts from the proposed borrow pits were scoped out of the assessment as they were not likely to be of significance. There will be no

piling or blasting as part of the borrow pit excavation whilst there are no other significant sources of vibration. The separation distance between the borrow pits and the nearest dwellings will ensure that there are no significant vibrational impacts attributable to the use of the proposed borrow pits.

- Due to the separation distance of c. 260m between the borrow pits and the nearest dwelling house the impact of dust will not be significant.
- Provision will be made for dust deposition measures in the Construction and Environmental Management Plan whilst fugitive dust emissions will be monitored at locations to be agreed with the Planning Authority (typically at boundary locations) in accordance with the relevant guidelines.

- Whilst the Planning Authority is of the opinion that the landscape does not have the capacity to absorb a development of the scale proposed owing to the height and spatial extent of the turbines and, therefore, the proposed turbines will be excessively dominant when viewed from the surrounding countryside and villages, it is submitted that the Planning Authority's reference to the provisions of the Wind Energy Guidelines is selective and does not consider the guiding principles in full. The receiving landscape is not highly sensitive and the height of the proposed turbines does not support a refusal on such grounds.
- The Wind Energy Guidelines do not set a limit on turbine height *in 'Hilly and Flat Farmland'* and instead state that within such areas turbine height should be *'Medium typically preferred but tall may be acceptable'.* Therefore, the subject proposal does not automatically contravene the Guidelines.
- The relationship between visual impact / dominance and turbine height is not directly proportional and in most settings the difference in overall turbine height can be difficult to distinguish. The real visual impact of a wind farm is the presence of the vertical structures in a typically rural landscape and this has been found to be acceptable having considered the receiving landscape, the landscape characteristics of the surrounding area, the absence of any designations for the protection of landscape amenity in the vicinity, and the distance from designated views / prospects.

- With regard to the spatial extent of the proposed wind farm, it is considered that the subject proposal relates well to the receiving environment and that its spatial distribution is balanced with its landscape context.
- The proposed development site is located within Landscape Character Area 34: *'Munster Blackwater Valley'* as determined by the Landscape Character Assessment prepared for the Renewable Energy Strategy, 2012 whilst the proposed wind farm is confined to the northern extent of this LCA and thus is not spatially excessive within the overall landscape character unit.
- The subject site is located within a region of the LCA which is considered to have significant capacity for wind energy development.
- The proposed development comprises two clusters of turbines which are both further subdivided into several smaller groups of turbines. This layout and distribution responds well to the receiving environment as it reduces the extent and visual mass of the development (as demonstrated by the submitted photomontages).
- The additional photomontage included in Appendix 3 of the grounds of appeal identified as Viewpoint 'C' shows that the northern cluster of turbines would be seen as an independent group separated by scale and distance from the southernmost cluster rather than as an elongated spread of turbines.
- Whilst the Planning Authority would appear to be of the opinion that there is little capacity to accommodate the proposed wind farm as *'The Munster Joinery Turbines are very visible from here as well as the infrastructure leading into the Eirgrid 220kV substation at Ballynahulla'* and that the *'landscape is already cluttered'*, Photomontage No. 5 corresponds with a viewpoint used in the Renewable Energy Strategy's Landscape Character Assessment of the absorption capacity of the Munster Blackwater LCA for wind farm development which determined that the area had *'significant capacity'* for wind energy development.
- In a wider context, owing to the nature of the undulating landscape and vegetative screening, the full extent of the proposed scheme will rarely be observable and the visibility of more than one cluster of turbines at a time would be limited.

- In response to the concerns that no landscape assessment was undertaken for viewpoints from Local Road Nos. L3020-0 & L3013-74, the Board is referred to the additional photomontages included in Appendix 3 of the grounds of appeal. These details demonstrate that whilst the turbines are fairly large relative to their surroundings, it is apparent that they are not completely out of scale with houses in the foreground when seen from Viewpoint A whilst the lateral extent of the scheme is compact when viewed from Viewpoint B.
- These small turbine groupings are considered appropriate and best suited to the local landscape in that they achieve a small spatial extent relative to their immediate local setting.
- The layout and extent of the proposed development does not materially contravene the Wind Energy Guidelines or the Kerry County Development Plan. Given that the area in question is somewhat mixed and includes farmland, forestry and some moorland, it is submitted that it does not contain any one landscape characteristic that would demand one specific type of layout but should have the capacity to absorb a variety of designs and layouts.
- Much of the surrounding hinterland is zoned as '*Rural General'* while the site itself is located in an area designated as '*Open for consideration'* in the Renewable Energy Strategy. The site location is of no particular sensitivity and the surrounding landscape is not of high amenity value. There are no specific landscape attributes which would afford the site a high sensitivity rating.
- The landscape changes consequent on the proposed development are not so significant as to have an unacceptable detrimental impact on either the local or wider landscape character / value. The key elements of the landscape character would remain largely intact and the existing rural character of the area will prevail.
- Contrary to the Planning Authority's suggestion, it is submitted that the receiving environment is comparable to the neighbouring Scartaglen wind farm in both topography and land use.

- Due to the low sensitivity of the receiving environment together with the proposed small groupings, screening, the spatial structure of the landscape and visual absorption capacity, the proposed development will not have a significant impact on landscape character / value.
- The potential impacts of the proposed development on residential amenity have been assessed throughout the EIS. No significant impacts or serious health effects have been identified by the Planning Authority or others which would injure the quality of life of local residents / communities.
- The recommended set back of 500m between turbines and inhabited dwellings for reasons of noise nuisance can generally be applied to deal with issues of visual dominance. The subject proposal achieves this separation distance from houses that are not involved in the scheme. It also satisfies the noise and shadow flicker limits set out in the Guidelines.
- Whilst all possible measures have been taken to protect the amenities of nearby housing, it should be noted that this is a rural area (as opposed to a residential area). Such rural areas cannot be treated as if they were purely residential and the protection of residential amenity cannot extend to a blanket-ban on non-residential activities such as wind farms which are now an accepted part of the rural environment.
- The subject proposal satisfies all the normal standards applicable to wind farm developments and is not contrary to Section 7.4.5.15 of the Renewable Energy Strategy, 2012.
- The proposed turbines are no closer to neighbouring housing that many other existing and permitted wind farms, including the Scartaglen Wind Farm.
- There are significant benefits to the local community associated with the wind farm proposal. A wind turbine will provide a guaranteed income for those landowners involved in the project. Furthermore, the annual contribution to the community benefit fund will aid local communities.
- In previous decisions (e.g. ABP Ref. No. PL03.245392), the Board has indicated that it is satisfied that the removal of silt through drainage design and surface water management methods is a well-established engineering

practice which is commonly employed within the construction industry and that is well-understood and known to be effective. This includes the separation of overland flow from construction areas, compartmentalised drainage design, the use of silt removal methods (including settlement ponds) and, if necessary, the use of siltbusters.

- The subject application has been accompanied by a detailed Drainage Design and Surface Water Management Plan which aims to ensure the successful removal of silt through the highest engineering design standards so that no significant siltation impacts will arise from the proposed development. In addition, a topographical survey was commissioned to inform the detailed drainage design.
- The decision of the Planning Authority to refuse permission is based on a perception of risk which is a disproportionate response to the actual risk. The best principles of drainage design and surface water management have been applied and these can be enforced by way of condition.
- A further explanation of the effectiveness of the sediment and erosion and drainage design and a comparison to a recognised methodology developed by Altmuller and Dettimer, which has proven to be successful in the protection and influential in the restoration of the resident freshwater pearl mussel population in the Lutter River, is provided in the accompanying version of the Surface Water Management Plan. The measures described in Altmuller and Dettimer are specifically referred to in the Sub-Basin Management Plan for the Munster Blackwater as the appropriate standard of sediment control for construction projects within the sub-basin.
- The following best practice elements are fundamental to the submitted Surface Water Management Plan:
    - Clean and dirty water are separated to ensure only dirty water is treated thereby reducing the load on settlement ponds. Clean water will be directed under the wind farm infrastructure, mainly roads, so that it avoids any interaction with the development site. Therefore, only water that falls as rainfall on exposed areas of the development will require cleaning.

- The drainage is designed to ensure that there is no change to the hydrological regime as it exists across the site.
- There will be no direct discharge to surface watercourses. Outflow from settlement areas will be via diffuse overland flow with sufficient vegetative buffers to watercourses. Diffuse flow is achieved with level spreaders.
- The dirty water treatment process will comprise a three-tier system. The first phase will consist of an appropriately sized settlement pond comprising two chambers, the first of which will remove most of the sediment load, the second chamber will remove most of the remaining load. Before the water is released onto the existing ground surface, it will pass through a secondary treatment system in the form of a graded gravel filter bed. Finally, the outflow is dispersed across a wider area of vegetation so the velocity is minimised and vegetation can filter out the residual sediment.
- The design is modular ensuring each turbine or hardstand area, or 1,200m of internal access road, has its own individual 3-tier treatment system, including settlement pond and vegetative filter.
- The system has been designed to cater for storm events and the settlement ponds are designed accordingly.
- The SWMP acknowledges the necessity for regular maintenance, inspection and water quality monitoring.
- The site boundary, which includes all hardstanding and works areas, has been calculated as comprising 0.13% of the Munster Blackwater catchment. The area which could potentially impact on the Blackwater River is much less as the area of exposed soil will be much lower than that within the site boundary.
- Once operational, the wind farm will cease to be a source of perceived risk to water quality whilst the biodiversity enhancement measures included as part of the SWMP will bring a biodiversity gain to the development area.

- Further mitigation is proposed in the following parts of the EIS to manage any potential residual water quality impacts: The Ecological Impact Assessment, the Natura Impact Statement, and the Hydrological Impact Assessment.
- A site-specific Freshwater Pearl Mussel Impact Assessment has been appended to the grounds of appeal. This report supports the conclusion that the proposed development, either alone or in combination with other projects, will not adversely impact on the integrity of the Munster Blackwater SAC or its conservation objectives.
- The SWMP provides for appropriate mitigation and any potential residual water quality impacts will not be significant.
- The construction timeframes for the proposed wind farm are sufficient to avoid working in adverse weather conditions.
- The Freshwater Pearl Mussel Assessment (Appendix 5 of the grounds of appeal) concludes that the mitigation measures contained in the SWMP are sufficient to protect aquatic species such as salmon and trout and are more than sufficient to protect the nearest population of freshwater pearl mussel which occurs c. 2.6km downstream of the site boundary. Distance and water dilution will provide for further protection of this mussel population.
- The SWMP will prevent significant water quality impacts and has been employed on numerous wind farms across the country. The Freshwater Pearl Mussel population in the Munster Blackwater will not be significantly impacted by the proposed development.
- In response to the concerns expressed by the Department of Arts, Heritage and the Gaeltacht in relation to how siltation from the fast flowing Carhoonoe Stream will be avoided during the construction of the access track to Turbine No. T9, the peat will be excavated close to the stream edge where the base or foundations of a clear span bridge will be located (thereby avoiding in-stream works). Silt fences will be installed at the stream edge. The works can also be scheduled to occur in dry weather only and can be undertaken quickly thereby minimising the exposure time

to excavated areas. The road will be capped as soon as possible in a hard-wearing capping layer that resists breakdown.

- The aforementioned water crossing will be guided by the *'Guidelines on Protection of Fisheries During Construction Works in and adjacent to Waters, 2016'.* A detailed method statement, including a programme for water quality monitoring, will be developed in partnership with Inland Fisheries Ireland, and no works will take place until agreement is reached with all stakeholders and supervision, as appropriate, of the works by IFI is scheduled into the programme for construction.
- The proposed SWMP adheres to the recommendations of the IFI Guidelines. Clear span bridges will be used at new crossings to avoid in-stream works in order to maintain the integrity of the stream and to eliminate any risk of siltation. Works in proximity to the stream crossings will be undertaken in dry weather and are estimated to last no longer than one day. Furthermore, as part of ongoing environment surveys at the site, a comprehensive hydrochemistry baseline water quality sampling programme has been undertaken and this will be repeated post-construction and used for comparison against water quality monitoring undertaken during construction.
- The developer commits to the installation of continuous turbidity monitors both upstream and downstream of the site in the River Blackwater. These can relay real time information to the Ecological Clerk of Works (or nominated personnel) and can trigger an alarm if limit values are being approached.
- The developer is amenable to the omission of Turbine Nos. T8 & T9 in order to address any perceived risk to the Hen Harrier. The omission of Turbine No. T9 and its access track would also address any perceived water quality risk to the Carhoonoe Stream in this area from these development works.
- The Natura Impact Statement has concluded that the proposed development will not have an adverse impact on the integrity of the Stacks

to Mullaghareirk, West Limerick Hills and Mount Eagle Special Protection Area.

- Turbine Nos. T8 & T9 are located at the north-eastern end of Barna Bog, 300m and 650m south of the edge of the SPA respectively.
- Breeding bird surveys conducted in 2016 & 2017 have confirmed the presence of one pair of Hen Harriers at Barna Bog outside of the application site and c. 700m from the nearest proposed turbine. These surveys did not record any hen harrier territorial behaviour elsewhere within the 2km hinterland of the proposed development, including that area within the SPA.
- The NIS has concluded that the proposed development will not result in significant displacement, disturbance or collision risk of foraging or breeding hen harriers within the Stacks to Mullaghareirk, West Limerick Hills and Mount Eagle Special Protection Area.
- Whilst it is acknowledged that the overall Barna Bog site is of value to breeding hen harrier, given that there is no recorded breeding within 2km of the nearest turbine within the SPA, and as Barna Bog is outside of, and extending away from, the SPA boundary for several kilometres, it is predicted that the project will not have any adverse impact on the integrity of the SPA.
- In the event that the Board deems it necessary to alleviate any perceived risk to the SPA, the applicant is amenable to the omission of Turbine Nos. T8 & T9.
- Both the short-eared owl and the barn owl were considered in the ornithological impact assessment undertaken for the proposed wind farm. This report concluded that the project would not have any significant impact on either species.
- No breeding or territorial behaviour was recorded during the short-eared owl sightings in the breeding season.
- Monitoring in the UK has indicated that there is no evidence that wind turbines have a significant impact on barn owls. Furthermore, barn owls

have been recorded breeding successfully within 750m of a wind farm comprising 16 No. turbines.

- Based on the available information, the Barn Owl Trust has taken the view that the level of threat posed to barn owls by wind turbines in the UK is relatively low primarily due to their low flight pattern.
- In response to the concerns of the Roads Department of the Local Authority, the Board is advised that the proposed haul routes are described in Section 11.2.2 of the EIS whilst a figure detailing same has been appended to the grounds of appeal (Appendix 10).
- It is anticipated that the duration of the construction works will be approximately 18 No. months (the proposed ducting works will take c. 2 No. months).
- In the event of a grant of permission, a traffic management plan for the proposed ducting works will form part of the Construction and Environmental Management Plan.
- Additional supplementary bat surveys were undertaken in 2017 as part of ongoing environmental monitoring at the site, and these support the conclusion that the site is not important for bat species and that any potential for significant impact is low (please refer to Appendix 8 of the grounds of appeal).
- Baseline water sampling was undertaken on 8th June, 2017 at 11 No. selected locations draining the proposed wind farm in the Blackwater River catchment. This sampling is part of ongoing environmental studies at the site and the results can be used as part of the pre-construction baseline should the development be granted permission. The results and an analysis of same can be read in Appendix 7 of the grounds of appeal.
- Appendix 9 of the grounds of appeal includes letters of support from landowners with a financial interest in the project.
- The grounds of appeal have been accompanied by a copy of the Community Engagement Report prepared by the applicant in line with the

'Code of Practice for Wind Energy Development in Ireland – Guidelines for Community Engagement'.

- The archaeological and cultural heritage of the site will not be adversely impacted and there are no impacts on any archaeological features or national monuments.

7.2. **Planning Authority Response**

None.

7.3. **Observations**

7.3.1. A total of 28 No. observations have been received from interested parties and the principle contents of same can be summarised as follows:

- The proposal will be visually obtrusive and will have a negative impact on the scenic amenity, landscape character, and tourism / recreational use of this remote upland area.
- The proposed development will have a detrimental impact on residential amenity and quality of life in the area by reason of shadow flicker, noise (including low frequency noise / infrasound), loss of visual amenity, proximity to housing, devaluation of property, and disruption during the construction works.
- The planning application does not accurately detail the location of all housing in the surrounding area.
- There are serious concerns with regard to the potential health implications of the proposed wind turbines, with particular reference to noise, sleep deprivation, migraines, and the possible impact on individuals with underlying health conditions, including autism.
- Concerns with regard to the potential impact of the development on agricultural and equine activities in the area, including the safety of riders and animals, and reputational damage etc.

- The proposal will have a significant detrimental impact on the surrounding rural area and its community, including the cultural heritage of Sliabh Luachra.
- There has been an unacceptable lack of consultation and communication with the local community.
- The applicant does not have full legal title over the site, with specific reference to the existence of third party turbury rights.
- The display of site notices was inadequate.
- The proposed development will contribute to a continuing trend of rural depopulation in the area.
- The surrounding substandard road network does not have the capacity to safely accommodate the construction traffic associated with the proposed development.
- The surrounding area is of particular ornithological significance and the proposed development will have a negative impact on same in addition to wider biodiversity and wildlife considerations which include various protected species such as otter, lamprey and freshwater pearl mussel.
- The information provided in the EIS is deficient, with particular reference to baseline surveys and the adequacy of the proposed mitigation measures and subsequent monitoring arrangements, and does not support the conclusion that the proposed development will not have a significant negative impact on the receiving environment.
- The proposed development site is adjacent to the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area and includes lands (part of Barna Bog) that support a nationally significant breeding and wintering population of hen harrier (a protected species listed in Annex I of the Birds Directive).
- Notwithstanding the site location outside of the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area, in the case of *Commission of the European Communities v. The French Republic (ECJ C-374/98)* it was held *'that areas which have not been classified as SPAs but should have been so classified continue to fall under*

the regime governed by the first sentence of Article 4(4) of the Birds Directive'.

- The Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area has seen a steep decline in its population of hen harrier in recent years and this is predicted to continue due to the extent and demography of forest maturation in the area. Therefore, areas such as Barna Bog will become increasingly important in terms of supporting hen harrier activity / populations.
- The submitted bird assessment is seriously flawed, with particular reference to inadequacies / inconsistencies in the survey methodologies, the lack of dedicated surveying for certain species, an absence of flight height data and collision risk modelling, and a failure to consider the cumulative impact with other wind farms in the area.
- The proposed development will result in a net loss of breeding and foraging habitat for hen harriers resulting in greater fragmentation of the existing habitat.
- The proposed development will have a detrimental impact on hen harrier (and other bird) populations by reason of displacement / nest failure and disturbance during both construction and operational phases.
- There are concerns with regard to the collision risk posed by the turbines and associated bird mortality rates.
- Barna Bog is an important roosting and nesting site for several protected bird species, including the Barn Owl, a red-listed species of conservation concern in Ireland. The proposed development will disrupt flight lines and result in the loss of valuable foraging and nesting habitat for Barn Owls.
- The proposed development may have a detrimental impact on other protected species in the area, including bats and otters (such as by way of displacement, loss of habitat, collision risk and water pollution).
- There are concerns with regard to the potential for the proposed development to give rise to landslides / peat slippage and the associated ecological, pollution and safety implications.

- Construction of the proposed development is likely to have a detrimental effect on water quality and the hydrological regime of the area with adverse downstream impacts on aquatic habitats etc., including within the Blackwater River (Cork / Waterford) Special Area of Conservation which supports a population of Freshwater Pearl Mussel.
- The planning and regulatory authorities have already failed to enforce the conditions attached to previous grants of permission issued for wind energy developments in the surrounding area.
- Inadequate consideration has been given to the cumulative impact of the proposal when taken in combination with other developments in the area, including existing and permitted wind farms, afforestation, peat-cutting etc.
- There are concerns with regard to the potential for the proposed works to facilitate the spread of invasive species such as Japanese Knotweed.
- The proposed wind farm has the potential to cause significant interference to telecommunications in the area.
- Concerns as regards the responsibility for any future decommissioning of the proposed turbines.
- Concerns with regard to the potential for the catastrophic failure of turbines e.g. turbine collapse or blade failure.

8.0 **Assessment**

8.1. From my reading of the file, inspection of the site and assessment of the relevant local, regional and national policies, I conclude that the key issues raised by the appeal are:

- The principle of the proposed development
- Environmental impact assessment
- Appropriate assessment
- Other issues

These are assessed as follows:

8.2. ***The Principle of the Proposed Development:***

8.2.1. The provisions of the Kerry County Development Plan, 2015 are generally in favour of the development of renewable energy, including wind energy, and acknowledge the economic and environmental benefits which can be derived from same. In this regard particular consideration should be given to the potential for the development of wind energy to aid in the achievement of Ireland's international, European and national commitments as regards the reduction of greenhouse gas emissions and the provision of energy from renewable sources. Moreover, Objective No. EP-11 of the Plan seeks to implement the Renewable Energy Strategy for County Kerry, 2012 (as adopted by the Council) which, having undertaken an appraisal of the county's renewable energy resources and infrastructural capacity, has established that the county has significant potential for the development of wind and bioenergy and, to a lesser extent, hydro power. In this regard I would further advise the Board that the Renewable Energy Strategy has advocated a plan-led approach with regard to the siting of wind energy developments in accordance with the recommendations of the *'Wind Energy Development, Guidelines for Planning Authorities'* and that, having studied various environmental, landscape, technical and economic criteria, including the wind speeds and the landscapes of the County on a broad level, it has identified, in broad strategic terms, three types of wind deployment zones / designations in relation to the development of wind energy projects i.e. *'Strategic Site Search Areas'*, *'Open to Consideration'* and '*Unsuitable'* areas (in addition to areas which currently lack grid infrastructure) as set out in Map 7.6 of the Strategy.

8.2.2. The proposed development site is located within an area *'Open to Consideration'* and, therefore, it is necessary to determine the subject application in accordance with the provisions of Objective Nos. NR 7-33 to NR 7-37 of the Renewable Energy Strategy. Notably, the Strategy also states that within these areas the identification of potentially suitable sites should have regard to wind energy capacity and the environmental and infrastructural capacity to support wind energy development whilst it is further acknowledged that there are limits to the capacity of these areas to accommodate wind energy development in addition to a need to monitor the cumulative impact of such development. In effect, the Strategy serves to identify those areas which are favoured (or not) for wind energy development based on a strategic and plan-led approach and that any proposal for such development within

an area '*Open to Consideration'* should be assessed on its merits having regard to its environmental, physical and visual impact. Therefore, I propose to assess the subject proposal from first principles in order to establish its wider impact and to determine whether or not the application site is an acceptable location for same.

8.2.3. At this point it is of further relevance to note that the adjacent lands to the east of the application site within Co. Cork are also designated as *'Open to Consideration'* for the development of wind energy in the Cork County Development Plan, 2014, with the exception of an intervening strip of land that broadly corresponds with the Blackwater River wherein such development is *'Normally Discouraged'*, whilst there are several existing (and permitted) wind energy developments in the wider area, including the Cordal and Scartaglen wind farms to the north and northwest respectively in addition to the turbines serving Munster Joinery at Lacka Crossroads, Co. Cork. Further credence is lent to the general suitability of the wider area for the development of wind energy given the available grid infrastructure and the proximity of a possible grid connection via the Ballynahulla 220kV substation, which is looped into the existing Clashavoon-Tarbert 220kV line and linked to the existing Glenlara 110kV station by a new 110kV overhead line (detailed as the Kishkeam 220/110kV project for the purposes of the Transmission Forecast Statement 2012-2018) and is intended to accommodate planned generation in the southwest.

8.3. ***Environmental Impact Assessment:***

8.4. *Outline of Process:*

8.4.1. In accordance with the requirements of Article 3 of the European Directive 85/337/EEC, as amended by Council Directives 97/11/EC and 2003/35/EC and Section 171A of the Planning & Development Act 2000, as amended, this process requires the Board, as the competent authority, to identify, describe and assess in an appropriate manner, in light of each individual case and in accordance with Articles 4 to 11 of the Environmental Impact Assessment Directive, the direct and indirect effects of the proposed development on the four indents listed in Article 3 of that Directive as set out below:

a) human beings, flora and fauna,

b) soil, water, air, climate and the landscape,

c) material assets and the cultural heritage, and

d) the interaction between the factors mentioned in paragraphs (a), (b) and (c).

8.4.2. This assessment also requires consideration to be given to, where relevant, the indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the proposal, including those which arise during the construction phase, which are essentially short-term and temporary, as distinct from the likely long-term effects arising from the operational phase.

8.4.3. The Environmental Impact Statement which has accompanied the subject application follows a grouped format structure with each environmental topic presented in a separate chapter. It includes a generally satisfactory description of the receiving environment, the proposed development, its impacts and proposed mitigation measures, and has been accompanied by a non-technical summary. In my opinion, this document can be described as 'adequate' in that it accords with the minimum requirements of Schedule 6 of the Planning and Development Regulations, 2001, as amended, and is sufficient to comply with Section 172 of the Planning and Development Act, 2000, as amended, and Article 94 of the Regulations.

8.4.4. In general, this part of my assessment of the subject application is informed by the contents and conclusions of the EIS and also by information provided during the various stages of the application / appeal process in relation to the likely effects of the development on the environment and its likely consequences for the proper planning and sustainable development of the area in which it is proposed to be situated. My assessment also has regard to potential mitigation measures, including those indicated in the EIS, and any others which might reasonably be incorporated into any decision to approve the development through the attachment of conditions.

8.5. *Consideration of Alternatives:*

8.5.1. Schedule 6 of the Planning and Development Regulations, 2001, as amended, requires an EIS to include *'An outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment'*. In this respect I would refer the Board to Chapter 3 of the EIS which states that a strategic constraints-led site search was undertaken from the outset having regard to certain key criteria that included the availability of suitable wind speeds, the avoidance of environmentally sensitive sites, the potential visual impact / landscape considerations, and the proximity of the

national grid network. It is further detailed that an initial site selection process identified a number of other potential development sites within Counties Cork and Kerry, although these were ultimately deemed unsuitable due to certain critical site selection criteria and other design constraints. For example, a potential site at Knockyhena, Co. Cork, was not deemed large enough to justify the grid connection costs whilst it was also not possible to acquire all the land leases required. Other possible sites within Co. Kerry were also eliminated on the basis of their locations relative to environmentally sensitive areas (including the Stacks to Mullaghareirk, West Limerick Hills and Mount Eagle Special Protection Area) and the proximity of nearby housing. Accordingly, the subject site was ultimately identified as the optimum location for the proposed development.

8.5.2. Section 3.4 of the EIS proceeds to detail that the overall design and layout of the proposed development was informed by an iterative process having regard to various environmental and technical constraints, such as the need to achieve buffers and setback distances at the site, which actually resulted in the omission of 3 No. turbines from the original development layout due to the presence of a hen harrier roost site. Furthermore, whilst alternative turbine dimensions were considered, it has been submitted that the use of turbines with smaller overall dimensions would necessitate a greater number of machines in order to achieve the same capacity return thereby increasing the potential environmental impact of the proposal. Similarly, the case has been put forward that the use of an underground cabling connection avoids the visual impact which would typically be associated with any overhead connection.

8.5.3. At this point it is of relevance to note that the *'Guidelines on the information to be contained in Environmental Impact Statements'* published by the Environmental Protection Agency in March, 2002 acknowledge the existence of difficulties and limitations when considering alternatives in the context of Environmental Impact Assessment. In this respect it should be noted that whilst EIA is confined to the assessment of the environmental effects which influence the consideration of alternatives, it is important to acknowledge that other non-environmental factors may have equal or overriding importance to the developer such as project economics, land availability, engineering feasibility and planning considerations. Similarly, the consideration of alternatives also needs to be set within the parameters of the

availability of land or the need for the project to accommodate demands or opportunities which are site specific.

8.5.4. Having regard to the foregoing, and following a review of the available information, including the consideration of alternatives as set out in the EIS, in my opinion, the applicant has complied with the requirements of the Regulations insofar as it has provided a satisfactory examination of the main alternative locations studied with regard to the project in addition to a reasonable explanation for the selection of the subject lands.

8.6. *Human Beings:*

8.6.1. In terms of assessing the potential impact of the proposed development on human beings I would, in the first instance, refer the Board to Chapter 4 of the submitted EIS which focuses attention on population and settlement, employment, impacts on land use and forestry, tourism and amenities, health and safety, and other socio-economic considerations.

8.6.2. Whilst I would generally concur with the findings of the EIS as regards the likely impact of the proposed development on the foregoing aspects of human beings, it is of relevance to note that there are various inter-relationships between effects on the human environment and effects on other aspects of the environment such as air and water quality. Accordingly, in order to avoid unnecessary repetition, I would refer the Board to my assessment of the specific implications of the proposal as regards soil, water and air quality etc. as set out elsewhere in this report. Furthermore, although referenced in separate chapters of the EIS, I propose to focus the remainder of my assessment of the impact of the proposed development on human beings on the key issues of noise, shadow flicker and traffic.

8.6.3. *Noise*:

8.6.4. In assessing the impact of noise levels arising as a result of the proposed development I would refer the Board in the first instance to Chapter 9 of the Environmental Impact Statement which details the results of noise monitoring surveys carried out at identified Noise Sensitive Locations in the vicinity of the proposed development site. In this respect it should be noted that whilst there are multiple individual properties / dwelling houses with the potential to be impacted by the proposed development within the surrounds of the application site, noise

monitoring has been undertaken at a total of 11 No. locations drawn from these properties in order to establish baseline noise conditions (please refer to Figure 9-1 of the EIS). Having reviewed the positions of these Noise Monitoring Locations, I am generally satisfied that they are reasonably representative of those groupings of properties likely be impacted by noise emissions associated with the proposed development.

8.6.5. Table Nos. 9-5 & 9-6 of the EIS detail the results of the noise monitoring as regards prevailing baseline noise levels at the 11 No. NMLs at wind speeds of between 3m/s and 12m/s during both daytime and night-time periods. These results have been derived using regression analysis in order to establish the background noise levels and whilst it is regrettable that no details have been provided of the relevant height above ground level, I note that Section 9.1.2.1 of the EIS states that the noise assessment has been undertaken with due cognisance of ETSU-R-97 *('The Assessment and Rating of Noise from Wind Farms',* UK Dept. of Trade and Industry, 1996') and thus it would seem reasonable to assume that the results pertain to a height of 10m above ground level in line with the recommendations of that document. Notably, the background noise levels have also been determined using the LA_{90} criterion as specified in the *'Wind Energy Development, Guidelines for Planning Authorities'* published by the Department of the Environment, Heritage and Local Government in 2006 with the 'A' suffix denoting the fact that the sound levels have been 'A-weighted' in order to account for the non-linear nature of human hearing.

8.6.6. At this point it should be noted that the *'Wind Energy Development, Guidelines for Planning Authorities'* state that in general a lower fixed limit of 45dB(A) or a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours, however, in low noise environments where background noise is less than 30dB(A), it is recommended that the daytime level of the $LA90_{10min}$ of the wind energy development noise be limited to an absolute level within the range of 35-40dB(A). The Guidelines also advise that separate noise limits should apply for day-time and night-time and that a fixed limit of 43dB(A) will protect sleep inside properties during the night. Furthermore, it is stated that noise arising from wind turbines is typically unlikely to be a significant problem where the distance from the

nearest turbine to any noise sensitive property such as a dwelling house is more than 500m.

8.6.7. In my opinion, the prevailing noise climate in the vicinity of the application site is typical of a rural environment and in some areas is influenced by traffic movements along local roads and various farming / forestry activities. Indeed, in most rural areas the background noise environment is primarily influenced by the interaction of wind on items of foliage / vegetation with the result that the greater the wind speed the higher the noise level generated. This would seem to find support in Table Nos. 9-5 & 9-6 of the EIS where it is apparent that the background noise environment is inherently linked to wind speed. From a review of these baseline conditions, it would appear that in the majority of cases the use of a lower fixed daytime limit of 45dB(A) or a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations would be appropriate, however, it is noteworthy that in several instances the background noise levels recorded at NML Nos. N1, N3, N5 & N7 at lower wind speeds were less than 30dB(A) and thus would correspond to the definition of a *'low noise environment*' as per the *'Wind Energy Development, Guidelines for Planning Authorities'*. At this point I would reiterate to the Board that the Guidelines recommend that the daytime level of the $LA90_{10min}$ for wind energy development noise be limited to an absolute level within the range of 35-40dB(A) at those locations when the prevailing background conditions could be considered as constituting a 'low noise environment'.

8.6.8. On the basis that the monitoring of background noise levels has established that NML Nos. N1, N3, N5 & N7 comprise a 'low noise environment' (at lower wind speeds) as per the Guidelines, in my opinion, regard should be had to Paragraph 3.2.2 of *'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'* as published by the Institute of Acoustics in 2013 which references the following criteria set out in ETSU-R-97 to be considered when fixing a limit within the range of 35 dB to 40dBLA90 during periods of quiet:

i) the number of noise-affected properties;

ii) the potential impact on the power output of the wind farm; and

iii) the likely duration and level of exposure.

8.6.9. In assessing the subject proposal against the foregoing criteria, in the first instance I would advise the Board that whilst there are several dwelling houses within the vicinity of NML Nos. N1, N3, N5 & N7 which could potentially be categorised as experiencing a *'low noise environment'* at low wind speeds and thus could possibly be affected by turbine noise in certain conditions, I am inclined to suggest that the actual number properties involved is likely to be relatively limited when taken in context. Indeed, it is of relevance to note that the NSLs in question were selected on the basis that they were representative of the property closest to the nearest turbine whereas other units within that particular cluster of housing would typically benefit from a greater separation distance from the development. With regard to the second criterion, the magnitude of any impact arising from the omission or de-rating of those turbines in the vicinity of these receptors on the overall power output of the wind farm is unclear and whilst any such impact may be perceived as low by the occupants of nearby properties this is not to say that the applicant would not object to same. In relation to the likely duration and level of exposure, it is of relevance to note that the NSLs in question only experience background noise levels of less than 30dB(A) at wind speeds of 4m/s or less, although I would acknowledge that the anticipated cut-in speed of the prospective turbines is likely to be 3-m/s.

8.6.10. Following a review of previous Board decisions as regards proposals for wind energy development, and having considered the foregoing criteria as per ETSU-R-97, including the limited instances at individual properties when background noise levels at wind speeds in excess of the (likely) cut-in speed of the proposed turbines would be such as to correspond with the definition of a *'low noise environment'* set out in the Guidelines, I am amenable to the adoption of a fixed limit of 40dB(A) as proposed by the applicant as such a provision would seem to adhere to current guidance.

8.6.11. Table Nos. 9-5 & 9-6 proceed to set out the proposed noise limits which are to be applied at the various representative noise monitoring locations at different wind speeds and whilst I would generally concur with the contents of same, I would have some reservations as regards those instances when it is proposed to exceed the fixed limit of 43dB(A) recommended by the Guidelines during night-time hours despite the background noise levels at those locations at higher wind speeds not exceeding 43dB(A).

8.6.12. Having established the baseline noise environment and the appropriate noise limits to be applied at the various NSLs, it is necessary to identify the various noise sources associated with the proposed development in an effort to predict whether or not the operation of the proposed turbines would result in any increase in background noise levels. In this respect it should be noted that in order to determine the likely operational impact of the proposed development on the receiving noise environment the applicant has utilised noise prediction modelling in accordance with *ISO9613-2 – Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation (ISO9613 2:1996)* as a means of predicting the noise impact of the turbines. This was used to calculate the predicted noise levels at varying wind speeds for a representative wind turbine (i.e. the Nordex N117 3MW with a hub height of 91m). Notably, from a review of the various input parameters used in the modelling as set out in the EIS, the methodology would seem to accord with the recommendations of *'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'* as published by the Institute of Acoustics in 2013. For example, a ground factor of G=0.5 was utilised, a receiver height of 4.0m was adopted, and atmospheric conditions of 10^{o}C and 70% humidity assumed, in order to represent a reasonably low level of air absorption. Therefore, in the absence of any evidence to the contrary, it would appear that the noise prediction modelling undertaken by the applicant in this instance accords with accepted best practice.

8.6.13. The output from the modelling of the proposed development is shown in Table No. 9-7 of the EIS for each of the NSLs and it would appear that the maximum predicted noise level in the 'worst-case' scenario as modelled would be 43dBA and would occur at NSL No. N5 at wind speeds in excess of 8m/s. Therefore, the modelling for the 11 No. NSLs within the study area would seem to confirm that in a worst-case scenario the maximum predicted noise output from the proposed development (when acting in isolation) would not breach the (fixed) night-time noise limit of 43dB(A) as per the Guidelines. In relation to compliance with those instances when a lower noise limit of 40dB(A) is to be applied in respect of *'low noise environments'*, the results of the noise prediction modelling would also seem to confirm that the emissions from the candidate turbine will not exceed the aforementioned limit.

8.6.14. With regard to the potential noise impact of the proposed substations, Section 9.3.2 of the EIS refers to the southernmost substation which is located c.180m from a landowner's house and states that a noise level of 60dB(A) was measured at a distance of 5m from a representative substation which would equate to a worst-case scenario of 30dB at 180m. It is further stated that this is unlikely to be audible above existing background noise levels and is below the typical night-time noise limit criteria even with a +5dB(A) penalty for the tonal nature of the sound from the transformer. In my opinion, the foregoing conclusions are reasonable and I note that there is a greater separation distance between the more northerly substation and surrounding housing.

8.6.15. In terms of the potential cumulative noise impact of the proposed development when taken in conjunction with the other wind energy developments in the wider area, the applicant has specifically referenced the permitted (Scartaglen) development of 15 No. turbines under construction to the west of the application site and the 2 No. existing turbines operating at the Munster Joinery facility c. 2km east of the site. With regard to all other wind farms in the area (whether existing or permitted and yet to be constructed), it has been submitted that these were assessed and determined to have no additional impact (presumably in light of the separation distances involved). Having conducted a site inspection, and following a review of the available information, including the separation distances between the subject site and those other wind energy developments in the wider area such as the Cordal Wind Farm, I would concur with the applicant's conclusions as regards the need to consider the potential for cumulative impacts with the Scartaglen and Munster Joinery wind turbines.

8.6.16. The additional noise prediction modelling undertaken by the applicant as regards potential cumulative impacts is stated as having considered the loudest noise emission wind speed for each turbine in order to present a worst-case scenario and in this regard I would refer the Board to Table 9-9 & 9-10 and Figure 9-3 of the EIS. The submitted results would seem to indicate that the cumulative daytime noise emissions will not exceed the applicable noise limit value for wind speeds of between 8m/s and 12m/s, although it is perhaps regrettable that no details have been provided of possible cumulative impacts at lower wind speeds, particularly in those instances of a *'low noise environment'*. With regard to cumulative night-time noise

emissions, the modelling has predicted a single instance of the applicable noise limit being exceeded at NSL No. N5 at 8m/s under downwind conditions by 1dB. (i.e. 44dB compared to a limit of 43dB). In response to this exceedance the applicant has asserted that by operating Turbine No. 5 in a -2dB noise reduced mode under downwind conditions at 8m/s, it will be possible to achieve the relevant noise limit, although it has also been submitted that the consent of the affected landowner in this instance can also be provided. It has been further stated that the predicted noise values are based on a worst-case scenario and include a safety margin of 2dB with the result that noise levels will, in reality, likely be lower than those presented.

8.6.17. On the basis of the foregoing, it would seem that the applicant has undertaken sufficient monitoring at representative locations in the vicinity of the site to establish the prevailing background noise environment thereby allowing the determination of appropriate noise limit values at said locations pursuant to the recommendations of the *'Wind Energy Development, Guidelines for Planning Authorities, 2006'*. Furthermore, on the basis of the submitted information, and noting the separation distances between the proposed turbines and nearby occupied NSLs (within 1 km of the proposed turbines), it would appear that the predicted noise levels during the operational phase of the development will be below the applicable noise limits, save for one instance when the recommended fixed (night-time) noise level of 43d(B)A will be exceeded and thus it will be necessary to mitigate the impact of same through the de-rating of the relevant turbines or perhaps through the programming of some turbines to have a higher cut-in wind speed and / or reduced output at lower wind speeds to reduce potential noise levels.

8.6.18. On balance, having regard to the foregoing, and noting the mitigation measures outlined in Section 9.4 of the EIS (including the noise reduction / de-rating of Turbine No. 5 and the proposal for the elimination any nuisance attributable to amplitude modulation), I am inclined to suggest that any impacts arising on the residential amenity of affected properties during the operational phase of the proposed wind farm can be satisfactorily mitigated and addressed by way of condition.

8.6.19. In relation to the predicted noise impact during the construction of the proposed development, it must be acknowledged that due to the nature of the construction activity to be conducted on site there is an inherent potential for the generation of increased levels of noise. Similarly, the flow of traffic transporting material to and

from the site is also likely to be a potential source of increased noise. In this respect the applicant has submitted that noise prediction modelling for the likely construction equipment required has established that the construction noise limit of 65dB(A) set out in *BS5228: Part 1: 2009* will not be exceeded beyond 320m of the relevant works area.

8.6.20. With regard to the proposed borrow pits, the EIS has acknowledged that Borrow Pit No. 2 is located c. 270m from the nearest dwelling house and that noise levels at that receptor may exceed 65dB(A) when the rock breaker is in operation. Accordingly, it is proposed to mitigate this impact by keeping any use of the rock breaker to a minimum and to use the working face of the pit as a barrier to noise propagation towards the dwelling. The separation distances from the remaining borrow pits would appear to be such as to ensure that the recommended construction noise limits at nearby receptors will not be exceeded.

8.6.21. In reference to the cabling works along the public road and the proposed junction modifications, it has been suggested that these works will involve limited plant and will be of a limited duration. I would also submit that the progressive nature of the cabling works along the road network will avoid undue prolonged disruption at any given location / receptor.

8.6.22. With respect to the potential impact of noise attributable to construction traffic, the EIS has chosen to focus on those periods of intense activity associated with the pouring of the concrete for the turbine bases as this will give rise to particular concentrations of construction traffic. During these periods it has been accepted the predicted noise level (67dBA) will exceed the recommended limit, however, in my opinion, the noise impact of these activities will be somewhat limited given that they will probably only occur on the days of the base pours (i.e. 14 No. days) over an estimated construction period of 24 No. months.

8.6.23. In my opinion, the proposal by the applicant to mitigate the impact of construction noise through adherence to best practice in the form of BS5228: Part 1: 2009 is reasonable. In addition, I would further suggest that, in the event of a grant of permission, a condition should be imposed whereby a Construction Method Statement / Management Plan is to be agreed with the Planning Authority prior to the commencement of development. This Plan should detail the various means of

reducing noise impacts during the construction period and I would envisage that any such document should include mitigation measures such as the use of mobile machinery with an inherently low potential for noise generation fitted with effective well-maintained silencers and the restriction of construction activity to day-time hours in order to minimise any noise impact arising during unsociable hours. Therefore, considering that the construction works will be temporary in nature, I am satisfied that the short-term noise impact arising from same can be satisfactorily mitigated by way of condition and adherence to best practice site management so as to avoid any undue impact on the amenities of nearby dwelling houses.

8.6.24. Shadow Flicker:

8.6.25. The effect known as shadow flicker occurs when the blades of a wind turbine cast a shadow over a window in a nearby house and the rotation of the blades causes the shadow to flick on and off. This effect lasts only for a short period and happens only during a specific set of combined circumstances such as when the sun is shining at a low angle, the turbine is directly between the sun and the affected property, and there is enough wind energy to ensure that the turbine blades are rotating.

8.6.26. Section 5.12 of the *'Wind Energy Development, Guidelines for Planning Authorities'* states that shadow flicker at neighbouring dwellings within 500m of proposed turbines should not exceed 30 hours per year or 30 minutes per day and that at distances greater than 10 No. rotor diameters from a turbine the potential for shadow flicker is very low. In this respect I would refer the Board to Chapter 13 of the EIS which details how computer modelling (WindFarm) was utilised to predict the occurrence of shadow flicker at a total of 142 No. identified receptors within a potential zone of influence of 1.2km from each turbine (i.e. 10 No. x 120m max. rotor diameter).

8.6.27. In order to provide for a comprehensive analysis of the extent of shadow flicker consequent on the proposed development, and pending the selection of a final turbine type, the submitted impact assessment has been based on a maximum rotor diameter of 120m and a hub height of 90m.

8.6.28. From a review of Table 13.2 it is evident from the calculations that a total of 112 No. of the identified receptors will be subjected to some degree of shadow flicker, although only 86 No. of these properties will experience in excess of the

recommended daily limit of 30 minutes of shadow flicker per day in a 'worst-case' (unadjusted) scenario. However, it has also been submitted that when account is taken of historic meteorological data (i.e. that the sunshine conditions for shadow flicker to occur are present on average for 27% of the daylight hours' time), and the modelling results adjusted / corrected for same, none of the identified receptors will be subjected to in excess of 30 minutes of shadow flicker per day in a 'realistic' scenario. With regard to annual shadow flicker, Table 13.2 lists both the *'Total hours of shadow flicker per year (worst case)'* and *'Corrected total hours of shadow flicker per year (realistic)'* (*N.B*. assuming 27% average sunshine) and in this respect it has been calculated that 83 No. of the identified properties will experience in excess of 30 No. shadow hours per year in a 'worst-case' scenario, although only 15 No. of these properties will exceed the recommended guideline limit of 30 No. hours having regard to the 'corrected' realistic predicted number of shadow hours per year (when adjusted to take account of average sunshine hours due to cloud cover).

8.6.29. At this point of my assessment I propose to consider the difference between *'expected'* and *'worst-case'* shadow hours per year as it is not entirely clear from current guidance whether the recommended limits relate to the outputs directly arising from the modelling process (i.e. potential *'worst-case'* shadow flicker) or whether they are intended to apply to the *'expected / corrected'* predictions when adjusted to take account of the prevailing meteorological conditions. This is of relevance as there are potentially 86 No. receptors which could receive in excess of the recommended daily limit of 30 minutes of shadow flicker per day in a 'worst case' scenario whilst 83 No. properties could experience in excess of 30 shadow hours per year in a similar 'worst-case' scenario.

8.6.30. The shadow flicker limits as set out in the current *'Wind Energy Development, Guidelines for Planning Authorities'* have been derived from the document *'Spatial Planning of Wind Turbines, Guidelines & Comparison of European Experiences'* (2004) prepared by Predac, a European Union sponsored organisation promoting best practice in energy use and supply which draws on experience from Belgium, Denmark, France, the Netherlands and Germany, which recommends that at neighbouring dwellings and offices flickering shadows should not exceed 30 hours per year or 30 minutes per day with normal variation in wind directions and a clear sky. This is reiterated in the *'Update of UK Shadow Flicker Evidence Base, Final*

Report, 2011' prepared by Parsons Brinckerhoff for the UK Department of Energy and Climate Change which confirms that the Predac report recommends that shadow flicker should not exceed an astronomic worst case figure of 30 hours per year or 30 minutes per day at neighbouring offices and dwellings. Therefore, whilst I would acknowledge that there is perhaps a need to address both 'worst-case' and realistic shadow flicker in assessments, it would seem that contrary to accepted practice in some quarters, the limits recommended in current national guidance are intended to apply to the 'worst case' scenario in the absence of any adjustment or reduction for climatic factors. Accordingly, without mitigation it is apparent that predicted shadow flicker will exceed the maximum permissible at a total of 86 No. receptors.

8.6.31. In relation to the 'worst-case' shadow flicker predictions, whilst I would acknowledge that these results represent a theoretical maximum and do not take account of a variety of considerations, including the absence of any windows on affected house / property elevations, the possible non-occupation of affected rooms, the use of blinds in windows, or the presence of intervening features such as vegetation, in my opinion, a reliance on the use of such factors, several of which would be outside of the applicants control, is not conducive to a robust form of mitigation against the impacts of shadow flicker.

8.6.32. Therefore, having established that the levels of shadow casting (either per day or per year) at a combined total of 86 No. identified receptors will exceed the recommended limits, it is necessary to review the options for the elimination or mitigation of said impacts.

8.6.33. In this respect, I would suggest in the first instance that it would be preferable to consider mitigation by avoidance through the omission of those turbines which contribute to the excessive levels of shadow flicker, however, it would seem that no consideration was given to this option by the applicant and, therefore, I would refer the Board to Section 13.4 of the EIS which details that the applicant intends to mitigate the predicted impact of shadow flicker through alternative means. In this respect it is proposed to utilise 'Shadow Flicker Control Measures' in order to completely avoid the occurrence of shadow flicker at any identified property in the vicinity of the development site (thereby avoiding any residual impact) which

essentially involves the pre-programming of selected turbines to prevent their operation on the dates and times when shadow flicker could cause a nuisance.

8.6.34. Having considered the foregoing, I would reiterate that a reliance on the mitigation of shadow flicker impacts through measures such as the possible non-occupation of affected rooms, the use of blinds in windows, or the presence of intervening features such as vegetation, several of which would be outside of the applicants control, are not conducive to a robust form of mitigation against the impacts of shadow flicker. Accordingly, I would suggest that in order to ensure that any instances of shadow flicker are within the recommended limits set by Department Guidelines thereby preserving the residential amenity of surrounding properties, a condition should be imposed in any decision to grant permission whereby shadow flicker arising from the proposed development should not exceed 30 minutes in any day or 30 hours in any year at any dwelling whilst all the relevant turbines as derived from the computer modelling should be fitted with appropriate equipment and software to control shadow flicker at nearby receptors. In addition, provision should be included for the implementation of a wind farm shadow flicker monitoring programme, the details of which, including the proposed monitoring equipment, the methodology to be used and a reporting schedule, should be agreed with the Planning Authority.

8.6.35. In terms of the potential cumulative impact of the proposed development when taken in conjunction with other wind farms in the wider area, I note the applicant's assertion that if any occurrence of shadow flicker is eliminated by way of mitigation as part of the subject proposal then there can be no potential for any cumulative impact when taken in combination with other wind energy developments in the surrounding area in terms of the levels of shadow flicker experienced at nearby receptors.

8.6.36. At this point I would advise the Board that at the time of writing the Department of the Environment, Community and Local Government has published *'Proposed Revisions to Wind Energy Development Guidelines, 2006 – Targeted Review in relation to Noise, Proximity and Shadow Flicker'* and that these seek to impose a significantly more onerous standard with regard to the control of shadow flicker than the present guidelines given that they require no shadow flicker at any existing dwelling or other affected property within 10 No. rotor diameters of any wind turbine. In this respect it should be noted that the revisions seek the cessation of the use of maximum limits for shadow hours and place a greater emphasis on the need to review the site

design in the first instance which may involve the relocation of turbines to explore the possibility of eliminating or substantially reducing the occurrence of shadow flicker. Following such a review, if shadow flicker is not eliminated for any dwelling or other potentially affected property, the proposed revisions state that the measures which provide for the turbine to be shut down to eliminate shadow flicker are to be clearly specified.

8.6.37. Whilst the subject proposal will adhere to the current requirements of the *'Wind Energy Development, Guidelines for Planning Authorities'* as regards the control of shadow flicker provided that appropriate mitigation and monitoring measures are out in place (in the event of a grant of permission), I would advise the Board that it would be prudent to review the status of the proposed revisions to this guidance prior to any decision being made on the application in order to allow any changes to same to be given due consideration as part of the assessment process.

8.6.38. *Traffic*:

8.6.39. The principle impacts in terms of traffic will arise during the construction of the proposed development and, in particular, during the transportation of the turbines themselves to the site along the surrounding road network, however, it should be noted that these impacts will be of an interim and temporary nature. In this respect I would refer the Board to Section 4.2.5 & Chapter 11 of the EIS which details the route option considered as part of the development proposal. This states that the point of arrival for the importation of the turbine components will be Foynes Port (unless otherwise agreed) with delivery via the National Primary Road network to Castleisland and then along Local Road No. L-2032 via Cordal Village to Knocknaboul Cross with subsequent access to the northern and southern parts of the wider site obtained via a series of minor roadways extending from Local Road No. L-2032 (an alternative route may also be available via the R577 Regional Road from Castleisland as far as Knocknaboul Cross) (*N.B*. A further entrance will be utilised from the R577 Regional Road in order to access the temporary construction compound and Borrow Pit No. 3). The various access points together with the local public road network in the vicinity of the site are detailed in Figure 11.1 of the EIS.

8.6.40. The assessment of the turbine component transportation route in the EIS is generally limited to that part of the overall route within the immediate vicinity of the site,

however, given the prevalence of wind turbines within the wider area and beyond (e.g. the Cordal, Scartaglen & Munster Joinery wind energy developments), I would accept that the national road network has previously catered for the successful transportation of similarly sized turbine components from a variety of sea ports without undue delay or traffic impact and thus I am amenable to restricting the assessment of the final haul route to that section which extends beyond the national road. Indeed, I would suggest that it is only after the haul route turns off the national road network that there is an increased likelihood of difficulties being encountered such as along narrower and increasingly poorly aligned stretches of regional and local roads (*N.B*. Appendix 10 of the grounds of appeal shows the entirety of the proposed haul route).

8.6.41. Section 11.2.2 of the EIS proceeds to reference certain locations between the various site entrances and Newmarket Crossroads (Local Road L-2032) where it will be necessary to undertake certain upgrading / road improvement works in order to facilitate turbine delivery vehicles, although it is perhaps regrettable that a sweep-path analysis of these locations has not been provided. In any event I would advise the Board that the applicant has secured the necessary agreement of the relevant landowners at each of the identified locations to facilitate any modifications that may extend into third party lands. Whilst the location of most of these works is discernible from the submitted plans and particulars (including the site layout plans), the extent of the vertical alignment works required along Local Road No. L-2032 between Newmarket Crossroads and the site is somewhat unclear, although I would suggest that this may only involve works within the carriageway of the existing public road and that such matters could be agreed with the Planning Authority in advance of the commencement of development.

8.6.42. In addition to the foregoing, I would suggest that it would be prudent to undertake a detailed road condition survey along the agreed haul route prior to the commencement of development in order to re-assess the condition of the route (in light of the potential for delay between any grant of permission and the commencement of construction works) and to identify any defects or damage to the existing road surface and the precise areas where road widening or strengthening may be required. This survey should also be used to check the condition of any culverts and bridges along the proposed route. Furthermore, upon completion of

road deliveries and site works a further road survey should be carried out to determine by comparison any damage caused by delivery traffic to the wind farm site with any remedial works required to repair same to be agreed with the Local Authority. In this respect I would also suggest that the applicant should enter into a bond as security to ensure compliance with planning conditions and to cover the maintenance of access roads and the satisfactory reinstatement of any public roads which may be damaged by the transport of materials to the site.

8.6.43. Having reviewed the submitted details, I am generally satisfied that the applicant has adequately established the overall feasibility of the haul route proposed whilst the presence of a number of wind energy developments in the wider area would suggest that the surrounding road network is capable of accommodating the likely traffic movements associated with the proposed development. Indeed, it would be prudent for delivery traffic associated with the subject proposal to utilise the same haul route as that utilised during the construction of other wind farms in the area, however, I would suggest that the selection of the final haul route can be best addressed by way of condition in order to permit the review of same closer to the time of construction in conjunction with Kerry County Council thereby providing for the least amount of disruption as possible.

8.6.44. With regard to the wider traffic impact arising during construction of the proposed development, Chapter 11 of the EIS includes a reasonable analysis of the estimated volume of construction traffic and I would suggest that the implementation of a Traffic Management Plan to be agreed with the Planning Authority prior to the commencement of development will serve to mitigate the impact of these traffic movements on the surrounding road network

8.6.45. Furthermore, whilst there will clearly be some degree of nuisance and disruption to local residents and road users associated with the laying of cabling along the public road network in the vicinity of the site, this will be of a limited duration and can also be mitigated through the implementation of an appropriate programme of traffic management which will provide for suitable alternative routes in the event of road closures and minimal delays in passing through any ‘Stop and Go’ systems in place alongside areas of active construction works. It should also be noted that the overall impact of construction traffic may be lessened further in the event that cable laying

works are undertaken simultaneously at various locations along sections of the proposed route.

8.6.46. On balance, whilst it is apparent that the construction of the proposed development will have a noticeable impact on traffic movements on the surrounding road network, I am generally satisfied that these impacts can be mitigated to within acceptable limits by reference to the measures set out in Section 11.2.3 of the EIS and by way of further conditions as required.

8.6.47. In respect of the on-going operation and maintenance of the proposed turbines, I would anticipate that the traffic levels associated with same would be very low and unlikely to have any significant impact on the surrounding road network.

8.7. *Fauna and Flora:*

8.7.1. In the first instance, and in order to avoid unnecessary repetition, I would advise the Board that the proposed development site is not subject to any National or European designation and that my assessment of the impact of the proposed development on the qualifying interests of Natura 2000 sites in the surrounding area pursuant to Article 6 of the Habitats Directive, is set out elsewhere in this report under the section entitled *'Appropriate Assessment'.* Accordingly, I propose to focus the following aspect of my assessment on the broader environmental impact of the proposed development on ecological considerations (i.e. those aspects of flora and fauna which are not necessarily subject to a requirement for 'appropriate assessment').

(*N.B.* Chapter 5: *'Biodiversity'* of the EIS is based on a desk-top assessment of the available resources and various field surveys, with particular reference to the Ecological Impact Assessment, Ornithological Report and Natura Impact Statement contained in Appendices 5A, 5B & 5C respectively. Cognisance should also be taken of the additional supplementary information provided with the grounds of appeal, including the results of further hen harrier survey work and the 'Supplementary Freshwater Pearl Mussel Impact Assessment').

8.7.2. Habitats & Flora:

Habitats within the study area have been identified in accordance with the *'Guide to Habitats in Ireland' (Fossitt, 2000)* and in this respect it has been submitted that the application site is dominated by improved grassland, wet grassland and commercial

conifer plantations, although there is also a large tract of peatland habitat across the centre of the site which comprises both cutover bog and some relatively undisturbed areas of upland blanket bog and wet heath that loosely correspond with the following Annex I habitats i.e*. 'Blanket Bogs (if active)'* (Natura Code 2000 Code: 7130) and *'North Atlantic Wet Heath with Ercia tetralix'* (Natura 2000 Code: 4010). Other habitats present on site which are considered to be of a high ecological value in a local context include the network of *'Hedgerows (WL1)*' and *'Treelines (WL2)'* associated with the grassland habitats, the *'Eroding / Upland Rivers (FW1)'* characterised by a number of 1st order streams that rise within the site, and various incidences of '*Scrub (WS1)'* and *'Mixed Broadleaved / Conifer Woodland (WD2)',* although I am inclined to concur with the findings of the EIS that those habitats of most importance comprise the peatlands, the watercourses draining the site, and the treeline / hedgerow networks. No rare or protected plant species were recorded, although a number of non-native plant species were encountered within the study area (and within the application site to a lesser degree) including *Japanese Knotweed* and *Giant Rhubarb*.

With regard to the significance of the foregoing, it is of relevance to note that none of the habitats recorded on site are stated as corresponding to habitats listed within Annex I of the EU Habitats Directive. In this regard I would refer the Board to Table 5-2 of the EIS wherein it has been stated that the '*Cutover Bog (PB4)*' encountered on site is considered to have a poor association with EU Annex I habitat (*depressions on peat substrates of the Rhynchoporion*) due to the level of disturbance within same whilst the instances of *'Wet Heath'* on site are not of such quality as to correspond to the annexed habitat *'Atlantic Wet Heath'*. Similarly, those areas of *'Upland Blanket Bog (PB2)*' within the site boundary are not considered to be of sufficient quality as to correspond with Annex I habitat (*N.B.* Whilst the presence of cutover bog / blanket bog has been acknowledged at the locations proposed for Turbine Nos. T6, T7 & T9, it has been asserted that these habitats have been degraded as a result of historical peat extraction and / or the effects of commercial forestry and thus they do not warrant a higher importance). Accordingly, I am inclined to concur with the findings of Table 5-2 of the EIS that the aforementioned peatland habitats, in addition to those areas of *'Hedgerows (WL1)', 'Treelines (WL2)', 'Eroding / Upland Rivers (FW1)', 'Scrub (WS1)'* & *'Mixed*

Broadleaved / Conifer Woodland (WD2)', can reasonably be held to comprise habitats which are of a high ecological value in a local context only.

In terms of the likely impact of the proposed construction works on habitats on site, it is clear that any such works will invariably include the direct loss / disturbance of certain habitats and species from within the footprint of the proposed construction and in this respect it is of particular relevance to note that all of the proposed turbines, with the exception of Turbine Nos. T1, T10, T11 & T12, will be located in or adjacent to peat habitats where the impacts on cutover bog and / or wet heath, and upland blanket bog / cutover bog in the case of Turbine Nos. T6 & T7, have been evaluated as being *'Moderate, 'Negative'* & *'Long-Term'.* It should also be acknowledged that the proposed construction works could potentially impact on adjacent peatland habitats in the vicinity of same due to the presence of drains within those areas of cutover / blanket bog proposed for excavation. However, the applicant has sought to emphasise that the extent of the aforementioned impacts will be relatively limited in scope and will not result in the loss of the entirety of the identified peatland habitats, but rather a small fraction of same in the context of the area at large. Similarly, it has been submitted that the loss of hedgerows and drainage ditch habitats consequent on the proposed works will be limited in scope whilst the implementation of suitable construction methodologies etc. at river crossings (with particular reference to the crossing of the Carhoonoe Stream in the vicinity of Turbine No. T9) will serve to mitigate any potential impact on the *'Eroding / Upland Rivers (FW1)*' habitats.

In my opinion, given that the affected peatlands are not in pristine condition due to a combination of factors, including a history of peat extraction, and as the other habitats on site such as the conifer plantations are of a relatively low conservation value, the impact arising from the loss of these areas is not considered to be of significance in a wider context. Moreover, I would draw the Board's attention to the mitigation measures set out in Section 5.8.1.2 of the EIS (and the supporting documentation), including the micro-siting of turbines as necessary in order to avoid / minimise impacts on peat and semi-natural woodland / scrub habitats, the proposals / limitations as regards the storage and side-casting of excavated overburden and peat (including the peat management plan), and the re-planting works to be undertaken as part of a Habitat Management Plan, which will further serve to ensure

that the constructional impact of the proposed development on habitats and flora on site will be within acceptable limits.

On balance, whilst I would accept that the construction of the proposed development will inevitably impact to some degree on existing habitats and flora on site, it is my opinion that these impacts will be both limited in scope and extent and thus are not of such significance as to warrant a refusal of permission, subject to the implementation of suitable mitigation measures.

With regard to the operational phase of the proposed development, I would concur with the applicant that no potentially significant impacts on habitats or flora are likely to arise at this stage.

8.7.3. Natural Heritage Areas:

Having reviewed the available mapping, including the data maps from the website of the National Parks and Wildlife Service, it is apparent that whilst no part of the proposed development site has been designated as either a Natural Heritage Area or a proposed Natural Heritage Area, there are a number of such designations within a 15km radius of the subject site (please refer to 5.2.2 of the EIS). However, in light of the separation distances involved and, in several instances, the absence of any pathways such as hydrological connections between the application site and the identified receptors, I am satisfied that the proposed development is unlikely to give rise to any significant impact, both in isolation or in combination with other projects, on the integrity of the aforementioned sites of national ecological importance.

8.7.4. European Sites:

It has already been stated that my assessment of the impact of the subject works on the qualifying interests of Natura 2000 sites in the surrounding area pursuant to Article 6 of the Habitats Directive, is set out elsewhere in this report under the section entitled ‘Appropriate Assessment’, although regard should also be had to my assessment of potential impacts on avifauna and the downstream aquatic environment.

8.7.5. Fauna:

8.7.6. Non-Volant Mammals:

A combination of field surveys and desk-top research has established that a variety of non-volant mammals, including pine marten, otter, badger, red squirrel, Irish stoat, pygmy shrew, Irish hare and Sika deer, have either been recorded or are likely to occur within the study area, however, given the prevalence of sub-optimal habitats within both the study area and the application site, in addition to the absence of any non-volant mammal dwellings having been recorded during the course of field surveys, it has been asserted the study area is of no particular importance to non-volant mammals. For example, the applicant has submitted that the wet ground conditions prevalent on site would preclude most non-volant mammal species from rearing young whilst the extent of commercial forestry would only result in a marginal environment for foraging purposes. Similarly, although there were sightings of Irish Hare in open areas of wet heath in the townalnds of Tooreencahill / Tooreengarrive and at Tooreennamult / Knocvknageeha and Ballynahulla, it has been suggested that the rugged nature of the study site would only provide suboptimal conditions for hare. The limited suitability of the application site for non-volant mammals is further referenced by the absence of any evidence of badger activity within the confines of the site, although it is acknowledged that the area may be used for foraging whilst low levels of badger activity were recorded within the grassland habitat outside of the proposed development site. With regard to the watercourses on site, it has been submitted that whilst these are likely too small to be of significant value to otter, although they may be used as commuting routes. In this regard reference is made to the otter's preference for a larger fish diet (the streams in question would likely only support small stocks of juvenile salmon) and the greater feeding opportunities / foraging areas available downstream of the site within the main channels of the Blackwater and Quagmire Rivers.

Clearly, the proposed development will inevitably result in the loss of some individual examples of habitat and animal species from within the footprint of the proposed construction, whilst it also likely that the disturbance and fragmentation arising during the construction period may also indirectly impact on fauna using the site, however, given the absence of any statutory designations on site, the availability of other suitable / similar habitat in the wider area, and as the fauna present is typical of the

surrounding area, I would suggest that any such impacts will be of limited significance. Similarly, any disturbance of fauna arising during the construction phase is likely to be short-term given the temporary nature of the works.

Notably, in addition to the wider mitigation measures proposed during the course of the construction works, including the preparation, implementation and review of a Construction and Environmental Management Plan, and the Construction Stage Surface Water Management Plan, it has also been recommended to undertake pre-construction mammal surveys, given the likely time lapse between the baseline survey work and the commencement of the construction phase, with a minimum distance of 25m to be provided between construction areas and any active mammal dwellings identified within the impact area. Buffer areas are also to be provided from ecologically sensitive areas / habitats of high conservation interest and features such as scrub to reduce the impact on many common mammal species whilst on-going monitoring for protected species will be carried out by a site ecologist. Construction hours will also be limited to reduce the level of disturbance to local fauna.

8.7.7. Bats:

Existing records show that the Common pipistrelle, Soprano pipistrelle, Nathusius' pipistrelle, Liesler's, Daubenton's, Brown long-eared, and Natterer's species of bat have all been recorded within the 10km grid squares (R10 & W19) in which the proposed development site is located. In addition, there are seemingly numerous incidences of Lesser horseshoe bat having been recorded in excess of 10km to the south and west of the application site with some records of this species to the east also, although mapping compiled by the National Biodiversity Data Centre does not record this species within / adjacent to the site boundary.

In terms habitat quality, a review of the landscape suitability maps prepared by the National Biodiversity Data Centre as detailed in Figure 5-13 of the EIS indicates that the study area can generally be described as being sub-optimal for most species of bat with *'Bat Habitat Suitability'* indices of '*Bad'* or '*Poor'*, although it is of relevance to note that parts of the wider site (or the entirety of same) are of '*Moderate'* suitability for 3 No. specific bat species i.e. Brown long-eared, common pipistrelle and Whiskered. The EIS proceeds to state that whilst the site provides potential

foraging / commuting areas along forestry edges and hedgerows, the overall quality of the habitat is deemed to be sub-optimal for bats.

With regard to possible roosting sites (such as within houses, outbuildings, bridges and trees), the EIS notes that the most important roost attributes within the study area comprise a number of derelict buildings, however, these potential roosting sites are identified in Figure Nos. 5-15 to 5-17 of the EIS as being outside of the proposed development site.

Bat surveys were carried out in May / June, 2013 and October, 2015 (a total of 48 No. hours) which focussed on potential roosting areas at dusk and along possible foraging / commuting routes. These only recorded the presence of the Soprano pipistrelle and Common pipistrelle foraging in low numbers within the hedgerow / treeline / scrub habitats (*N.B.* Whilst there was no recording of the Leisler's bat during the survey, it has been acknowledged that this species may use the site as they commute large distances and that it is potentially vulnerable to collision with wind turbines given its flight height). Following these activity surveys it was subsequently concluded that there was a minimal potential for bats to be roosting within the proposed development site on the basis that bats were not recorded within the site boundary around dusk when they would be expected to emerge from their roosts. It was further noted that there were no roosting opportunities for bats within the proposed development site such as farm buildings or mature trees whilst the age profile and tree type (i.e. conifer) of the woodland within the site boundary had a low potential value as roosting habitat for bat species.

In summary, the EIS has submitted that the subject site is of a low value and local importance to bats as it contains sub-optimal features for bat feeding and little / no roosting opportunities.

At this point I would refer the Board to the *'Supplementary Bat Survey (June, 2017)'* appended to the grounds of appeal which summarises the results of additional transect (activity) surveys, fixed point emergence surveys (at 2 No. derelict properties in the vicinity of the Ballynahulla substation), and automated bat activity surveys (at three locations within the site area that broadly correlate with the proposed turbine groupings) which were undertaken within the study area. Notably, whilst this additional survey work recorded a broader range of bat species within the

study area when compared to the initial surveys i.e. Common pipistrelle, Soprano pipistrelle, Liesler's, Daubenton's, Brown long-eared, and *Myotis* species (tentatively identified as Natterer's Bat), this would generally correspond with known records of bat species within the 10km grid squares (R10 & W19) in which the proposed development site is located. Moreover, the report has restated that the overall level of bat activity within the study area is low, with the majority of these activities (i.e. foraging and commuting) occurring towards the vegetated fringes / hedgerows / treelines bounding the public road system extending away from the application site. It has also been reiterated that there is very little potential for bats to roost within the site, particularly as trees occurring in the conifer plantations are simply not mature enough to harbour roosting bats. Furthermore, no bats were observed emerging from or entering those structures closest to the site which were considered the most optimal roost locations in the vicinity whilst no evidence of roosting bats was encountered during daytime searches of those locations. In effect, the results of these additional bat surveys broadly correspond with the findings of the previous survey work carried out at the site.

Accordingly, having reviewed the available information, including the proposal to install bat boxes in order to encourage roosting and to create new habitat through the planting of treelines along newly created access roads, in addition to the mitigation measures detailed in the EIS, with particular reference to the completion of a pre-construction bat survey and the implementation of those measures set out in the *'Guidelines for the Treatment of Bats during the Construction of National Road Schemes'*, I am satisfied that the overall impact of the proposed development on bat activity at the site location is within acceptable limits, although I note the potential collision risk posed to the high-flying Liesler's bat during the operation of the proposed turbines.

8.7.8. Amphibians & Reptiles:

It has been indicated that during the course of the ecological survey work, the Common Frog was recorded on site whilst tadpoles were present in some drainage ditches and waterlogged roadside verges. Accordingly, the site has been deemed to be an important area for frogs and their breeding habitats which are both protected under the Wildlife Act, 1976, as amended. It has also been acknowledged that the Smooth Newt has previously been recorded in the wider area (although it was not

recorded on site as part of the current survey) and thus it may occur within the proposed development site. Furthermore, whilst the Common Lizard has been recorded within 10km grid square W19 and could potentially occur on site, given the wet nature of the habitats within the site boundary, it is considered unlikely to occur within the study area.

With regard to the foregoing, it has been submitted that the proposed construction works could potentially result in some direct and indirect impacts on the aforementioned species such as by way of the disruption of habitats etc., however, I am inclined to concur with the findings of the EIS that any such negative impacts are likely to be relatively minor in a local context and of a temporary nature. By way of mitigation, I would refer the Board to Section 5.8.3.1.4 of the EIS wherein it is stated that should any areas potentially used by frogs for spawning require disturbance between the months of February and June, the area in question will be inspected by an ecologist to ensure that no spawn or froglets are present. In addition, in the event that any frogs will be interfered with, they will be relocated to a suitable habitat in the locality subject to licence from the National Parks and Wildlife Service. It has also been submitted that suitable ponds and wetlands constructed as part of the Surface Water Management Plan for the proposed development will be left in place post-construction and post-decommissioning as these features would be likely to provide a positive ecological service, especially for frogs.

The proposed development will have a minimal impact on amphibians and reptiles during the operational phase.

8.7.9. Fauna (Avian):

With regard to avifauna, it is apparent from a review of Section 5.4.4 of the EIS (and the Ornithological Report contained in Appendix ‘5B’ of that document) that the application site and its wider environs has the potential to support a wide variety of avifauna, including several species of conservation significance. In this respect I would refer the Board at the outset to Table Nos. 5-7 & 5-8 of the EIS which detail that a total of 10 No. bird species listed in Annex I of the E.U. Birds Directive and / or the Birds of Conservation Concern in Ireland (BoCCI) Red List have previously been recorded within Grid Squares R10 & W19 in surveys for breeding and / or winter atlases (i.e. hen harrier, merlin, peregrine falcon, red grouse, corncrake, curlew, barn

owl, meadow pipit, grey waytail & yellowhammer). Moreover, the series of bird surveys (breeding and wintering) carried out within the study area between 2013 and 2016 has further established the presence of several of these bird species of conservation significance within the confines of the subject site or the immediate surrounds of same. In this regard it is of particular relevance to note the proximity of the proposed development site to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area (Site Code: 004161) which has been designated as such under the E.U. Birds Directive due to the special conservation interest of the Hen Harrier. Indeed, this Special Protection Area is considered to be of particular ornithological importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier and is one the top sites in the country for the species. Furthermore, the presence of three species within this area (i.e. Hen Harrier, Merlin and Short-eared Owl), which are listed on Annex I of the E.U. Birds Directive, is of additional note.

With specific reference to the hen harrier, it is noteworthy that although no evidence of breeding birds was recorded either within the proposed development site or within a 5km hinterland of same between 2013 and 2015, the surveying undertaken in April, 2016 confirmed the presence of one territorial pair of hen harriers approximately 700m from the nearest proposed turbines. This pair was still noted to be active in July, 2016 and successfully fledged two young. The flight paths of those hen harriers recorded within the study area during the vantage point surveys conducted between March and July, 2016 have been mapped in Figure Nos. 4.1-5.4 of the Ornithological Report appended to the EIS and it is of particular relevance to note that the highest levels of activity within the wind farm site occurred during June and July, 2016 whilst there were notable concentrations of activity within the Barna / Barna Bog area of the application site and study area in the vicinity of Proposed Turbine Nos. T8 & T9. Notably, additional fieldwork conducted in and around the subject site in April, 2017 (as appended to the grounds of appeal) has also identified one territorial pair of hen harriers within the Barna area, approximately 700m from the nearest proposed turbine.

Winter roost surveys for hen harriers were conducted at the Barna roost site between November, 2014 and March, 2015 whilst additional roost surveys were carried out at the Barna roost and elsewhere around the remainder of the area

between November, 2015 and March, 2016. In both winters, the highest numbers of roosting birds were recorded in January, with peaks of 11 No. and 10 No. birds respectively (Please refer to Table 5-9 of the EIS for a more detailed comparison of bird counts at the Barna roost site over the two winters). It should also be noted that winter roost surveys were conducted within the Ballynahulla area of the proposed development site to the northeast of Barna Bog during the winter of 2014 / 2015 and that no hen harriers were observed going to roost in that area. Similarly, whilst roost surveys were conducted in the Ballynahulla and Lisheen parts of the subject site during the winter of 2015 / 2016, and although these recorded occasional hen harrier activity, there was no evidence of a winter roost at these locations

Having reviewed the available details, it would appear that recent hen harrier activity both within the proposed development site and the immediate surrounds of same has generally been concentrated within the Barna area, proximate to Turbine Nos. T8 & T9 (although I would concede that there are also notable levels of activity within Reaboy in the vicinity of Turbine Nos. T5, T6 & T7). Notably, no hen harrier pairs were found within the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area within 2km of the proposed turbines during the course of the April, 2016 surveys.

With regard to other species of conservation significance, during the roost surveys undertaken in the winter of 2014 / 2015 sightings of short-eared owl, barn owl and woodcock were recorded within the study area whilst short-eared owl, merlin and a barn owl were also observed during the winter roost survey of 2015 / 2016. It has also been acknowledged that whilst no red grouse were recorded during the course of the bird surveys, it is likely that this species is present in low numbers within the Barna Bog area.

In addition to the hen harrier as outlined above, 3 No. further species listed in Annex I of the E.U. Birds Directive were recorded within the survey period (peregrine, golden plover and short-eared owl).

There were two sightings of Peregrine at the Lisheen site in June, 2013, although it would appear that there have been no further observations of this species in subsequent survey work.

Golden Plover was recorded in low numbers in late winter and early spring in 2013 and 2014. Flocks of Golden Plover have also been observed on bog at Lisheen and to the south of Barna Bog, although it has been submitted that these birds are migrating through the area to their breeding grounds in the north and west of Britain and Ireland and northern Europe (*N.B.* It is further stated that there are no breeding records of Golden Plover for the Grid Squares (R10 and W19) containing the proposed development site in the breeding bird atlases).

The short-eared owl has been recorded occasionally with the Barna Bog area and on the basis of these observations it has been suggested that low numbers of this species use the Barna area in the winter and spring, although there was no evidence of species breeding in the vicinity based on the project fieldwork. It has also been noted that there are no breeding or winter records of short-eared owl within the Grid Squares (R10 and W19) containing the proposed development site in the breeding and winter bird atlases. In addition to its inclusion in Annex I of the Birds Directive, the short-eared owl is amber-listed as it is considered to be a rare breeding species (with fewer than 100 No. breeding pairs in Ireland between 2004-2012) and also because of its conservation status in Europe.

Four further 'Red-listed' species have been recorded within the study area i.e. woodcock, barn owl, meadow pipit and yellowhammer.

Woodcock were observed feeding at the Barna site in the January, 2015 winter roost surveys, although there was no evidence of breeding recorded in those surveys conducted during the breeding season whilst there are similarly no records of breeding woodcock for Grid Squares R10 and W19 in the breeding bird atlases.

Barn owls were also occasionally recorded in the vicinity of the Barna site during the winter roost watches whilst there is a known nest site in the north-eastern part of the proposed development site, approximately 500m from the nearest turbine, which is considered likely to be have been active in both 2013 and 2014. This species has also been previously recorded as breeding within Grid Squares R10 and W19.

Meadow pipits have been recorded as commonly breeding on site and whilst the species had declined by at least 50% between 1998 and 2011, recent data has indicated that the population has been in recovery since 2011.

A single yellowhammer was recorded singing in the southwest of the Lisheen site in May, 2014, although there were no subsequent sightings. There are no breeding records of yellowhammer in the Grid Squares within which the subject site is located.

At this point I would be inclined to suggest that the likely potential impacts on bird populations within the site area would typically include:

- The disturbance of bird communities within the site and the surrounding area which may lead to the desertion of nest sites during the breeding season or avoidance of the site by new and returning birds for breeding purposes.
- The direct loss of habitat from the construction of the turbine bases and hardstanding areas etc.
- The indirect habitat loss through site development works near the turbine locations and on access tracks to the site which may reduce the extent of suitable habitat locations for wintering and breeding birds.
- The risk of collisions with turbine blades.

Section 5.6.5.1 of the EIS proceeds to focus on the following potential impacts on hen harrier consequent on the proposed development:

- *Direct disturbance of nesting birds:*

It has been acknowledged that breeding hen harriers could be disturbed if turbines were to be constructed in close proximity to nesting territory due to the nature of the construction activities and increased human activity in the area, although it should be noted that the research referenced in relation to the breeding success of hen harrier having regard to the distance of nest sites from wind turbines has seemingly produced somewhat mixed results. However, the EIS has accepted that it is possible breeding hen harriers within 500m of a turbine could be disturbed by construction works whilst any such impacts would be increasingly likely within 300m of the nearest turbines.

At this point it should be noted that both the 2016 and 2017 bird surveys confirmed the presence of one territorial pair of hen harriers within the Barna Bog area, approximately 700m northwest of the nearest proposed turbine, which successfully raised two juveniles. This particular area is also known to have previously supported nesting pairs of hen harrier whilst it is of further relevance to note that no pairs of hen

harrier were found within The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area within 2km of the proposed turbines during the course of the 2016 & 2017 surveys. In this respect I would advise the Board that although the reasons for the nesting of hen harrier further south beyond the boundary of Special Protection Area are perhaps unclear, it could be reasonably speculated that the lands at Barna offer a comparatively more suitable habitat for nesting / breeding activities. In this regard, it is unclear as to whether the recently recorded nesting habits of hen harrier in the Barna area are in any way related to the recent development of the Cordal Wind Farm located further north within the confines of the SPA.

Notably, the submission received from the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs has asserted that Barna Bog provides habitat for Annex I listed bird species (hen harrier and short-eared owl) for which there is an obligation under Article 4 of the EU Birds Directive to strive to protect their habitats outside of protected areas. It further states that hen harriers will be displaced from using hunting habitat within 250m of operational wind turbines. The Department further recommends the omission of Turbine Nos. T8 & T9 for a number of reasons, including the fact that these turbines will be located within 1km of the SPA in an area used regularly by hunting hen harriers which may breed in the nearby SPA and that the loss of hunting habitat due to disturbance / displacement and mortality attributable to collision are significant risks which cannot be ruled out. The Department further disagrees with the conclusion of no adverse effects on the SPA (as stated in the NIS) and is of the opinion that reasonable scientific doubt remains in relation to Turbine Nos. T8 and T9.

- *Disturbance to prey availability:*

The availability of prey for hunting hen harriers could be reduced as a result of habitat loss following construction or through disturbance during the construction phase. In this regard it has been noted that 3 No. bird species, which have previously been recorded as making up a substantial proportion of the hen harrier's diet (as part of a study in Northern Ireland), have been recorded breeding within the proposed development site, although the presence of other prey species at the subject location should also be acknowledged as this may influence dietary habits.

Whilst the EIS has suggested that there is unlikely to be any significant disturbance of prey species during construction works, subject to the implementation of appropriate mitigation measures, and there is evidence from other projects that prey species such as meadow pipit and skylark have been seen to breed within operational wind farms, I would reiterate the concerns raised by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs that hen harriers will be displaced from hunting habitat within 250m of operational wind turbines.

- *Mortality due to collision with turbines:*

During the operational phase of the development, the proposed turbines could potentially pose a risk of collision, however, it has been submitted that hen harriers are well-known to fly at lower elevations (below 10m in height) when hunting and that flights at higher elevations will usually occur when the birds are returning to the nest, performing display flights, or simply when flying from one location to another. It has also been acknowledged that juvenile hen harriers are initially quite clumsy and unskilled in the air and thus would be at greater risk of collision. In response to these concerns, the applicant has stated that whilst no detailed breakdown of flight heights is available for the 2013-2015 studies, the majority of those sightings of hen harrier involved hunting birds below 10m in height i.e. below the proposed minimum rotor heights. Similarly, the majority of hen harrier flying activity recorded within both the application site and the study area in 2016 was below 30m in height. Accordingly, it has been asserted that the risk of adult hen harriers colliding with the proposed turbines is considered to be low, although the collision risk for juvenile birds from a nest within 500m of a turbine could be much higher. By way of mitigation, the applicant has sought to emphasise that 3 No. turbines which were originally proposed within the Barna Bog area were omitted from the submitted scheme in order to avoid the disturbance of the traditional hen harrier roost in that area whilst the use of ‘white lights’ on the turbines will be avoided as these can attract night flying birds such as migrants (*N.B.* Any lighting of the turbines will be required to be agreed with the Irish Aviation Authority). In addition, it should be noted that the associated cabling on site will be undergrounded thereby avoiding any risk of collision.

Notably, with respect to collision risk, the submission received from the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs has specifically stated that

there is evidence in the last two years of hen harrier mortality within the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area due to collisions with turbine blades and thus the previous risk of collision may have been underestimated.

- *Site avoidance by foraging harriers (habitat loss):*

On the basis of the bird surveys conducted on site (including the most recent survey undertaken in 2017 as appended to the grounds of appeal), it has been established that the proposed development site is used as a foraging area by hen harriers during the breeding season. However, whilst the extent of site avoidance / displacement of hen harriers from hunting / foraging areas consequent on the development of wind turbines has previously been studied on a number of occasions, the results of these studies is somewhat mixed given that hen harriers have been recorded avoiding wind turbines up to a distance of at least 250m whereas in other instances birds have passed / hunted within 50-100m of turbines. Nevertheless, on the basis of observations recorded on site and studies from elsewhere, the applicant has submitted that hen harriers will likely continue to hunt within the proposed development site following construction of the wind farm (although it is possible that there may be some degree of turbine avoidance by hunting birds) and that any impact on the species will be minimal. Notably, the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs rejects this conclusion and has advised that hen harriers will be displaced from using hunting habitat within 250m of operational wind turbines (which would seem to correspond with the UK study referenced in the EIS).

- *Impact on the Hen Harrier: Conclusions:*

Having reviewed the available information, in my opinion, there would appear to be clear evidence of a recently active breeding site (as supported by the 2016 & 2017 bird surveys undertaken by the applicant) within Barna Bog located approximately 700m northwest of the nearest proposed turbine which would seem to be supported by the notable concentrations of hen harrier activity recorded within the Barna / Barna Bog area of the application site / study area in the vicinity of Proposed Turbine Nos. T8 & T9. This would seem to suggest that the Barna area is of considerable importance to hen harrier locally due to its suitability for both breeding and foraging

activities. It is of further relevance to note that the recently observed territorial pair of hen harrier may have opted to nest in the Barna area (as opposed to elsewhere within the nearby Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area) given the overall suitability of the habitat available. In addition, the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs has sought to emphasise the site location adjacent to the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area and has further stressed that Turbine Nos. T8 & T9 are within an area used regularly by hunting hen harriers which may breed in the nearby SPA and thus the loss of hunting habitat due to disturbance / displacement consequent on the development of Turbine Nos. T8 & T9 could potentially impact on other hen harriers within the SPA (seemingly notwithstanding that the 2016 & 2017 survey works did not record any territorial hen harrier behaviour within a 2km hinterland of the proposed turbines within the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area).

On balance, given the inclusion of the hen harrier within Annex I of the E.U. Birds Directive and the protection afforded to same, the overall suitability of the Barna / Barna Bog area for hen harrier breeding and foraging activities as established by historical records and more recent survey work, the proximity of the Barna lands to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area, and the availability / potential usage of the said lands by hen harrier from within the SPA, I am inclined to conclude that the Barna area is of local importance to hen harrier and that the proposed development of Turbine Nos. T8 & T9 within same would be likely to have an unacceptable environmental impact on hen harrier in the locality given the consequential loss / disturbance of suitable habitat and the potential risk of collision. Moreover, for the purposes of appropriate assessment, and having regard to the precautionary principle, it is my opinion that it cannot be definitively established that the development of turbines (Nos. T8 & T9) within the Barna area would not have an adverse impact on hen harrier. Accordingly, in the event of a grant of permission, I would recommend the omission of Turbine Nos. T8 & T9.

(*N.B.* In support of the omission of Turbine No. 9, I would refer the Board to the '*High'* risk rating applied to the construction of that turbine in the *'Peat Stability*

Hazard Ranking Assessment'. Furthermore, the associated omission of the road / service infrastructure serving Turbine No. T9 would negate any requirement for a new crossing of the Carhoonoe Stream thereby addressing the concerns of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs as regards same).

8.7.10. Other Bird Species:

With regard to the remaining bird species known to occur on site or within the surrounding area, having considered the submitted information, I would generally concur with the contents of the EIS that, subject to the implementation of the mitigation measures set out in same, the proposed development will be unlikely to result in any significant adverse impact on those bird communities.

However, I would draw the Board's attention to the occasional sightings of Short-eared owl recorded within the Barna Bog area and the submission by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs that in the absence of more specific data other than sightings within the Barna Bog in general, the disturbance of short-eared owls using Barna Bog by the construction and operation of Turbine Nos. T8 and T9 cannot be ruled out. In this regard I am inclined to concur with the applicant that given the limited levels of activity recorded in the non-breeding season and the lack of breeding records in the area, the proposed development would not have any significant impact on this species, although the sightings recorded would seem to lend further credence to the ornithological importance of Barna Bog and the omission of Turbine Nos. T8 & T9.

8.7.11. The Aquatic Environment:

In terms of the aquatic environment, the EIS notes that the study area drains to two river catchments, namely, the Blackwater and Laune Rivers, by means of a series of upland streams (i.e. the Carhoonoe, Mountinfant & Reanasup Streams) and a number of other smaller drainage ditches, although it is envisaged that all drainage from the site will be directed towards the Blackwater catchment, save for a section of new road approximately 120m in length that will be used as a temporary access link to an existing track leading to Borrow Pit No. 1 which will drain towards the River Laune.

The River Blackwater is a designated salmonid water and is considered to be of national importance for salmon and sea trout, although it is also known to support a considerable variety of other fish species. The upland streams draining the application site are generally considered to be too small to be of significant fisheries value and were deemed to have little / no holding habitat for salmonids and (at best) sub-optimal conditions for trout. The most important stream within the proposed development site has been identified as the Mountinfant Stream within the Blackwater catchment.

Electrical fishing surveys were undertaken as part of the ecological assessment of the subject proposal in order to assess the fish stocks of watercourses in the study area. Notably, the majority of the fish recorded were considered to be 0+ trout, with some Atlantic Salmon also present, which would indicate the importance of the watercourses as spawning and nursey habitat for salmonids. The streams within the proposed development area were also considered to be too small and lacked sufficiently deep / large pools to hold adult salmonids outside of the spawning season.

The watercourses within the study area have been deemed to be too fast-flowing and small to support juvenile lampreys whilst the characteristics of 1st and 2nd order watercourses draining the site do not provide suitable fluvial conditions for larval lampreys. However, it has been acknowledged that there are likely to be some silt deposits in the Blackwater River that do support juvenile brook lampreys although these areas are considered to be infrequent. In addition to the foregoing, the 'critically endangered' European eel was only recorded at a single location during the assessment.

With regard to aquatic macroinvertabrates, there are no records of white-clawed crayfish in the 10km grid squares within which the proposed development site is located whilst the siliceous nature of the rock and water chemistry in the study area would not seemingly conform to the requirements of this crustacean which needs hard water for exoskeleton growth. However, the Freshwater Pearl Mussel (*Margaritifera margaritifera*) is found in the Blackwater River downstream of the study area with the Blackwater River (Cork / Waterford) Special Area of Conservation having been designated to include for the protection of same.

Whilst the survey work undertaken as part of the submitted Ecological Impact Assessment did not record any Freshwater Pearl Mussel in the watercourses within the proposed development site (seemingly as a result of the small size of the streams not being conducive to the species), it was noted that the closest previously recorded incidence of Freshwater Pearl Mussel was located downstream of the site at Lisheen Bridge in 2004 (c. 2.3km directly southeast of the subject site). Regrettably, when surveying was carried out at Lisheen Bridge on 3rd September, 2013 in order to ascertain the continued presence of FPM at this location, animal (cattle) activity within the river upstream of the survey point served to limit visibility, although a subsequent survey on 25th September, 2013 identified a single Freshwater Pearl Mussel c. 20m upstream of the bridge. However, it is at this point that I would refer the Board to the *'Silverbirch Windfarm – Pearl Mussel (Margaritifera margaritifera) Impact Assessment and Review of Proposed Mitigation Measures (Munster Blackwater Catchment) Explanatory Addendum, 2017'* as appended to the grounds of appeal (Appendix 5) which has clarified that whilst the nearest previously recorded FPMs in the River Blackwater were at / near Lisheen Bridge, a population of 21 No. FPMs has been observed close to Scrahan, approximately 2.6km (hydrologically) downstream of the site boundary (moderately closer to the proposed development site than those recorded at Lisheen Bridge).

Given the susceptibility of FPM to changes in water quality, the species' need for very high quality rivers with clean river beds and waters with very low levels of nutrients, and as the FPM population in the Munster Blackwater is presently at an unfavourable Conservation Status, it is clear that any further deterioration in surface water quality within tributaries / watercourses draining to the River Blackwater consequent on the proposed development could potentially have a significant indirect impact on the Freshwater Pearl Mussel (and other downstream aquatic species and habitats).

Potentially negative impacts during the construction and operational stages of the proposed development on the wider aquatic environment and fisheries are set out in Section 5.6 of the EIS and include:

- The pollution of watercourses with suspended solids due to runoff of soil from construction and clear-felled areas, or due to disturbance of fine subsurface

substrates in the course of construction and excavations at and adjacent to watercourse crossings;

- The contamination of surface waters during construction (and operational) works through the accidental release or discharge of hydrocarbons or other contaminated site runoff;
- Changes to the hydrological regime of the area such as through the alteration of the flow rates of streams / rivers; and
- The creation of preferential flow paths for surface water resulting in a significant increase in the volume of water entering local watercourses which can place additional pressure on those watercourses and interfere with the sustained flow of water particularly during dry weather.

In order to minimise the potential constructional and operational impacts on the aquatic environment attributable to the proposed development, it is intended to implement a series of mitigation measures as set out in Section 5.8 of the EIS, although regard should also be had to the measures detailed in Chapter 6: *'Soil and Geology'* and Chapter 7: *'Hydrology'* of the EIS (as supplemented by the associated appendices and the additional information provided with the grounds of appeal). Of particular relevance in the context of preserving downstream water quality during the construction stage is the proposal to implement a spoil management strategy in conjunction with a surface water management plan in order to prevent sediment-laden surface water runoff from the earthworks entering watercourses. It is also proposed to prepare a detailed Construction and Environmental Management Plan for the project which will include Construction Method Statements and a Construction Stage Surface Water Management Plan that will incorporate various erosion and sediment control measures including the installation of drainage and runoff controls prior to the commencement of site development and clearance works; the minimisation of the area of exposed ground; the prevention of runoff entering the site from adjacent ground; the provision of appropriate control and containment measures on site; the monitoring and maintenance of erosion and sediment controls throughout the project; and establishing vegetation as soon as practical on all areas where soil has been exposed. These measures are to be further supplemented by a Habitat Management Plan, the inclusion of an emergency erosion and soil control

response plan as a contingency measure in the Surface Water Management Plan, the implementation of a water sampling programme both before and during construction, and the adoption of best practice techniques including the installation of interceptor drains, silt fences, check dams, silt traps and settlement / siltation ponds etc.

It is also proposed to implement an Operational Phase Environmental Management Plan for the monitoring of wildlife and the efficacy of the mitigation measures to be undertaken both during and post construction.

Whilst I would acknowledge that concerns have been raised by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs as regards previous experience of construction projects impacting on downstream water quality etc. and that reference has been made to an anecdotal report of serious siltation of an upper Blackwater watercourse being attributable to the construction of a wind-farm with general mitigation measures similar to those cited in the submitted EIS, in my opinion, this does not form a sufficiently robust basis on which to refuse permission for the subject proposal. In the event that any siltation or pollution of a watercourse could be attributed to a particular development project, I would suggest that it would be necessary in the first instance to definitively ascertain the actual cause of the pollution event. For example, it is unclear whether or not the occurrence of any such siltation would be attributable to a deficiency in the overall design of the project or the mitigation measures proposed or whether it arose from a failure by the developer / contractor to adequately adhere to the prescribed programme of mitigation.

Accordingly, having reviewed the submitted information, including the measures to be implemented with respect to drainage design and site management during the construction and operational phases of the proposed development, in addition to the proposal to conduct water quality monitoring during all phases of the project which will allow for the opportunity to review and revise measures as appropriate, it is my opinion that the risk of a detrimental impact on downstream water quality and the consequences of same on aquatic ecological considerations can be satisfactorily mitigated both through the nature / design of the works proposed and the implementation of an appropriate programme of pollution control measures which are linked to good construction and site management best practice.

8.7.12. Invasive Species:

A number of invasive species have been recorded within the study area (and within the application site to a lesser degree), including Japanese Knotweed and Giant Rhubarb and, therefore, the movement of construction machinery and plant during the course of the works could potentially result in the introduction or spread of these non-native species throughout the site area. Furthermore, the importation of contaminated fill material or spoil from off-site locations could also contribute to the undesirable spread of invasive plant species. Accordingly, whilst I would acknowledge the applicant's intention to ensure that *'appropriate measures'* will be taken to ensure that machinery does not facilitate the establishment or spread of non-native invasive species within the development area, I would suggest that in order to further mitigate any such impacts the Construction and Environmental Management Plan should provide for adherence to the relevant guidance documents, including the National Roads Authority's *'The Management of Non-Native Invasive Plant Species on National Roads'* and the Environment Agency's *'Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites'.*

8.7.13. Flora & Fauna Conclusions:

In conclusion, it should be acknowledged that most forms of development will invariably impact on ecological considerations to some degree, however, in this instance, I am satisfied that, subject to the implementation of appropriate mitigation measures, the residual impacts of the proposed development are both localised and of such limited significance and influence as not to warrant a refusal of permission. Accordingly, having considered the available information, in my opinion, the impact of the proposed development on flora and fauna as a whole is within acceptable limits.

8.8. *Soils & Geology:*

8.8.1. Chapter 6 of the EIS describes the soil and bedrock conditions underlying the subject site and I would advise the Board that this information is primarily based on a desk-top study of various resources in addition to the findings of on-site investigations, including Ground Penetrating Radar and a peat probing survey.

8.8.2. With regard to the dominant bedrock geology underlying the study area, reference to the GSI database indicates that the lands are underlain by undifferentiated Namurian

Shales and Sandstones. In addition, broken shale rock was encountered in a number of the trial pits excavated at the proposed turbine locations and also at the locations of the proposed borrow pits. In respect of the overlying soils and subsoils, soil mapping for the area (as further confirmed by geotechnical investigation) indicates that the overburden across the proposed site predominantly comprises blanket peat which is underlain by glacial till (commonly described as boulder clay) derived from the Namurian Shales and Sandstones bedrock.

8.8.3. Peat depths at the locations of the proposed turbines, substations, construction compound, borrow pits / repository areas, and along the route of the new access roads (thereby informing the technical assessment of peat stability / landslide susceptibility and the design of the development proposal), were initially established by way of a programme of Ground-Penetrating Radar (GPR) conducted in November, 2015 which was subsequently updated in May, 2016 to take account of amendments to the layout during the development of the design and the associated environmental impact statement (please refer to Appendix 6-A of the EIS). The results of this survey work established that peat depths across the site range from 0.1m to 4.0m whilst Table 6-1 of the EIS details the depth of peat encountered at each of the proposed turbine locations (i.e. between 0.0m and 3.5m) (*N.B.* The results of the GPR survey are further elaborated in the Peat Stability Assessment appended to the EIS).

8.8.4. Potential negative impacts on the underlying soil / geology / hydrogeology arising as a result of the proposed development will include the direct physical impact of excavations carried out during construction and the possible contamination of the ground / soil, in addition to surface and ground waters, due to accidental spillages / leakages or the release of suspended solids. However, perhaps the most significant potential impact arising as a direct result of the construction of the proposed development is the possibility of bog failure / slippage given the peaty subsoil conditions on site.

8.8.5. With regard to the operational impact of the proposed development on soil / geology / hydrogeology, Section 6.4.6 of the EIS does not foresee any new impacts arising following the completion of the construction phase, although it is stated that any oil spill related to the operational turbines or their maintenance will be cleaned with all wastes to be removed by an appropriate contractor. Whilst I would generally concur

with the applicant that any further impacts on soil and geology post-construction are likely to be limited, in my opinion, it should be acknowledged that the increase in surface water runoff consequent on the replacement of previously vegetated / peatland areas with concrete / hardstanding at the turbine locations and along access roads could potentially result in changes to the hydrological regime (with possible implications as regards soil erosion patterns). Further impacts on the water environment may arise during the operational phase if regular maintenance, monitoring and auditing of mitigation structures, with specific reference to surface water management, is not undertaken during the lifetime of the project.

8.8.6. In order to minimise the potential constructional impacts arising from the development, it is proposed to implement a series of mitigation measures as set out in Section 6.4 of the EIS. These include the implementation of a spoil management strategy to ensure the geotechnical safety of the site during both the construction and operational phases which is to be coordinated with a surface water management plan in order to prevent sediment-laden surface water runoff from the earthworks entering watercourses. Further mitigation of potential impacts on soil and geological considerations will include the restriction of vehicular movements to the footprint of the permitted development, the implementation of various mechanisms to avoid / minimise the accidental release or discharge of hydrocarbons and other contaminated site runoff, and the compilation of a Construction and Environmental Management Plan prior to the commencement of development which will be supplemented with additional information, including more detailed site investigations, drawings and method statements etc. as appropriate, both before and during the construction works.

8.8.7. However, in my opinion, a key issue of concern is the potential for bog failure / slippage and in this respect I would refer the Board to the peat stability assessment and the geotechnical assessment / landslide susceptibility review contained in Appendices 6-B & 6-C of the EIS respectively and the conclusions of same as detailed in Section 6.3.2 (Landslide Risk Assessment) of the main document. In summary, a peat slope stability assessment was undertaken having regard to the data derived from on-site investigations, including the results of the ground-penetrating radar survey and the laboratory analysis of the peat probing samples for shear vane testing, pursuant to the provisions of the Scottish Executive Guidance

Document *'Peat Landslide Hazard and Risk Assessments – Best Practice Guide for Proposed Electricity Generation Developments'* with a view to establishing the likelihood of a particular slope or hillside failing consequent on the proposed works i.e. the 'Factor of Safety' (*N.B.* By way of explanation, it has been submitted that provided the available shear resistance is greater than the shear force, the Factor of Safety will be greater than 1.0 and the slope will remain stable, although a minimum Factor of Safety of 1.5 has been deemed appropriate in the subject instance). This analysis considered both unloaded (i.e. the stability of the peat with no additional load applied to the surface of same) and loaded conditions during construction (i.e. the stability of the peat with additional loadings applied to the surface of same such as would arise from the side casting of 1m depth of peat beside the access tracks and crane hardstanding areas) and whilst it has been submitted that the lowest calculated Factor of Safety (2.2) in the unloaded condition at a turbine / crane hardstanding location will occur at Turbine No. T9 (which would coincide with the deepest area of peat but with slopes of less than 3 degrees), I would advise the Board that the actual lowest Factor of Safety in unloaded conditions will occur at the proposed Ballynahulla substation (i.e. FoS: 2.0) on the basis of the data contained in Table 4.3.7 of the assessment. Furthermore, whilst the applicant has submitted that the lowest Factors of Safety in the loaded condition will occur at Turbine Nos. T9 (1.6) & T5 (2.7) thereby indicating that it would be safe to gradually surcharge up to 1m of peat at both these locations (although it is not proposed to side-cast peat at Turbine Nos. T3, T5 or T9), it is apparent from a review of Table 4.3.7 that the lowest Factor of Safety in a loaded condition actually occurs at the proposed Ballynahulla substation (i.e. FoS: 1.4) whilst two sections of access road have been identified as having a surcharged Factor of Safety of 1.6. It is also of relevance to note that contrary to the statement that the lowest calculated FoS at a location where it is intended to side-cast peat material will occur at Turbine No. T14 (FoS: 3.3), it is evident from Table 4.3.7 that Turbine No. T14 has a surcharged FoS of only 1.6.

8.8.8. Whilst it would appear that there may be some discrepancies in the conclusions drawn from the results presented in the peat slope stability assessment, it would appear that all of the areas in question will have a FoS in excess of the proposed minimum of 1.5, save for the location of the proposed Ballynahulla substation which

is moderately below that figure at 1.4 (although still above the 'absolute' minimum of 1.0).

8.8.9. In addition to the foregoing, the Peat Stability Assessment appended to the EIS includes a *'Peat Stability Hazard Ranking Assessment'* which incorporates a further evaluation of the stability and associated landslide susceptibility of the peat at the application site through the use of a *'Peat Stability Risk Assessment'* that aims to quantify the level of risk by assessing the likelihood of a peat instability event at the various elements of the proposed wind farm infrastructure having regard to a number of criteria, including peat depth, slope gradient, peat strength, and substrate type / condition. This ranking assessment ultimately concludes that the level of risk can be classified as *'Low'* at Turbine Nos. 3, 4, 6,7,8, 10, 11, 12 & 13 and *'Medium'* at Turbine Nos. 1, 2, 5, & 14 and thus works can safely proceed at all of these locations subject to the completion of appropriate geotechnical investigations and the implementation of suitable mitigation measures. It further states that whilst Turbine No. 9 has been classified as being at *'High'* risk' (which would seem to be consistent with the findings of the Peat Slope Stability Assessment), given that the calculated FoS is 2.2 in the unloaded condition and 1.6 for the loaded state, and as it is considered safe to undertake works where the FoS exceeds 1.5, it has been submitted that the construction of Turbine No. 9 can safely proceed subject to appropriate mitigation measures being put in place (e.g. a prohibition on side-casting at this location so that the higher safety factor will apply). The Peat Stability Risk Assessment also asserts that the level of risk at all other construction areas within the proposed development site will be either 'Low' or 'Medium' and thus the said works can safely proceed subject to suitable mitigation.

8.8.10. In terms of the construction methodologies and mitigation proposed in order to avoid / minimise the risk of peat slippage, I would refer the Board to Section 4.3.4 of the Peat Stability Assessment (as reiterated in Section 6.4 of the EIS). This includes reference to the implementation of a spoil management plan (in conjunction with a surface water management plan) which will provide for the storage of quantities of excavated peat and subsoil within the temporary borrow pits with any side-casting of peat to be limited to 1m in depth in areas that have been subjected to appropriate risk assessment. It is also proposed to undertake further more detailed geotechnical investigations to inform the final design of the turbine foundations, substations,

access tracks and other wind farm infrastructure which will likely require geophysical surveys to establish the nature and level of subsoils, weathered rock and bedrock in the vicinity of the turbine foundations and the proposed borrow pits, the drilling of rotary boreholes, the *in situ* testing of subsoil materials to confirm a suitable subgrade for the access tracks and crane hardstanding areas, and further detailed topographical survey work. Provision has also been made for the preparation of a detailed Construction and Environmental Management Plan. In addition, detailed method statements (informed by the detailed site investigations etc.) are to be prepared for the construction of each element of the various wind farm infrastructure, including the turbines, substations, access tracks and borrow pits, which will include details such as the construction, methodology, peat excavations, and the suitability for the side-casting of excavated peat material.

8.8.11. The submitted Peat Stability Assessment is further supplemented by a *'Geotechnical Assessment / landslide susceptibility review'* contained in Appendix 6C of the EIS which seeks to address historical peat failures in the area by applying the precautionary principle and to address same by utilising a conservative risk allocation for historical failures (*N.B.* The previous assessments concluded that due to subsequent peat harvesting and forestry plantation in the area it was difficult to confirm evidence for the purpose of allocating a risk ranking to historical failures). This report acknowledges the occurrence of a peat slide in 1896 and notes that Turbine Nos. T3 & T4 will be located within the historical slide area whilst Turbines T1 & T2 will be adjacent to same (the remainder of the development site was considered to be located at such a remove from the historical slide that no further assessment was warrantied). It proceeds to consider a number of factors in determining the potential risk of a further slide at this area, including the significant peat extraction which was undertaken in the intervening 121 No. years since the original slide event, the presence of extensive man-made / natural drainage channels which serves to limit the presence of water on the affected slopes, and further suggests that the potential severity of any peat slide in the Knocknageeha area is tempered by the fact that a significant slide has already occurred thereby reducing the volume of material available to reach sensitive receptors in the event of a failure. This assessment thus concludes that the risk ranking for the affected area of the application site would be '*Very Low'* or *'Low'* which seemingly lends validity to

the earlier decisions in the stability assessments not to attribute any ranking to historical failure since they were already using conservative depth-indexed shear values for peat in carrying out the stability analysis.

8.8.12. Having considered the foregoing, it would appear that the peat stability analysis undertaken by the applicant has established that the proposed development can safely proceed without giving rise to peat slippage subject to the implementation of a series of mitigation measures, including the finalisation of detailed construction methodologies for each of the various wind farm elements having regard to the results of further in-depth geo-technical assessment. Whilst I would concede that there would appear to some discrepancies in the submitted peat stability assessment, in light of the available information, including the calculated Factors of Safety for each element of the proposal and the submitted risk assessment, it would appear that the development can safely proceed, subject to appropriate mitigation.

8.8.13. On balance, I am satisfied that, subject to the implementation of suitable mitigation measures, the construction and operation of the proposed development should not give rise to any significant impact (either in isolation or cumulatively with other projects) in terms of soil and geological considerations on site.

8.9. *Water (Hydrology & Hydrogeology):*

8.9.1. In order to avoid unnecessary repetition, I would advise the Board of the need to consider any hydrological impacts arising on site (and beyond the site boundaries) as a result of the proposed development in tandem with my assessment of the potential impacts on the aquatic environment. Furthermore, any implications for Natura 2000 sites due to impacts on the hydrological regime of the area should be viewed in conjunction with the '*Appropriate Assessment'* of the proposal as set out elsewhere in this report.

8.9.2. Chapter 7 of the EIS details the receiving environment from a hydrological and hydrogeological perspective (e.g. aquifer importance, vulnerability etc). and notes that the site of the proposed wind farm is located close to the watersheds of the Blackwater and Laune River catchments. It clarifies that whilst Turbine Nos. T3, T6 & T7 and their associated infrastructure will be located close to the nominal divide between the aforementioned catchments, all drainage from these areas will be directed towards the Blackwater catchment. All other turbines and the remaining

infrastructure will be situated within the Blackwater catchment, save for a section of new road approximately 120m in length that will be used as a temporary access link to an existing track that leads to Borrow Pit No. 1 which will be within the River Laune catchment.

(*N.B.* The contents of this chapter are generally derived from the Hydrological and Hydrogeological Impact Assessment and the Surface Water Management Plan contained in Appendices 7A & 7B respectively of the EIS).

8.9.3. The EIS then focuses on the likely hydrological and hydrogeological impacts arising as a result of the proposed development including the following:

- Sediment release during clear-felling and construction phase earthworks and associated suspended sediment and nutrient loading of rivers via surface waters;
- The discharge of water with high concentrations of sediment to watercourses due to the dewatering of the excavations required for the turbine and meteorological mast foundations etc.
- Pollutant release such as hydrocarbons and cementious material to the aquatic environment;
- Potential hydrological changes to the drainage regime of the area;
- Potential increase in surface water runoff attributable to an increase in the extent of semi-impermeable surfaces thereby leading to siltation or erosion;
- Risk of sewage pollution from the temporary toilet facilities; and
- Deterioration in water quality thereby impacting on the downstream aquatic environment (*N.B.* Please refer to Chapter 6: '*Biodiversity'* with specific reference to downstream waters and species, including the Blackwater River (Cork/Waterford) Special Conservation Area (Site Code: 002170) and known populations of Freshwater Pearl Mussel within the River Blackwater.

8.9.4. Section 7.4 of the EIS proceeds to set out those mitigation measures which will be implemented in order to avoid or limit the potential impact of the proposed development on water quality, however, these are supplemented further by the additional measures included within the appended Hydrological and Hydrogeological

Impact Assessment and the Surface Water Management Plan (in addition to the supporting documentation provided with the grounds of appeal). Specific mitigation measures include the establishment of 50m wide watercourse buffer zones during the construction phase, the use of assorted drainage control mechanisms (such as interceptor drains, settlement ponds, check dams, sediment and slit traps, surface water attenuation, and diffused discharge via overland weirs to vegetation), and the implementation of a programme of surface water quality monitoring to be undertaken before, during and post construction which is to be agreed with Inland Fisheries Ireland in advance of the commencement of works (Section 4.3.12 of the Surface Water Management Plan).

8.9.5. Whilst I would acknowledge the concerns raised in the reports of both the Biodiversity Officer and the Environment Section of the Local Authority as regards the potential for downstream water pollution / contamination events consequent on the construction of the proposed development, with particular reference to potential negative impacts on the aquatic environment and protected species (including Freshwater Pearl Mussel) within the River Blackwater, and although the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs has also referenced an anecdotal report of serious siltation of an upper Blackwater watercourse due to the construction of a wind-farm with similar general mitigation measures to those cited in the EIS, having considered the available information, including the submission received from Inland Fisheries Ireland and the various mitigation and monitoring arrangements set out in the EIS (as supplemented by the Hydrogeological Impact Assessment and the Surface Water Management Plan contained in Appendices 7A & 7B of that document), on balance, I am satisfied that the potential hydrological and hydrogeological impacts associated with the construction and operation of the proposed development can be mitigated to within acceptable limits.

8.10. *Air Quality:*

8.10.1. During construction of the proposed development the principle impact on air quality will most likely arise from a combination of fugitive dust emissions emanating from the on-site construction activity, with particular reference to the excavation works, the operation of the proposed borrow pits, the movement of traffic and materials both within the site and along designated haul routes, and exhaust fumes from construction traffic and machinery.

8.10.2. In relation to dust emissions I would suggest that as the site is primarily composed of commercial forestry and bogland with a high moisture content, the wet nature of the underlying soil is less likely to result in the release of dust particles during construction works. Furthermore, given the separation distance to nearby housing it would seem unlikely that residential amenity would be affected by dust emissions arising from the construction of the proposed development, although there may be a localised effect on flora and fauna in the immediate vicinity of the site / works. Nevertheless, Section 8.4.1 of the EIS has outlined a series of measures which will be implemented on site in order to militate against the potential release of dust during the construction phase. These include the dampening down of haul roads during periods of extended dry weather, the control of vehicle speeds, the use of wheel-wash facilities, and the covering of loads delivered to the site. It is also proposed to implement a suitable dust-monitoring programme to be agreed in advance with the Planning Authority.

8.10.3. In specific reference to the proposed borrow pits and any fugitive dust emissions likely to arise from the operation of same, it is of relevance to note that the *'Quarry and Ancillary Activities, Guidelines for Planning Authorities'* published by the Department of the Environment, Heritage and Local Government in 2004 make reference to residents living within 500m of a quarry as having the potential to be affected by dust with continual or severe concerns about dust most likely to be experienced within c.100m of the dust source. Therefore, whilst I would acknowledge that Borrow Pit No. 3 will be located c. 250m from nearby housing and thus could potentially impact on the amenity of those properties by reason of fugitive dust emissions, given the nature and temporary duration of the works proposed, I am inclined to suggest that any such impacts will be limited and could be satisfactorily alleviated by way of a suitable programme of mitigation measures and dust monitoring.

8.10.4. With regard to exhaust emissions I would suggest that any adverse impact on air quality as a result of same will be short-term and of no significance.

8.10.5. Having reviewed the foregoing, given the inherent temporary duration and impact of the proposed construction works, coupled with the implementation of suitable measures to ensure best practice site management and dust minimisation, I am satisfied that the construction of the proposed development will not result in any

significant impact on air quality in the surrounding area. Similarly, given the nature of the development proposed, I would not anticipate any significant detrimental impact on air quality during the operational phase.

8.11. *Climatic Factors:*

8.11.1. Whilst the construction of the proposed development will invariably result in the emission of some greenhouse gases, this can be mitigated by adherence to best practice site management including the shutting off of equipment during periods of inactivity and the implementation of a traffic management plan. Accordingly, in my opinion, the impact of any such emissions on climatic considerations will be minimal.

8.11.2. With regard to the operational impact of the proposed development, I would concur with the findings of the EIS that the generation of renewable electricity by the proposed turbines will have a wider positive impact on climatic considerations in terms of reducing carbon emissions thereby contributing to the achievement of national and international emission reduction objectives through the displacement of traditional methods of energy generation by the unsustainable combustion of fossil fuels such as coal and oil.

8.12. *Landscape:*

8.12.1. The design of wind turbines necessitates increased height in order to avail of greater wind speeds and, therefore, such structures are typically visible over a wide area. In this respect concerns have been raised that the proposed development will appear unduly visually prominent on the surrounding landscape. Accordingly, in order to assess the visual impact of the subject proposal it is necessary to consider the site context having regard to the site location and the wider sensitivity and landscape value of the surrounding area.

8.12.2. In a local context, the proposed development site is located on relatively elevated lands to the west of (and sloping towards) the upper reaches of the Blackwater River Valley, which runs north to south though the uplands of east Kerry and northwest Cork, whilst the surrounding topography generally rises on travelling north / northwest towards Mount Eagle and the Mullaghareirk Mountains with lower-lying lands to the south offering views towards The Paps and the Derrynasaggart Mountains beyond same. The surrounding landscape is dominated by wet grassland, cut-over bog and commercial forestry plantations with intermittent instances and

localised concentrations of individual farmsteads and one-off rural housing, although the small rural villages of Gneevgullia and Ballydesmond are situated approximately 2km south and 1km northeast of the site respectively. There are also a number of existing (and permitted) wind energy developments in the wider area, including the Cordal and Scartaglen wind farms and the turbines serving the Munster Joinery facility at Lacka Crossroads, Co. Cork, whilst the landscape is also bisected by various electricity transmission / distribution infrastructure including the Clashavoon to Tarbert 220kV overhead line and the recently developed 110/220kV substation at Ballynahulla adjacent to the proposed northernmost turbine cluster.

8.12.3. In terms of a broader landscape classification it is of relevance in the first instance to note that the subject site is not located within any identified scenic or amenity designation and that the wider area has instead been identified as *'Rural General'* on Map No. 12.1k of the Kerry County Development Plan, 2015. In this respect I would advise the Board that these *'Rural General'* areas are considered to comprise the least sensitive landscapes in the county and generally have a higher capacity to absorb development than other 'amenity' designations. Furthermore, the application site will not be overtly visible from any view or prospect listed for preservation in the Development Plan.

8.12.4. However, in the context of assessing the subject proposal, I would specifically draw the Board's attention to the Landscape Character Assessment of the county undertaken as part of the Kerry County Council Renewable Energy Strategy, 2012 and, in particular, to the site location within Landscape Character Area No. 34: *'The Munster Blackwater Valley'* as identified in Map 7.5: *'Landscape Character Areas & Archaeological Landscapes'* of the LCA. In this respect it should also be noted that the Landscape Character Assessment was specifically undertaken to determine the sensitivity and capacity of landscapes to absorb wind development without significantly undermining the quality and integrity of the landscape in question. In its analysis of the Munster Blackwater Valley LCA, the landscape character assessment details that the wider area can be divided into two viewpoints, however, it is clear that *'Viewpoint: Tooreengarrive'* concerns that area within which the subject site is located. The assessment proceeds to classify the prevailing landscape type as comprising *'Transitional Marginal Land, Hilly & Flat Farmland'* pursuant to the *'Wind Energy Development, Guidelines for Planning Authorities, 2006'* before stating that

the area is marginal in nature with a large amount of forestry and bogland and that the overall quality of the landscape is of *'very little scenic value'*. The development capacity assessment further notes (as part of a broader set of criteria) that the landscape in question is not of importance from a scenery, tourism or recreational perspective, was not identified as a scenic landscape during the course of public consultation, and is not considered to be of national or county importance. The *'Development Capacity Summary'* for LCA No. 34 (The Munster Blackwater Valley): Viewpoint: 'Tooreengarrive' subsequently states the following:

> *'This area is generally marginal in nature with scattered dwellings. There are no views to protect and the landscape does not have any particular scenic quality. It contains a large amount of forestry. Two out of the three public consultation summary maps identified this area as being acceptable for wind development. It is therefore considered that this area does have landscape capacity regarding wind energy development. There is inter-visibility between this area and LCA 35 to the west, it would also be visible from County Cork to the east. The area with capacity extends from The Brown Flesk River Valley and the R577 southwards towards Rathmore. It is considered that this area would have significant capacity for wind energy development, and is therefore being zoned Strategic. Any area that has not been zoned is due to its presence within the Lough Leane Catchment, an important ecological sensitivity'.*

8.12.5. Accordingly, on the basis of the foregoing, it would seem reasonable to assume that this particular landscape was deemed to have adequate capacity to accommodate the further development of wind energy and that it would be designated as a *'Strategic Site Search Area'* in the Renewable Energy Strategy. However, it is at this point that there would appear to be a divergence between the findings of the Landscape Character Assessment and the adopted Renewable Energy Strategy given the site location within an area which has only been designated as *'Open for Consideration'* in Map No. 7.6: *'Wind Deployment Zones'* of the Strategy. Regrettably, no explanation has been included in the Strategy as to why the more northerly ('Tooreengarrive') extent of LCA No. 34 has been designated as an area *'Open for Consideration'* for wind energy development as opposed to a *'Strategic Site Search Area'* as was recommended in the Landscape Character Assessment. Whilst I would accept that the northernmost periphery of LCA No. 34 is identified as

a *'Landscape Sensitive Area'* in Map No. 7.3(c): *'Ecologically Sensitive Areas'* of the Strategy, it is clear that this designation simply corresponds to the outer limits of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area and thus is not directly related to scenic quality considerations. Moreover, it is my opinion that the exclusion of this ecologically sensitive area from any *'Strategic Site Search Area'* would not appear to warrant the application of an *'Open to Consideration'* designation to the entirety of that part of LCA No. 34 which was previously identified in the Landscape Character Assessment as having *'significant capacity for wind energy development'* and was thus of *'strategic'* merit.

8.12.6. Chapter 10 of the EIS (as supplemented by the first party grounds of appeal) provides a detailed assessment of the overall visual impact of the proposed development and includes the use of photomontages and wireframes in order to illustrate the projected impact of the proposal from a total of 20 No. identified viewpoints (17 No. viewpoints in the original EIS documentation and a further 3 No. viewpoints detailed in the grounds of appeal). It also includes an analysis of the potential cumulative visual impact of the development when taken in conjunction with existing and permitted farms within a 20km radius of the site through the identification of *'Zones of Theoretical Visibility'*. Having conducted an inspection of both the application site and the wider area, in my opinion, the assessment of the visual impact of the proposed development contained in the EIS is reasonable and I would broadly concur with its findings as regards the likely visibility of the turbines from within the wider area.

8.12.7. The most significant impacts will be felt within short-medium range views in the vicinity of the site and also from vantage points along the R577 Regional Road to the north, particularly from within the village of Ballydesmond and at Knocknaboul Cross, although I would note that the turbines will be located perpendicular to the regional road and thus they will not terminate the view forward along this road. Longer distance views of the site will also be available from within the wider area, although intervening landscape features such as buildings and hedgerows will serve to somewhat mitigate the overall visual impact of the scheme.

8.12.8. Clearly, the erection of 14 No. turbines with a blade-tip height of up to 150m will result in some degree of visual intrusiveness in the landscape with the most significant impact being felt from along the R577, however, I am inclined to conclude

that although this landscape is somewhat remote and undeveloped, it is not of particular scenic quality nor is it unique. In my opinion, whilst wind turbines by their very nature are typically visually prominent by reason of their height, having regard to the site location in a relatively sparsely populated area, the overall landscape character of the area (as detailed in the Landscape Character Assessment undertaken as part of the Kerry County Council Renewable Energy Strategy, 2012), the spacing and layout of the turbines, the existing and permitted pattern of wind energy developments in the surrounding area, and the analysis of the visual impact of the proposal as set out in the EIS, on balance, I am satisfied that the development proposed can be accommodated on site and that the overall visual impact on the area is within acceptable limits. Furthermore, whilst I am conscious of the increasing proliferation of individual wind energy developments within this particular area and the potential cumulative impact of same, in this instance I am satisfied that the overall visual impact is within tolerable limits.

8.13. *Material Assets:*

Having reviewed the available information (including Chapter Nos. 11 & 12 of the EIS), I propose to focus this aspect of my assessment on the impact of the proposed development on architectural / archaeological / cultural heritage considerations in addition to any implications in respect of tourism, aviation, telecommunications, grid capacity, waste considerations, and forestry.

8.13.1. Architectural Heritage:

Following a review of the available information, and in light of the absence of any protected structures either within the confines of the application site or in the immediate vicinity of same, I am satisfied that the proposed development is unlikely to give rise to any significant impact on items of built heritage.

8.13.2. Archaeological Heritage:

In terms of the archaeological heritage implications of the proposed development, in the first instance it can be confirmed from a review of the available information that there is a relatively limited number of recorded archaeological monuments in the immediate site surrounds and that whilst there are several such monuments within the study area, the layout of the proposed development has ensured that no turbines, access roads or other structures will be located within the immediate

vicinity of same. In this respect I would refer the Board to Figure 12.2 of the EIS which confirms that all recorded monuments are located outside of the proposed works area.

With regard to the potential for any unrecorded sub-surface archaeological features on site, I would refer the Board to the results of the archaeological test trenching undertaken on site by the applicant which did not encounter any items of archaeological significance, save for a burnt spread mound / possible *fulacht fiadh* which was recorded within Trench No. 22 at Ballynahulla (ITM 514456, 603508) along the route of the access road serving Turbine No. 12. In response to the discovery of the aforementioned archaeological deposits within Trench No. 22, the layout of the proposed development was adjusted in order to preserve same *in situ*, however, it has also been acknowledged that such features tend to occur in groups where sources of water and / or stone were available and thus it is quite likely that there may be further burnt mounds / *fulacht fiadh* in the vicinity. Accordingly, it is proposed to establish a buffer zone around the known extent of the burnt mound encountered at Ballynahulla (ITM 514456, 603508) where no development will be permitted, although it should be noted that the alternate access route to the turbine in question has not been tested. Furthermore, as regards the potential for further unknown sub-surface archaeological features on site, all ground works within the construction phase are to be subjected to archaeological monitoring under license from the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

Having considered the foregoing, it is my opinion that the proposed development, subject to the implementation of suitable mitigation measures, is unlikely to have any significant impact on items of archaeological interest.

8.13.3. Cultural Heritage:

Concerns have been raised that the proposed development, particularly when taken in conjunction with other existing and permitted wind energy developments in the surrounding area, will have a negative impact on the cultural heritage of the wider area given its location within the region historically identified as Sliabh Luachra, however, whilst I would acknowledge the rich culture associated with this part of South-East Kerry and West Cork, I am unconvinced that the subject proposal will have any significant impact on cultural heritage considerations.

8.13.4. *Tourism*:

Whilst I would acknowledge the need / desire to maintain and develop this part of Co. Kerry as a tourist destination, I am unconvinced that the development of the proposed wind farm would in itself deter visitors from coming to the area. Furthermore, I would suggest that the perception of wind turbines by tourists is likely to be strongly influenced by an individual's views on wind energy. Whilst some individuals / parties may object to wind turbines in principle, or in a given locality, others may welcome such developments or simply be indifferent to same. Similarly, with regard to the possible adverse impact of the proposed development on the use of local amenities in the area such as walking trails, it is difficult to predict whether these impacts will be of such magnitude as to discourage the use of these areas. Notably, in some locations in Ireland the development of wind turbines has attracted a certain curiosity factor, for example, at Carnsore Point, Co. Wexford, whereby increased visitor numbers are attracted to a particular area to view the turbines, although I would accept that over the passage of time and as wind energy development becomes more prevalent it is likely that this novelty factor will gradually diminish.

On consideration of the foregoing, it is my opinion that the erection of the proposed turbines will not directly prohibit or hinder the use of surrounding amenities, including nearby walkways, although some individuals may choose to not to avail of same given the presence of the turbines and their impact in terms of noise and visual appearance. This is a matter which is difficult to judge, however, on balance, I would suggest that the proposal is not incompatible with any amenity activities which may take place in the locality.

8.13.5. Aviation:

The subject application has been accompanied by an Aviation Impact Assessment (please refer to Appendix 11A of the EIS) which seeks to identify any effects of the proposed wind farm that could potentially present a physical obstruction to aviation in the area, with particular reference to the operation of Kerry Airport at Farranfore. In this regard I would advise the Board that whilst the submitted analysis has established that the proposed wind farm will be sited in proximity to the Obstacle Limitation Surfaces for the Airport, it has been confirmed that the development will

be located outside of the lateral confines of the Outer Horizontal Surface in addition to the Approach and Take-Off Climb Surfaces and, therefore, it will not result in any breach of OSL at Kerry Airport.

In addition to the foregoing, it should be noted that Instrument Flight Procedures are in place at airports in order to describe the standard routes for aircraft to follow on approach thereby allowing aircraft to accurately line up with the runway and descend safely. Furthermore, separate IFPs are designed to allow aircraft to depart the airport on preferential routes that allow them to integrate into the en route structure. Obstacles such as wind farm development can present a physical obstruction to the containment areas for IFPs. Accordingly, the submitted AIA has considered the potential for the proposed development to impact on IFPs at Kerry Airport. In this respect it is noted that the proposed wind farm will be located in proximity to the routes of 4 No. departure procedures and thus the proposal has the potential to fall within the obstacle containment areas of published Kerry Airport IFP. Figure 3 of the AIA indicates a point along the Runway 08-CRK1A Departure IFP where aircraft must be a minimum altitude of 2,300ft. amsl (above mean sea level). These procedures require a minimum obstacle clearance of 1,000ft. and as the maximum blade tip height of the proposed development will be 1,325.5ft. amsl there will be less than 1,000ft. obstacle clearance. Consequently, it has been suggested that further analysis may be required to determine the potential for an effect on defined IFP. However, in response to the foregoing concerns as regards obstacle clearance, the AIA proceeds to reference the presence of the Scartaglen Wind Farm to the west-northwest of the subject proposal which is also located in an area that could potentially impact on the same four departure procedures. More notably, it is noted that the tip heights of the turbines within the Scartaglen Wind Farm are higher than those proposed in the subject development. By way of example, the AIA states that the highest turbine within the subject wind farm is Turbine No. 10 with a proposed tip height of 404m amsl at 17km from the Kerry Airport Navigation Beacon whereas Turbine No. 4 within the Scartaglen Wind Farm has a tip height of 440m amsl and is 14.9km from the airport. Therefore, it has been submitted that as all the proposed turbines will have lower tip heights than the Scartaglen Wind Farm, it may be assumed than either the Scartaglen scheme does not affect the IFP or that any

impact on the containment areas of the IFP has been mitigated for or would be operationally managed by the airport.

The AIA subsequently asserts that whilst the proposed wind farm will straddle two Minimum Sector Altitudes (MSAs) of the Non-Directional Deacon (NDB) navigation facility at Kerry Airport, there will be in excess of 1,000ft. between the highest point of the proposed development and the MSA altitude and thus the proposal will not affect the established Kerry Airport MSA relating to the NDB.

With regard to the potential for the proposed development to impact on the Instrument Landing System (ILS) procedures on approach to Kerry Airport, the AIA notes that given the current requirement to operate at an altitude to ensure an appropriate vertical separation from the neighbouring Cordal Wind Farm to the north, which is located on significantly higher ground, the proposed wind farm will not have an impact on flight inspection operations for the ILS on Runway 26 at the airport.

Finally, the AIA states that, subject to consultation with the Irish Aviation Authority, it is proposed to implement appropriate aviation obstruction lighting for the development.

Therefore, on the basis of the analysis contained in the AIA submitted with the application, the mitigation measures detailed in Section 11.4.3 of the EIS (including the provision whereby details of aeronautical requirements will be agreed with the IAA), and noting that the manager of Farranfore Airport did not raise any objection to the proposed development, it would appear that the subject proposal will not pose an unacceptable risk to aviation in the area.

8.13.6. Telecommunications:

Section 11.5 of the EIS acknowledges that radio, television and microwave transmissions can potentially be affected by either individual wind turbines or larger wind farm developments as follows:

- The steel turbine may obstruct, reflect or refract the electromagnetic waves used in telecommunications systems for transmission purposes;
- The turbine blades may have a similar intermittent effect as they rotate; and
- If the blades are of a steel construction or have a steel core they can act as an aerial to relay signals.

It is subsequently noted that the recent switchover to digital terrestrial television has significantly reduced the potential impacts on television signals associated with wind farm developments.

By way of mitigation, it has been detailed that the applicant has entered into a Protocol Agreement with 2rn (the communication network operator in Ireland whose responsibilities include the distribution and transmission of the programme services of RTE Radio and Television, TV3, TG4 & Today FM) whereby it has given an undertaking to cover the cost of rectifying any degradation in signal quality associated with the proposed wind farm development. It has also been submitted that the proposed turbine blades will be of a fibreglass composite construction thereby minimising the potential for scattering effects to television signals whilst no objections to the subject proposal were received from the various telecommunications operators contacted as part of the pre-planning consultation process undertaken during the preparation of the EIS.

Accordingly, on the basis of the available information, and in the absence of any clear evidence to the contrary, I am amenable to accepting the conclusion drawn in the EIS that the proposed development is not likely to have a significant impact on telecommunications signals in the surrounding area.

8.13.7. Grid Capacity:

Given the stated intention to connect the proposed development to the national grid via the adjacent Ballynahulla 220kV substation, which is looped into the existing Clashavoon-Tarbert 220kV line and linked to the existing Glenlara 110kV station by a new 110kV overhead line (detailed as the Kishkeam 220/110kV project for the purposes of the Transmission Forecast Statement 2012-2018), and as the aforementioned grid infrastructure is purposively intended to accommodate planned generation in the southwest, I am satisfied that the subject development will not have an adverse impact on grid capacity.

8.13.8. Waste Considerations:

Having reviewed the contents of Section 11.7 of the EIS, whilst it is apparent that the construction of the proposed development will give rise to some waste generation, I note the applicant's assertion that the site layout has been optimised in order to minimise the quantities of peat and overburden etc. which will need to be excavated

in order to facilitate the construction of the wind farm and that any surplus peat / spoil etc. will be managed with the confines of the site. I would also accept that quantities of construction waste attributable to packaging and surplus materials etc. will likely be limited and can be suitably disposed of off-site by a licensed waste contractor. Accordingly, I am satisfied that the subject proposal will not give rise to any significant impact on the receiving environment in terms of waste generation.

8.13.9. Forestry:

Whilst the construction of the proposed development will necessitate some clear felling and thinning of trees in order to accommodate the turbine hardstands etc., in my opinion, given the limited extent of forestry involved, the impact of these works will be minimal and is not of such significance as to warrant a refusal of permission. Furthermore, although the applicant has proposed to undertake compensatory planting in order to replace any felled trees, and whilst the location for same has not been disclosed in the submitted particulars, I would suggest that the subject proposal is not reliant on same.

8.14. *Interactions and Cumulative Effects:*

With regard to the inter-relationships between several of the foregoing factors / impacts, in my opinion, these interactions have been satisfactorily addressed throughout the EIS and the further submissions received during the application and appeal process.

Furthermore, in terms of the wider potential for in-combination / cumulative impacts with other developments in the surrounding area, with particular reference to wind-energy related projects, in my opinion, it is clear that any such impacts will generally be limited to the construction stage of the proposed development and that those impacts will be of a limited duration and, subject to the implementation of an appropriate programme of mitigation measures (including adherence to best practice construction methodologies and the agreement of a Construction and Environmental Management Plan), will not be of such significance as to give rise to such a detrimental effect as to warrant a refusal of permission.

8.15. *Environmental Impact Assessment: Conclusions:*

Having regard to the foregoing, I consider it reasonable to conclude on the basis of the information available, which I consider adequate, that the proposed

development, subject to the implementation of the recommended mitigation measures and adherence to suitable monitoring protocols, will not give rise to any unacceptable residual impacts on the surrounding environment.

8.16. ***Appropriate Assessment:***

From a review of the available mapping, including the data maps from the website of the National Parks and Wildlife Service, it is apparent that whilst the proposed development site is not located within any Natura 2000 designation, there are a number of protected sites in the wider area (as identified in Figure 1 of the Natura Impact Statement contained in Appendix 5C of the EIS), with particular reference to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area (Site Code: 004161) to the immediate north and the Blackwater River (Cork/Waterford) Special Conservation Area (Site Code: 002170) further east. In this respect it is of relevance to note that it is the policy of the planning authority, as set out in Chapter 10 of the Kerry County Development Plan, 2015, to conserve, manage and, where possible, enhance the County's natural heritage including all habitats, species, landscapes and geological heritage of conservation interest and to promote increased understanding and awareness of the natural heritage of the County. Furthermore, Objective NE 12 of the Plan states that no projects which will be reasonably likely to give rise to significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites, having regard to their conservation objectives, will be permitted (either individually or in combination with other plans or projects) unless imperative reasons of overriding public interest can be established and there are no feasible alternative solutions.

In effect, it is apparent from the foregoing provisions that any development likely to have a serious adverse effect on a Natura 2000 site will not normally be permitted and that any development proposal in the vicinity of, or affecting in any way, a designated site should be accompanied by such sufficient information as to show how the proposal will impact on the designated site. Therefore, a proposed development may only be authorised after it has been established that the development will not have a negative impact on the fauna, flora or habitat being protected through an Appropriate Assessment pursuant to Article 6 of the Habitats Directive. Accordingly, it is necessary to screen the subject proposal for the purposes of 'appropriate assessment'.

8.16.1. *Stage 1: Screening:*

In screening the subject proposal for the purposes of appropriate assessment, I would refer the Board at the outset to the screening exercise undertaken by the applicant as set out in Section 3 of the Natura Impact Statement which has identified the following 5 No. European Sites within a 15km radius of the proposed works pursuant to the advice contained in the *'Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities'* published by the Department of Environment, Heritage and Local Government:

- The Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment Special Area of Conservation (Site Code: 000365)
- The Blackwater River Special Area of Conservation (Site Code: 002170)
- The Castlemaine Harbour Special Area of Conservation (Site Code: 000343)
- The Lower River Shannon Special Area of Conservation (Site Code: 002165)
- The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area (Site Code: 004161)

In addition to the foregoing, using the precautionary principle, I would advise the Board that I have also considered those Natura 2000 sites located outside of the defined 15km radius, however, as no potential pathways for any significant impacts on those sites can be established, it can be concluded that there is no potential for any impacts on those Natura 2000 sites located outside the 15km buffer.

Accordingly, having considered the available information, I would concur with the findings of the submitted screening exercise that consideration for the purposes of appropriate assessment should be focused on the following Natura 2000 Sites:

European Site:	*The Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (Site Code: 000365):*
Distance & Direction:	c. 2km southwest
Qualifying Interests:	[3110] Oligotrophic Waters containing very few minerals
	[3130] Oligotrophic to Mesotrophic Standing Waters
	[3260] Floating River Vegetation

[4010] Wet Heath

[4030] Dry Heath

[4060] Alpine and Subalpine Heaths

[5130] Juniper Scrub

[6130] Calaminarian Grassland

[6410] Molinia Meadows

[7130] Blanket Bogs (Active)*

[7150] Rhynchosporion Vegetation

[91A0] Old Oak Woodlands

[91E0] Alluvial Forests*

[91J0] Yew Woodlands*

[1024] Kerry Slug (Geomalacus maculosus)

[1029] Freshwater Pearl Mussel (Margaritifera margaritifera)

[1065] Marsh Fritillary (Euphydryas aurinia)

[1095] Sea Lamprey (Petromyzon marinus)

[1096] Brook Lamprey (Lampetra planeri)

[1099] River Lamprey (Lampetra fluviatilis)

[1103] Twaite Shad (Alosa fallax)

[1106] Atlantic Salmon (Salmo salar)

[1303] Lesser Horseshoe Bat (Rhinolophus hipposideros)

[1355] Otter (Lutra lutra)

[1421] Killarney Fern (Trichomanes speciosum)

[1833] Slender Naiad

Conservation Objectives: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.

European Site:	*The Blackwater River SAC (Site Code: 002170):*
Distance & Direction:	c. 500m east
Qualifying Interests:	[1130] Estuaries [1140] Tidal Mudflats and Sandflats [1220] Perennial Vegetation of Stony Banks [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3260] Floating River Vegetation [91A0] Old Oak Woodlands [91E0] Alluvial Forests* [1029] Freshwater Pearl Mussel (Margaritifera margaritifera) [1092] White-clawed Crayfish (Austropotamobius pallipes) [1095] Sea Lamprey (Petromyzon marinus) [1096] Brook Lamprey (Lampetra planeri) [1099] River Lamprey (Lampetra fluviatilis) [1103] Twaite Shad (Alosa fallax) [1106] Atlantic Salmon (Salmo salar) [1355] Otter (Lutra lutra) [1421] Killarney Fern (Trichomanes speciosum)
Conservation Objectives:	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.

European Site: *The Castlemaine Harbour SAC (Site Code: 000343):*

Distance & Direction: c. 14.5km west-southwest.

Qualifying Interests: [1130] Estuaries

[1140] Tidal Mudflats and Sandflats

[1210] Annual Vegetation of Drift Lines

[1220] Perennial Vegetation of Stony Banks

[1230] Vegetated sea cliffs of the Atlantic and Baltic coasts

[1310] Salicornia Mud

[1330] Atlantic Salt Meadows

[1410] Mediterranean Salt Meadows

[2110] Embryonic Shifting Dunes

[2120] Marram Dunes (White Dunes)

[2130] Fixed Dunes (Grey Dunes)*

[2170] Dunes with Creeping Willow

[2190] Humid Dune Slacks

[91E0] Alluvial Forests*

[1095] Sea Lamprey (Petromyzon marinus)

[1099] River Lamprey (Lampetra fluviatilis)

[1106] Atlantic Salmon (Salmo salar)

[1355] Otter (Lutra lutra)

[1395] Petalwort (Petalophyllum ralfsii)

Conservation Objectives: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.

European Site:	*The Lower River Shannon SAC (Site Code: 002165):*
Distance & Direction:	c. 7.7km north-northeast
Qualifying Interests:	[1110] Sandbanks
	[1130] Estuaries
	[1140] Tidal Mudflats and Sandflats
	[1150] Coastal Lagoons*
	[1160] Large Shallow Inlets and Bays
	[1170] Reefs
	[1220] Perennial Vegetation of Stony Banks
	[1230] Vegetated Sea Cliffs
	[1310] Salicornia Mud
	[1330] Atlantic Salt Meadows
	[1410] Mediterranean Salt Meadows
	[3260] Floating River Vegetation
	[6410] Molinia Meadows
	[91E0] Alluvial Forests*
	[1029] Freshwater Pearl Mussel (Margaritifera margaritifera)
	[1095] Sea Lamprey (Petromyzon marinus)
	[1096] Brook Lamprey (Lampetra planeri)
	[1099] River Lamprey (Lampetra fluviatilis)
	[1106] Atlantic Salmon (Salmo salar)
	[1349] Bottle-nosed Dolphin (Tursiops truncatus)
	[1355] Otter (Lutra lutra)

Conservation Objectives:	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.

European Site:	*The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (Site Code: 004161):*
Distance & Direction:	Immediately north of northernmost site area.
Qualifying Interests:	[A082] Hen Harrier Circus cyaneus
Conservation Objectives:	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA i.e. Hen Harrier.

In terms of assessing the potential direct, indirect or secondary impacts of the proposed development on the conservation objectives of the aforementioned Natura 2000 sites, it should be noted at the outset that due to the location of the proposed works outside of any Natura 2000 designation, and the separation distances involved in certain instances, it is clear that the subject proposal will not directly impact on the integrity of any European Site (such as by way of habitat loss or reduction), however, I would accept that consideration should be given, in particular, to the potential for the proposal to indirectly impact on the qualifying interests of some of the identified sites. In this respect I would refer to the potential impact on the roosting, breeding and foraging habits of hen harrier within the adjacent Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA and the implications for downstream protected habitats and / or species within the Blackwater River SAC due to any deterioration in water quality which could be attributable to the proposed works due to the hydrological connectivity / links between the application site and that European site.

Therefore, in the interests of conciseness, and in order to avoid unnecessary repetition, I would refer the Board to my earlier environmental impact assessment of the proposal, and, in particular, to the implications of the development for avifauna (with specific reference to the hen harrier) in addition to the hydrological and

hydrogeological aspects of the works, including the potentially negative impacts on downstream water quality which could arise during the construction stage of the proposed development due to the pollution of watercourses through the release of suspended solids or the discharge of hydrocarbons / other contaminants, and those measures which have been incorporated into the design of the proposal to mitigate said risks as supplemented by a series of further mitigation measures, including adherence to best practice construction methodologies.

On the basis of the ecological and hydrological / hydrogeological assessments conducted as part of the EIS, Section 3.3 of the Natura Impact Statement proceeds to summarise the potential impacts of the proposed development on those Natura 2000 Sites where adverse effects cannot be excluded as follows:

- *The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA:*

  On the basis that surveys in 2016 did not locate any breeding pairs of hen harrier inside the SPA within a 2km radius of the proposed development, and as the application site itself lies outside of the SPA boundary, it is submitted that there will be no direct impact arising from the proposed development on hen harriers breeding within the SPA.

  However, given the proximity of the proposed development to the SPA, it is acknowledged that the proposal could potentially indirectly impact on hen harriers within the SPA by way of mortality due to collision with turbines, site avoidance by foraging birds (habitat loss / displacement), or the disturbance of nesting birds, and thus the potential for adverse effects on the European Site cannot be excluded and will require further assessment by way of Natura Impact Assessment.

- *The Blackwater River SAC:*

  There will be no direct impacts as the proposed development site is located outside of the SAC.

  Potential pathways for impact have been identified in the form of a hydrological connection from the proposed wind farm development site to the SAC, in particular during the ground works phase of the construction of the turbines and associated roadways etc. (such as by way of sedimentation, the

accidental release of pollutants, and the risk of landslide). In the absence of more detailed consideration of mitigation measures (e.g. site management and drainage design measures), there is the potential for adverse effects on this European Site which will require further assessment by way of Natura Impact Statement.

The remaining 3 No. European Sites within a 15km radius of the proposed works were screened out as follows:

- *The Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment Special Area of Conservation:*

  With the exception of a short section of new roadway that will be used as a temporary access link to an existing track that leads to Borrow Pit No. 1 which will be within the River Laune catchment, the entirety of the proposed development will be drained to the Blackwater River catchment. Moreover, the aforementioned section of new roadway will be constructed in dry weather conditions over the existing surface thereby avoiding any requirement for excavation works and thus will not give rise to any release of sediment to rivers / streams during its construction. Furthermore, the proposed road works will be carried out in excess of 370m from the nearest watercourse and c. 2.5km upstream of the SAC. Accordingly, as all significant drainage from the site will be diverted to the Blackwater River catchment, there will be no adverse water quality impacts to the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC.

  With regard to protected species within the SAC, I would concur with the conclusions set out in Section 3.2.2.1 of the NIS that adverse effects on same can be screened out in this instance.

- *The Castlemaine Harbour Special Area of Conservation:*

  Due to the distance to the SAC, the nature of the qualifying interests of the designated site, and the location of same within a separate hydrometric area, it is considered that adverse effects on the European Site in question can be screened out.

- *The Lower River Shannon Special Area of Conservation:*

Due to the distance to the SAC, the nature of the qualifying interests of the designated site, and the location of same within a separate hydrometric area, it is considered that adverse effects on the European Site in question can be screened out.

Accordingly, having reviewed the available information, and following consideration of the 'source-pathway-receptor' model, I would concur with the findings of the screening exercise undertaken by the applicant and thus it is my opinion that, in accordance with the precautionary principle, it is not possible to rule out the likelihood of the proposed development adversely impacting on a Natura 2000 site and that particular consideration needs to be given to the likelihood of the proposal to have an adverse effect on the conservation objectives of The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA and the Blackwater River SAC. Therefore, it is reasonable to conclude on the basis of the information available, which I consider adequate in order to issue a screening determination, that the likelihood of the proposed development adversely affecting the aforementioned Natura 2000 sites cannot be objectively ruled out and therefore it is necessary to proceed to 'Appropriate Assessment (Stage 2)'.

8.16.2. *Stage 2: 'Appropriate Assessment':*

With regard to the Stage 2 Appropriate Assessment as set out in the Natura Impact Statement, I am generally satisfied that it has adequately identified the key characteristics of the potential impacts arising as a result of the proposed development which would be likely to undermine the stated conservation objectives of the designated sites. These include the potential indirect impacts on hen harrier breeding within the SPA (by way of mortality due to collision with turbines, site avoidance by foraging birds, and the disturbance of nesting birds) and the potential indirect impact on the integrity of the downstream aquatic environment withinthe Blackwater River SAC arising from a deterioration in water quality consequent on the proposed development. The NIS has subsequently concluded that, subject to adherence to a series of specified mitigation measures, there would be adverse effects on the integrity of the identified Natura 2000 sites as a result of the proposed development.

In order to avoid unnecessary repetition, I would refer the Board to my earlier comments with regard to the implications of the proposed development for the hen harrier as set out in my environmental impact assessment of the subject application. In this regard, I would reiterate my opinion that given the inclusion of the hen harrier within Annex I of the E.U. Birds Directive and the protection afforded to same, the overall suitability of the Barna / Barna Bog area for hen harrier breeding and foraging activities as established by historical records and more recent survey work, and the proximity of the Barna lands to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area, and the availability / potential usage of the said lands by hen harrier from within the SPA, I am inclined to conclude that the Barna area is of local importance to hen harrier and that the proposed development of Turbine Nos. T8 & T9 within same would be likely to have an unacceptable environmental impact on hen harrier in the locality given the consequential loss / disturbance of suitable habitat and the potential risk of collision. Therefore, for the purposes of appropriate assessment, and having regard to the precautionary principle, it is my opinion that it cannot be definitively established that the development of Turbines Nos. T8 & T9 within the Barna area would not have an adverse impact on hen harrier. Accordingly, in order to ensure that the proposed development will not adversely affect the integrity of the SPA or undermine / conflict with the Conservation Objectives applicable to same, I would recommend the omission of Turbine Nos. T8 & T9 by way of mitigation.

Similarly, I would refer the Board to my earlier comments with regard to the hydrological and hydrogeological implications of the proposed development as set out in my environmental impact assessment of the subject application. In my opinion, this outlines how the design of the proposed development, when taken in combination with specified mitigation measures, will not adversely impact on the integrity of the Blackwater River Special Area of Conservation and thus will not compromise its qualifying interests.

With regard to the potential for in-combination / cumulative impacts with other plans or projects, I am also satisfied that the proposed development, subject to suitable mitigation, would not be likely to give rise to any in-combination / cumulative impacts with other plans or projects which would adversely affect the integrity of any Natura

2000 site and would not undermine or conflict with the Conservation Objectives applicable to same.

Therefore, I consider it reasonable to conclude, on the basis of the information available, that the proposed development, when taken individually and in combination with other plans or projects, will not adversely affect the integrity of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA or the Blackwater River SAC in view of the sites' conservation objectives.

8.17. ***Other Issues:***

8.17.1. Public Health Concerns:

Having considered the submitted information, I am not in a position to undertake an extensive in-depth analysis of the wider debate as regards the alleged impact of wind turbines on human health nor do I consider it to be within the remit of the Board to engage in such an exercise.

Whilst I would acknowledge the concerns raised by various third parties with regard to the alleged impact of wind turbines, with particular reference to noise (including infrasound and low frequency sound) and shadow flicker, on human health, the current national planning guidelines with regard to wind energy development do not specifically address the matter whilst the recently published targeted review of same expressly states that any such impacts are beyond the remit of the guidelines. Accordingly, it is my opinion that the Board is restricted to considering the subject proposal in the context of the applicable current guidance and in this respect the submitted information serves to clarify that the development as proposed generally complies (subject to mitigation) with the applicable limit values and thus will not give rise to any overt loss of amenity. The wider debate as regards the alleged health impact of wind turbines is not a matter for the Board and I do not propose to comment further on same.

8.17.2. Public Safety:

With regard to public safety concerns, whilst I would acknowledge previous instances of turbine failure (including blade throw and turbine fires), such occurrences are infrequent, and in light of normal health and safety requirements, in my opinion, do not warrant a refusal of permission.

8.17.3. *Animal Welfare:*

In relation to concerns as regards the potential impact of the proposed turbines on agricultural practices etc. in the surrounding area, with particular reference to livestock and equine operations, in my opinion, the development of wind energy in rural areas is now commonplace and is accepted as being compatible with the prevailing agricultural land use of such areas and without detriment to farming activities etc.

9.0 Recommendation

9.1. Having regard to the foregoing I recommend that the decision of the Planning Authority be overturned in this instance and that permission be granted for the proposed development for the reasons and considerations and subject to the conditions set out below:

10.0 Reasons and Considerations

Having regard to :–

(a) national policy relating to the development of alternative and indigenous energy sources and the minimisation of emissions of greenhouse 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 in 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 Kerry County Development Plan, 2015, including the Kerry County Renewable Energy Strategy contained therein,

(e) the location of the wind farm site in an area which is identified in the Kerry County Development Plan, 2015 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 and the topography surrounding the site,

(g) the characteristics of the site and of the general vicinity,

(h) the pattern of existing and permitted development in the area, including other windfarms,

(i) the distances from the proposed development to dwellings or other sensitive receptors,

(j) the nature and scale of the proposed development, and the range of mitigation measures set out in the documentation received, including the Environmental Impact Statement, Natura Impact Statement, and supplementary information provided to the Board with the grounds of appeal;

(k) the planning history of the site and its surrounds,

(l) the submissions and observations made in connection with the planning application and the appeal, including the observations and submissions made in relation to the environmental and Natura impacts of the proposed development and its grid connection, and

it is considered that, subject to compliance with the conditions set out below, the proposed development would not have a significant adverse effect on the landscape or the visual or residential amenities of the area, would not adversely affect the natural heritage or the integrity of any European site, including Natura 2000 sites or any protected species, would not be prejudicial to public health, and would be acceptable in terms of traffic safety and convenience. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

11.0 **Conditions**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as amended by the further plans and particulars submitted on the 19th day of April, 2017, 26th day of April, 2017, 27th day of April, 2017, 2nd day of May, 2017, 3rd day of May, 2017, 4th day of May, 2017, 5th day of May, 2017, 9th day of May, 2017, 15th day of May, 2017, 24th day of May, 2017 and the 25th day of May, 2017, and

by the further plans and particulars received by An Bord Pleanála on the 26th day of June, 2017, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

Reason: In the interest of clarity.

2. All of the environmental, construction and ecological mitigation measures set out in the Environmental Impact Statement, the Natura Impact Statement, and other particulars submitted with the application and in the further plans and particulars received by An Bord Pleanála on the 26th day of June, 2017, including the 'Silverbirch Windfarm – Pearl Mussel (Margaritifera margaritifiera) Impact Assessment and Review of Proposed Mitigation Measures (Munster Blackwater catchment) Explanatory Addendum', shall be implemented by the developer in conjunction with the timelines set out therein, except as may otherwise be required in order to comply with the conditions of this order.

   Reason: In the interest of clarity and the protection of the environment during the construction and operational phases of the development.

3. The proposed development shall be amended as follows:

   a) Turbine numbers T8 & T9, and their associated access roads and ancillary works, shall be omitted from the development,

   Revised drawings showing compliance with these requirements shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.

   Reason: To ensure the protection of the natural heritage of the site and to avoid any adverse effect on the local population of the Hen Harrier.

4. The period during which the development hereby permitted may be carried out shall be ten 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.

5. This permission shall be for a period of 25 years from the date of the commissioning of any wind turbine. 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 continuance for a further period.

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

6.

   a) The permitted turbines shall have a maximum tip height of 150 metres. Details of the turbine design, height and colour shall be submitted to, and agreed in writing with, the planning authority, prior to commencement of development.

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

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

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

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

h) Soil, rock and other materials excavated during construction shall not be left stockpiled on site following completion of works. Excavated areas including the borrow pits and areas of peat placement shall be appropriately restored within three months of the date of commissioning of the wind farm, to details to be submitted to, and agreed in writing with, the planning authority.

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

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

   Reason: In the interest of air traffic safety.

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

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

   b) 43 dB(A) L90,10min

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

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

Reason: In the interest of residential amenity.

9.

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

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

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

Reason: In the interest of residential amenity.

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

Reason: In the interest of residential amenity.

11.

a) Full details of the upgrading works to the existing site accesses and the associated road improvement works to be undertaken along the public

road at the access points, including any road widening and strengthening, designed to facilitate the proposed development, shall be submitted to and agreed in writing with the planning authority prior to commencement of development.

b) Prior to the commencement of any other development works on the application site, the developer shall have completed, to the written satisfaction of the planning authority, the upgrading works to the existing site access arrangements and the associated road improvement works along the public road in accordance with condition 11 (a) above.

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

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

12.

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

i) a Transport Management Plan, including details of the road network/haulage routes, the vehicle types to be used to transport materials on and off site, and a schedule of control measures for exceptional wide and heavy delivery loads.

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

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

iv) detailed arrangements for temporary traffic arrangements/controls on roads.

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

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

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

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

13. Prior to commencement of development, a detailed reinstatement programme providing for the removal of all turbines and ancillary structures (but not turbine bases, access roads/tracks, cabling or the sub-station) shall be submitted to, and agreed in writing with, the planning authority. On full or partial decommissioning of the wind farm, or if the wind farm ceases operation for a period of more than one year, the masts and turbines concerned shall be dismantled and removed from the site. The site shall be reinstated in accordance with the agreed programme and all decommissioned structures shall be removed within three months of decommissioning.

Reason: To ensure satisfactory reinstatement of the site upon full or partial cessation of the project

14. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that 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,

b) employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and

c) provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.

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 site and to secure the preservation and protection of any remains that may exist within the site.

15. 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.

16. The construction of the development shall be managed in accordance with a Construction and Environmental 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) detailed method statements for construction, including method statements for the excavation of turbine foundations, the excavation of rock from the borrow pits, the crossing of watercourses, and the side-casting of excavated peat at suitable locations.

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

    c) location of areas for construction site offices and staff facilities,

    d) 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,

e) details of on-site car parking facilities for site workers during the course of construction;

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

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

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

i) 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,

j) appropriate provision for re-fuelling of vehicles,

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

l) means to ensure that surface water run-off is controlled in accordance with the mitigation measures proposed in the submitted documents, and

m) proposals for the management of invasive species

n) 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. Prior to the commencement of construction, construction-stage details of proposals for the management of surface water (a Construction Stage Surface Water Management Plan) shall be submitted to, and agreed in writing with, the planning authority. The plan shall set out the detailed measures to be undertaken to protect water quality during construction, and shall include the following:

    a) Construction-stage design of the proposed drainage management system shall be undertaken by a suitably qualified drainage engineer with experience of design and construction in similar environments.

    b) All construction areas shall have measures implemented to control surface water. No direct connectivity (including pumping from excavations) is permitted between construction areas and watercourses, or drains connecting to watercourses, which shall be adequately protected by means of settlement ponds, silt bags/socks/tubes or silt fencing.

    c) Settlement ponds shall be appropriately sized to cater for storm events, and shall be at least of two-stage design or used in train.

    d) Settlement ponds shall be fitted with a penstock control or similar, to control the release of waters. Suitable coir or jute matting or similar shall be used where necessary.

    e) Clear span structures only shall be provided at watercourse crossings; bog mats alone shall not be used to span crossings.

    f) Silt fencing shall be used to protect crossings of watercourses and drains.

    g) Spoil heaps shall be covered or protected with silt fencing.

    h) Construction vehicles and machinery shall be restricted to site roads and hardstanding area, where operating off these areas, bog mats shall be used. A minimum of 50 metres separation distance shall be maintained to watercourses and any drains connecting to them.

    i) Works with a potential to result in pollution or siltation of watercourses shall be supervised by an on-site clerk of works or similar

environmental/construction professional who will report on compliance with the relevant mitigation measures. A daily inspection programme of the surface water management system shall be established and recorded. In particular, the satisfactory operation of the settlement ponds shall be monitored.

Reason: To protect water quality during construction.

18.

a) The quality of water discharging to watercourses shall be such that water quality downstream in the vicinity of Freshwater Pearl Mussel populations does not materially deteriorate as a result of felling or construction relating to the proposed development, by itself or in combination with other development within the Blackwater catchment.

b) Proposals for a detailed programme of water quality monitoring throughout the construction period (including during any felling activities), to illustrate compliance with the above requirement, shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.

c) Continuous turbidity monitors shall be installed upstream and downstream of the site during any felling activities and construction.

Reason: To protect water quality and aquatic ecology, including Freshwater Pearl Mussel.

19.

a) A pre-construction and post-construction monitoring and reporting programme for birds, including Hen Harrier, shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development, following consultation with the National Parks and Wildlife Service. The surveys shall be undertaken by a suitably qualified and experienced bird specialist. Surveys shall be completed annually for a period of five years following commissioning of the wind farm, and copies of the reports to the planning authority shall also be submitted to the National Parks and Wildlife Service.

b) No construction shall be undertaken within 500 metres of any Hen Harrier nest during the breeding season.

Reason: To ensure appropriate monitoring of usage of the area by birds.

20. Rock from the borrow pits shall be won only for the purposes of road/hardstanding 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, and to limit the use of materials from the borrow pits to the specific purposes for which application was made.

21. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads which may be damaged by the transport of materials to the site or by works carried out in relation to the laying of the cabling, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

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

22. 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: To ensure the satisfactory reinstatement of the site.

23. The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000, as amended. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.

    Reason: It is a requirement of the Planning and Development Act 2000, as amended, that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.

Robert Speer
Planning Inspector

28th February, 2018