An Bord Pleanála

Inspector's Report

FILE REFERENCE:	PL08.245464
Location:	Beennanaspuck, Kilmorna, Listowel, Co. Kerry.
Proposed Development:	Wind energy project 3 wind turbines (maximum height up to 125m), 2 new site entrances, new and upgraded internal site service roads, underground cabling and all associated infrastructure. A 10 year permission is sought.
APPLICATION DETAILS:	
Applicant:	March Winds Limited
Planning Authority:	Kerry County Council
P.A. Reference:	14/571
P.A. Decision:	Grant Permission
APPEAL DETAILS:	
Appeal Type:	Third against Grant
Observers:	Kevin Deering & Peter Crossan John O'Sullivan
INSPECTOR:	Sarah Moran
Date of Site Inspection:	13th and 14th February 2016

1.0 SITE LOCATION AND DESCRIPTION

1.1 The site is located in a rural area at the northern end of Co. Kerry, south of the Shannon Estuary and close to the border with Co. Limerick. It is c. 10km east of Listowel and 4km south west of the village of Athea, Co. Limerick. It is located south of the R523 Listowel to Rathkeale regional route. A local road, the L-10071 runs south off the R523 and traverses the site c. 0.7km south of the R523 junction. The Limerick county boundary runs to the east of the site.

1.2 The site has a stated area of 8.83 ha and is part of a large agricultural landholding. It straddles the L-10071, consisting of agricultural pasture to the west of the road and agricultural lands and forestry to the east. The site boundary includes the section of the L-10071 that runs south from the R523, through an existing farm complex (identified in the EIS as Beennanaspuck House). The L-10071 continues southwards from the site boundary towards Kilmorna. Ground levels rise from the 130m contour to the 140m contour from west to east across the site and rise again further to the east towards Knockathea, which rises to 243m. The grassland in this area is characterised by scattered rush tussocks, which is indicative of poor drainage conditions and ground conditions were soft at the site inspection. There were areas of standing water in the grassland to the east of the L-10071, while the field to the west was better drained. Field boundaries comprise hedgerows with some taller trees. The conifer plantation is accessed via forestry tracks from a local road to the east of the site. It is densely planted and served by a network of drains. Some areas on the eastern side of the forest have recently been felled.

1.3 There are several permitted and operational wind farms in an extended area at Knockathea hill to the south east of the development site, within Co. Limerick, 35 no wind turbines in total. The nearest operational wind farms are at Athea and Tooradoo, 9 turbines in total, c. 2km to the south east. The 19 turbine Dromada wind farm is located 7 km to the east. The permitted 4 turbine Toberatooreen wind farm is 6 km to the north of the development site.

1.4 The eastern side of the site is c. 750m from the main part of the Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (site code 004161). The western site boundary is also 250m from a small parcel of land within the SPA.

2.0 PROPOSED DEVELOPMENT

2.1 The proposed development comprises the following:

- 3 no. wind turbines (T9, T2 and T8), maximum blade to tip height 125m, up to 100m rotor diameter and installed capacity of 1.6 MW each.
- Transformers, foundation pads (18m diameter) and crane hardstandings (c. 950m^2) at each turbine site.
- Site drainage network.
- Underground cables to link turbines to each other and to the National Grid via the Athea substation at Athea wind farm.
- Felling of conifer trees for turbine T8 (19,288m^2)
- Temporary construction compound (c. 572m^2) on the western side of the site.
- Road works to facilitate turbine delivery and construction access comprising changes to the western side of the R523 / L-10071 junction, permanent widening and strengthening of the L-10071 between the R523 junction and Beennanaspuck House and the creation of 2 no. site accesses where the L-10071 traverses the development.
- Internal access roads. A total of 1,051m of access tracks (874m new and 177m of existing access track), also new turning area at the eastern site boundary.

The wind farm is designed to have an operational life of 25 years and a 10 year permission is sought. A Natura Impact Statement (NIS) is submitted.

2.2 Further information was submitted to the PA on 19th June 2015 comprising an Environmental Impact Statement (EIS), revised NIS, details of proposed road works, details of proposed grid connection including 2 alternative routes, drainage details. The proposed 2 alternative grid connection routes comprise:

- Option 'A' along forestry tacks northeast of T8, joining an unnamed local road which travels south to Athea wind farm.
- Option 'B' along the L-10071 and the R523 to the local road to Athea wind farm.

3.0 PLANNING HISTORY

3.1 There is no relevant planning history at or near the development site.

4.0 PLANNING AUTHORITY DECISION

4.1 Third Party Submissions

4.1.1 The PA received several submissions, which objected to the development on grounds generally relating to:

- Proximity of site to an SPA, importance of this area for Hen Harrier, possible use of the site by breeding Hen Harrier or for foraging purposes. Possible displacement impacts.

- Hydrological impacts due to contaminated run-off and increased siltation .
- Cumulative impacts due to nearby existing / permitted wind farms. There is currently a very high density of wind turbines in north Co. Kerry.
- Visual impacts including impacts on Ballybunnion Golf Links.
- Inadequacies identified in Co. Kerry Renewable Energy Strategy.
- Adverse impacts on local tourism industry.

4.1.2 There were several additional third party submissions on foot of the further information submission. The following additional points are noted:

- Lack of consultation with local residents, public information day was poorly attended.
- Concerns about traffic impacts and safety of trucks on the turbine delivery route.
- The application is incomplete as the proposed alternative grid connection routes could be changed at any time.
- Concerns about wildlife impacts.
- There is no written consent for the development from adjoining landowners except for Coillte.
- The Athea wind farm turbines were not working for 70% of the time when the noise monitoring for cumulative impact was carried out. The noise monitoring findings are therefore inaccurate. There is already excessive noise from existing turbines in the area.
- Concern that proposed development would lead to additional proposals for wind turbines in the area.
- Adverse impacts on property values in the area.
- Potential impacts on wireless signal.

4.2 Submissions by Prescribed Bodies to Planning Authority

4.2.1 Irish Aviation Authority (IAA) comment 11th September 2014. Recommends conditions.

4.2.2 An Taisce email comment 24th September 2014. Need to comply with national, regional and local policies on wind energy development. Written submission dated 28th September, issues of impacts on visual and residential amenities.

4.2.3 HSE submission 30th September 2014. No objection subject to construction to acceptable standards. Second submission 11th August 2015. No objection subject to compliance with best practice standards.

4.2.4 Department of Arts, Heritage and the Gaeltacht Development Applications Unit (DAU) archaeology submission 3rd October 2014. Agrees with comment of County Archaeologist that archaeological impact assessment

is required. Second archaeology submission 23rd July 2015 recommends archaeological monitoring as a condition of permission.

4.2.5 DAU ecology submission dated 17th October 2014, notes proximity to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, also indication that Hen Harrier have been breeding at or near this location and presence of hunting habitat. Recommends any change of turbines locations T8 and T9 away from SPA boundary be subject to revised AA.

4.3 Technical Reports on File

4.3.1 County Archaeologist report 10th September 2014. No recorded monuments in the immediate area. Requests full archaeological impact assessment due to scale of project. Second report 29th June 2015. Recommends archaeological monitoring of ground works as a condition of permission.

4.3.2 Environment Section report 7th October 2014. Requests additional information for detailed noise assessment.

4.3.3 Biodiversity Officer 15th October 2014. EIA and AA of development to be carried out. Second report 21st July 2015. NIS recommended mitigation mitigation measures should be conditions of permission. Adverse impacts on Natura 2000 sites can be avoided if these are undertaken, maintained and monitored as per the NIS. Concurs with the overall findings of the EIA. Mitigation as proposed in the EIA should be conditioned. Recommends monitoring by an ornithologist of relevant mitigation measures. Separate AA screening report dated 20th July 2015 concludes that significant effects on the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA cannot be ruled out. Concludes with regard to proposed mitigation measures that the application shall not adversely affect the integrity of a European site.

4.3.4 Listowel Roads Office 16th October 2014. Seeks clarification of delivery routes, road widening / strengthening, grid connection, drainage, works to L-10071 serving the site. Second report 17th July 2015 recommends conditions.

4.3.5 Environmental Services memo 10th August 2015 notes that predicted noise levels at nearby houses exceed the recommendations of the 2006 wind energy guidelines. Recommends conditions.

4.3.6 Planning report 16th October 2016. Sub threshold EIA screening concludes that EIA is required in this instance. Recommends request for additional information in relation to EIA; archaeological impact

assessment; issues raised in Roads report; noise assessment; relationship to existing Athea wind farm; photomontages. Second planning report 12th August 2015 concludes that the submitted EIS is adequate. Recommends permission subject to conditions.

4.4 Decision

4.4.1 The PA requested further information on 17th October 2014, for EIA; archaeological impact assessment; details of turbine delivery route and associated road works; noise assessment; clarification if the development is an extension of the Athea wind farm; photomontages from Moyvane and Duagh villages and vantage points indicated in the NIS.

4.4.2 The PA issued a notification of a decision to grant permission on 13th August 2015, subject to 19 no. conditions. The conditions imposed did not involve any substantial changes to the proposed development.

5.0 GROUNDS OF THIRD PARTY APPEAL

5.1 The appeal has been submitted by An Taisce. The following main points are made:

- The main concerns of An Taisce relate to ecological impacts, particularly impacts on Hen Harriers.
- The development site is within the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA.
- The Hen Harrier is a species of high conservation concern in Ireland, listed on Annex I of the Birds Directive, currently considered an All Ireland Species of Concern and UK priority species.
- There have been severe regional declines of the species between the 2005 and 2010 national Hen Harrier surveys, including an observed decline in confirmed breeding pairs in the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA of 35.6%. This is second only to the 40% decline observed in the Mullaghanish to Mushermore Mountains SPA during the same period.
- The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is traditionally a stronghold for the species. The 2005 national survey found 29% of the breeding population in this SPA. Given this importance and the noted decline, it is of paramount importance that land use change and developments such as wind farms in and around the SPA do not negatively impact further on the species.
- Meadow Pipits were one of the most common species recorded at the site surveys. Meadow Pipits and Skylarks are the most commonly taken prey by Hen Harrier in Ireland. There is suitable foraging habitat at the development site for Hen Harrier, i.e. rough grassland with rush tussocks, hedgerows and drains. The presence of prey items such as

Meadow Pipit on site alone indicates the presence of suitable foraging habitat.

- Areas of potential foraging and nesting habitat will greatly increase when areas of Sitka Spruce plantation on site are clear felled. This habitat would be available during the operational phase of the wind farm and not post operation as suggested in the NIS. The 45-50 harvesting age given in the NIS is at the very upper limits of what would be normal in Ireland. It is more likely given site conditions that the plantation would be harvested after 35-45 years.
- The appeal refers to a study by Pearse-Higgins et al (2009), which found that during the operational phase of wind farms, Hen Harrier avoided areas of otherwise apparently suitable habitat within 250m of turbines.
- It is submitted that the disturbance and displacement caused by the proposed wind farm would result in the loss of 20 ha of habitat that would have been available to the Hen Harrier. The loss of habitat is dismissed in the AA on account of the presence of suitable foraging habitat in the area. An Taisce does not believe that there is any precedent to dismiss an impact within an AA on this basis. The only appropriate mitigation measure available is the creation of an area of suitable foraging and nesting habitat of equivalent size to that lost due to the proposed development.
- Food passing behaviour between a male and a female was observed within 850m of T8 on the 29th May 2013. This may indicate the presence of a nest site and certainly indicates that the development site is within the hunting range of an established breeding pair.
- Details of the typical hunting ranges of Hen Harrier are submitted. The appeal states that the hunting range of male Hen Harrier during the breeding season is greater than 0.5km, therefore there is no justification for a 0.5km buffer suggested in the NIS as a mitigation measure.
- The NIS does not consider cumulative or in-combination effects of the loss of foraging habitat that would result from the proposed development.
- The Kerry County Council Renewable Energy Strategy (RES) 2012 states that the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA has no further capacity for wind energy development.
- It is an inappropriate time to consider further wind energy development in an around this SPA as a threat response plan for the Hen Harrier is currently being developed.
- No alternative site solution was proposed, as per the Wind Energy Development Guidelines.

6.0 RESPONSE OF APPLICANT TO APPEAL

6.1 The main points made may be summarised as follows:

- The development site lies within a Strategic Area for wind development and complies with RES Objectives.
- The detailed EIA carried out determined no significant effects.
- The detailed NIS concluded that the development will not have a significant direct, indirect or cumulative impact on the Hen Harrier.
- The EIS consideration of alternatives is based on a detailed constraints and feasibility study. An area to the southeast of the site was buffered and excluded for ecological reasons, primarily the Hen Harrier. A total of 3 no. larger areas were considered in the study, which led to the selection of the subject site.
- The applicant has funded bird survey work in the greater Athea area since 2008.
- The proposed development is 760m away from the main SPA. There is a small parcel of land (c. 5ha) 260m to the west of the turbines, which is part of the SPA. This consists of a degraded form of improved agricultural grassland in lowlands of approx. 100m. Due to the lack of structural diversity, particularly the absence of shrub height cover of woody species, the area is of low intrinsic value for Hen Harrier. Bird survey data indicates that no Hen Harrier activity was observed in this part of the SPA. The distance between the development and the SPA complies with the 250m buffer set in the Kerry County Council RES.
- As per the EIS, bird surveys found no significant use by Hen Harrier of the habitats within the development site footprint. The recorded Hen Harrier activity was predominantly to the east and southeast of the development, at distances indicative of the species use of the main SPA.
- The development site is not suitable for foraging, nesting or roosting Hen Harrier and the surveys completed confirm same. It includes highly modified habitats of agricultural pastures and commercial forestry habitats that are of low intrinsic value to the Hen Harrier. The EIS assesses this issue in detail.
- The presence of Meadow Pipit at the development site alone does not signify foraging habitat and the area surveyed was not limited to the development site but included a greater surrounding area.
- The appellant is drawing conclusions on future habitat for Hen Harrier based on future land use assumptions. However, the land in question is private and outside of the SPA.

7.0 OBSERVER SUBMISSIONS

7.1. Kevin Deering and Peter Crossan

7.1.1 This submission supports the grounds of appeal. The main points made may be summarised as follows:

- Agreement with points raised in the appeal regarding the decline of the Hen Harrier population in the adjacent SPA and the use of the development site by the species.
- It is submitted that the strategic zoning of the site under the RES is flawed due to these potential impacts and proximity to the SPA, also the existence of the threat response plan for the Hen harrier

7.2 John O'Sullivan

7.2.1 This submission objects to the development. The main points made may be summarised as follows:

- Concerns about lack of assessment of cumulative impacts of existing and permitted turbines in north Co. Kerry. A map of permitted turbines as of February 2015, prepared by Kerry County Council Planning Policy Unit, is submitted. Also a copy of the 2012 Co. Kerry Landscape Character Assessment (LCA).
- Turbines would be highly visible due to the topography of the area.
- The total energy generation from 400 turbines in Co. Kerry is approx. 900 MW. The electricity demand for in the county is 93 MW, most of the energy produced is exported.
- Lack of public information regarding grid connection for already permitted turbines in Co. Kerry. The Board has insufficient information to consider cumulative impacts without this knowledge.
- Lack of public consultation prior to the application. The development address is misleading.
- The strategic zoning of the site under the RES is flawed as it is based in an inadequate LCA. The new County Development Plan includes a new LCA just 2 years after the last one. Also, clause 12.0 of the new development plan states that tourism potential needs to be protected from inappropriate developments which might detract from the landscape.
- It is submitted that the only obstacles to wind farm development in north Kerry are impacts on tourism and the Hen Harrier.
- The Board is referred to the publication "*Exploring the Rich Heritage of the North Kerry Landscape*" published by the Kerry Historical Society in 1990, in order to obtain an independent perspective of the history of north Kerry.
- Historical / heritage tourism is estimated to be worth €1.5 bn annually to the Irish economy. There is tremendous potential to develop this type of tourism in north Kerry. The proposed development would have

a severe negative impact on this potential. A list of existing tourism assets in north Kerry is submitted.

- An extract from the North Kerry Jobs Task Force plan is submitted.
- The development site is within c. 1 mile of the proposed link of the 'Great Southern Walkway' from Kilmorna to Listowel which will connect with the existing fully developed Limerick stretch from Rathkeale to Kilmorna and on to Listowel to create the longest railway walk / cycle in the country. This is currently at planning stage and ownership of the disused line is being transferred from CIE to Kerry County Council. It will be a major tourism asset for the area. It would be negatively impacted by any wind farm developments in the area.
- The development site is within approx. 1 mile of the River Feale, which is salmonid. Potential adverse impacts due to runoff, seepage from foundations.
- Clause MA7-9 in the new County Development Plan gives the 'Open To Consideration' area of North Kerry a temporary moratorium on wind farm planning. It is submitted that the development site is within an area of similar population levels, landscapes, historical and heritage value and should have been included in the moratorium.

8.0 RELEVANT PLANNING POLICY

8.1 DoEHLG Wind Energy Guidelines 2006 and Proposed Amendments

8.1.1 Wind Energy Guidelines 2006

Section 3.1 states that the development plan must achieve a reasonable balance between responding to overall government policy on renewable energy and enabling the wind energy resources of the PA area to be harnessed in a manner that is consistent with proper planning and sustainable development. The assessment of individual wind energy development proposals needs to be conducted within the context of a plan led approach.

Section 3.7 states that consideration of any wind energy development in or near designated areas of natural heritage must be subject to Ireland's obligations under the Habitats Directive and the EU (Birds) Directive. Section 3.8 notes that the visibility of a proposed wind energy development from designated views or prospects would not automatically preclude an area from future wind energy development but the inclusion of such objectives in a development plan is a material factor that will be taken into consideration in the assessment of the planning application. Section 3.9 states that wind energy developments are not incompatible with tourism and leisure interests, but care needs to be taken to ensure that insensitively sited wind energy developments do not impact negatively on tourism potential.

Chapter 5 provides guidance on environmental implications. It is recognised that natural heritage may be impacted by wind energy development but that in coming to a decision the planning authority should also consider the importance of the development of wind energy projects including those proposed on designated sites, in view of their strategic importance in contributing significantly to the achievement of the targets by decreasing dependence on fossil fuels, with subsequent reductions in greenhouse gas emissions. Birds may be impacted by wind energy arising from disturbance, collision mortality, barrier to movement and direct loss or degradation of habitats for breeding, feeding and or roosting purposes. Ground conditions, including a landslide and slope stability risk assessment for all stages of the project, should be considered.

Section 5.6 discusses noise impacts, which should be assessed by reference to the nature and character of noise sensitive locations i.e. any occupied house, hostel, health building or place of worship and may include areas of particular scenic quality or special recreational importance. Section 5.12 notes that careful site selection, design and planning and good use of relevant software can help to reduce the possibility of shadow flicker in the first instance.

Chapter 6 discusses aesthetic considerations and the siting and design of wind farm developments. Consideration is also given to landscape character types as a basis for practical application of siting and design guidelines. Section 6.5 provides guidance on cumulative effects.

8.1.2 Proposed Amendments to 2006 Guidelines

The DoECLG conducted a targeted review of the 2006 Guidelines in relation to noise, proximity and shadow flicker. A draft consultation document was produced in December 2013, which proposed the following revisions to the 2006 Guidelines:

- A more stringent absolute outdoor noise limit (day and night) of 40 dB for future wind energy developments, to apply to the combined sound level of all turbines in the area, irrespective of which wind farm development they may be associated with.
- A mandatory setback of 500m between a wind turbine and the curtilage of the nearest dwelling, for amenity considerations.
- A condition to be attached to all future planning permissions for wind farms to ensure that there will be no shadow flicker at any dwelling within 10 rotor diameters of a wind turbine. If shadow flicker does occur, the wind energy developer / operator should be required to take necessary measures, such as turbine shutdown for the period necessary to eliminate the shadow flicker.

A consultation period was allowed, up to 21st February 2014 (which time has now passed).

8.2 South West Regional Planning Guidelines 2010-2022

8.2.1 The Guidelines identify a growing network of wind energy generators in Cork and Kerry as a key energy supply for the region and state that the south west has considerable potential for the generation of electricity from sustainable renewable resources such as wind. Demand for electricity in the region is expected to rise by 60% by 2025. Wind technologies are expected to play a significant part in meeting additional demand with excess renewably generated power being exported through an enhanced transmission grid to other regions within the state. Objective *RTS-09 Energy and Renewable Energy* states 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 Development Guidelines
- consistency with proper planning and sustainable development
- criteria such as design and landscape planning, natural heritage, environmental and amenity considerations

8.3 Kerry County Council Renewable Energy Strategy 2012

8.3.1 The Renewable Energy Strategy (RES) was adopted on 5th November 2012 as variation no. 8 to the 2010-2015 County Development Plan. It replaces renewable and energy policies as set out in section 7.4 of the 2010-2015 plan and policies on wind farm developments as set out in section 13.17.

8.3.2 Section 7.4.2 of the RES states that Kerry is making a significant contribution to the national target of 40% of electricity consumption from renewable sources through wind generated electricity. Kerry's average system demand is 96 MW while its maximum export capacity of electricity from wind is 215.86 MW. Applying a 30% capacity factor, 64.76 MW is actually generated which is significantly higher than the target of 40% of current system demand to be generated from renewables. Co. Kerry is producing 13.65% of the national installed wind capacity on a land area of 6.75% of the national total. Under the Gate 3 Node Assignment published by EirGrid (update 20th May 2011) a total of 296.4 MW has been assigned to the County spread between 16 different projects. This is in addition to the 195.5 MW contracted under Gate 2. However, while the county's theoretical wind energy source is considerable there are environmental, social and economic constraints on the development of wind energy, including factors such as landscape and ecology, which determine the practical capacity for the development of wind. Objective NR 7-24 states:

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.

8.3.3 Map 7.6 of the strategy sets out areas classified as being 'Strategic', 'Open-to-Consideration' or 'Unsuitable for Wind Development', also areas with no grid infrastructure. The subject site is located within an area zoned as a 'Strategic Site Search Area' for the consideration of wind energy developments. Objective NR 7-28 requires a buffer zone of at least 250m between operating wind turbines and the boundary of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA.

8.3.4 Section 7.4.11 sets out the factors which should be considered when making an application for a wind energy development. Section 7.4.5.21 states that turbines shall be located no closer than 2.5 times the blade diameter from the boundary of adjacent properties. Exceptions may be made in cases where written consent of the landowner has been obtained.

8.4 Kerry County Development Plan 2009-2015

8.4.1 The previous County Development Plan was still in force when the subject application was lodged on 27th August 2014. The renewable energy and wind farm policies in the development plan were superseded by the RES, as above. Relevant policies on landscape and tourism are considered in the assessment below.

8.5 Kerry County Development Plan 2015-2021

8.5.1 The current County Development Plan was adopted by the Elected Members of Kerry County Council on 16th February 2015 and is effective since 16th March 2015. Section 7.3 of the plan notes the adoption of the RES in 2012 and states that the development criteria and standards set out in it will be used in the assessment of all planning applications for such development. It states:

Due to the fact that the planning permission for 402 turbines have been granted and 216 of them remain to be constructed, the majority of which are located in the Municipal Districts of Tralee and Listowel, the most densely populated rural area in western Europe, planning for windfarms in areas open to consideration in the Tralee and Listowel Municipal Districts will only be considered when the areas designated as Strategic have been developed to their capacity and the effect of such development can be

fully quantified or when existing turbines in the areas zoned as strategic are considered obsolete have been replaced due to technological advancements by modern turbines producing multiple outputs of energy in comparison to existing turbines.

Relevant policies on landscape and tourism are considered in the assessment below.

9.0 PLANNING ASSESSMENT

9.1 The subject appeal and supporting documentation may be assessed as follows:

- Principle of Development
- Grid Connection
- Landscape and Visual Impacts
- Tourism Impacts
- Drainage, Hydrology and Ground Conditions
- Ornithological Impacts
- Other Ecological Impacts
- Noise
- Shadow Flicker
- Roads and Traffic Impacts
- Archaeology
- Planning Conclusion and Recommendation

This section should be read in conjunction with the Environmental Impact Assessment and Natura Impact Assessment, which are set out separately below.

9.2 Principle of Development

9.2.1 The development site is located within an area zoned as a 'Strategic Site Search Area' for the consideration of wind energy developments under the Co. Kerry Renewable Energy Strategy (RES), 2012. Such areas are described as follows:

"*These areas have economically feasible wind speeds, excellent access to the transmission network, relatively low ecological sensitivity and the receiving landscapes have the capacity to host wind. Thus, wind development in these areas can be developed, installed and made operational relatively quickly. Such areas are within 10km either side of the transmission network. This is not to suggest that sites outside these areas do not have access to the grid, but that in the case of strategic areas, access is particularly good.*

A Strategic Area can accommodate tall turbines laid out in relatively large wind farms, within which, wind developments can benefit from economies of scale in both construction and operation. To achieve their potential these areas must be developed in a co-ordinated way. Proposals must consider the possibility of shared infrastructure and the siting of turbines in any development must consider the need to maximise the development potential of the area as a whole."

Several third party submissions on file state concerns about the suitability of the development site for a strategic zoning under the RES, due to its proximity to the adjacent SPA and to the potential for adverse impacts on same. However, the RES has been subject to Strategic Environmental Assessment. In addition, potential impacts on the SPA and on protected species are considered in the EIS and NIS below.

9.2.2 The development is just outside the 250m buffer to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, as required by objective NR 7-28 of the RES. The RES also requires that turbines are located at least 2.5 times the blade diameter from the boundary of adjacent properties, i.e. 250m in this case. Exceptions may be made where written consent of the landowner has been obtained. Drawing no. 15445-5018 indicates that the 250m area does not extend beyond the landholdings on which the site is situated, except for lands belonging to Coillte to the west. There is a letter on file from Coillte stating no objection to the development, also letters form the owners of the landholdings on which the site is situated. The development is therefore generally in compliance with the RES.

9.2.3 The site is not located in an area where any special designations apply under the current Kerry County Development Plan 2015-2022 or the previous 2009-2015 plan, e.g. zoning restrictions, scenic areas, nature designations.

9.2.4 On the basis of the foregoing, it is considered that the development is acceptable in principle at this location and should be assessed on its merits, in accordance with national and local policy on wind energy developments. In addition, given that it involves the development of land zoned as 'strategic' for wind energy development, it would help to achieve national, regional and local objectives for renewable energy production. It would also maximise the use of already permitted / constructed roads and electricity infrastructure.

9.3 Grid Connection

9.3.1 The recent case Pol O Grianna and Others v An Bord Pleanála is of particular importance to all wind farm proposals. It related to ABP case

PL04.242223 (12/05270), which granted permission for a 6 turbine wind farm (13.8 MW), electricity sub-station and associated works at the townlands of Derragh, Rathgaskig & Lack Beg near Ballingeary, Co. Cork. The application was accompanied by an EIS and by an AA screening report. This decision was the subject of judicial review. Paragraph 26 of the O'Grianna judgement notes that the Board decision did not involve any assessment of the potential environmental impacts of the grid connection stage of the wind farm development. Paragraph 27 states;

"*I am satisfied that the second phase of the development in the present case, namely the connection to the national grid, is an integral part of the overall development …, the connection to the national grid is fundamental to the entire project, and in principle at least the cumulative effect of both must be assessed in order to comply with the Directive*."

The judgement therefore concludes that the wind farm and its grid connection are in reality one project for the purposes of EIA.

9.3.2 The proposed 3 turbine wind farm development has an installed capacity of 4.8 MW (1.6 MW per turbine). It is therefore below the threshold for mandatory EIA, i.e. 5 turbines or output > 5MW, as per Schedule 5 of Part 2 of the Planning and Development Regulations, 2001. The original application lodged with the PA on 27th August 2014, as advertised and as per the documentation on file did not include grid connection and no EIS was submitted. The further information request issued by the PA on 17th October 2014 did not specifically request details of grid connection but asked for clarification of whether the subject proposal is an extension of the existing Athea wind farm. It also requested an EIS. The applicant submitted significant further information to the PA on 11th December 2014, including an EIS. The additional site and newspaper notices did not refer to grid connection. However, the development description in section 1.3 of the EIS includes '*underground cables to link turbines to the National Grid via the Athea substation*". The following underground cable route options are proposed, as per EIS section 3.5 and Figure 7:

- Option 'A' along forestry tacks northeast of T8, joining an unnamed local road which travels south to Athea wind farm.
- Option 'B' along the L-10071 and the R523 to the local road to Athea wind farm.

The EIS proposes that, once finalised, the cable route may be subject to a request for a declaration on exempted development to both Kerry County Council and Limerick County Council under section 5 of the Planning and Development Act 2000 (as amended). Details of the proposed construction methodology are provided. The cable trenches would be excavated to a depth of 1.2m along the road edge or grass verge under the terms of road opening licences from Kerry County Council. Both route options would involve one pipe culvert crossing on a local road south of

the R523. The EIS also states that the developer has grid capacity available for the proposed development under the agreement 'P55JB (OOG) Transmission Connection Agreement', Gate 2 and EIS figure 15.3 indicates the existing transmission lines in North Kerry. Both of the proposed alternative routes are taken into consideration in the EIS and NIS, as discussed below.

9.3.3 RES policy on grid connection as set out in section 7.4.12.8.5 states:

- *In relation to wind farm applications, confirmation should be provided that undergrounding of cables on public roads is to be avoided where possible.*
- *Where it is not possible to avoid public roads, any damage to the road, reinstatement works, both temporary and permanent, or traffic disruptions will be dealt with by the developer in consultation with the Roads Department of Kerry County Council.*
- *Running of powerlines overground or underground in areas with overlapping environmental vulnerabilities / sensitivities will have to be addressed for RE developments. This will be site specific and each RE development will have to take local environmental conditions into consideration.*
- *Any works carried out as part of a RE development, will not preclude the means of laying power cables underground if the cables cross a designated Natura 2000 site, NHA / pNHA or other designated habitat/species.*

9.3.4 Both of the proposed route layouts involve running the cable along a local road to the east of the site, which is within the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. Potential environmental impacts are discussed in detail in the EIS and NIS sections below, along with the adequacy of the EIS and NIS. I note that the second PA Roads report on file dated 17th July 2015 states no objection to the proposed grid connection routes subject to conditions including a requirement for a road opening licence for the route. Given that the development would connect to an existing substation in close proximity, it is considered that the proposed grid connection is sufficiently well developed to allow for consideration of the development.

9.4 Landscape and Visual Impacts

9.4.1 The site is located in an area of North Kerry that is generally characterised by rolling agricultural land with scattered settlements, a substantial amount of one off housing and areas of conifer plantation. I am satisfied that this area is consistent with the 'Hilly & Flat Farmland', character type as identified in the 2006 Wind Energy Development Guidelines. Although this landscape type is usually not highly sensitive in terms of scenery, due

regard must be given to houses, farmsteads and centres of population. The Guidelines provide the following siting and design guidance for this landscape type:

- Location on ridges and plateaux is preferred with sufficient distance from houses and centres of population to ensure that the development does not visually dominate them.
- Limited spatial extent in response to field patterns and topographic features.
- Optimum spacing and layout are regular and linear, a clustered layout would be appropriate on a hilltop.
- Height of turbines should relate to the scale of the landscape elements. The more undulating the topography, the greater the acceptability of an uneven profile, provided if does not result in significant visual confusion and conflict.
- Visibility of 2 or more wind energy developments in the landscape is usually acceptable, given that views across the landscape will be intermittent and partially obscured.

The proposed scheme is generally in accordance with these recommendations.

9.4.2 Maps 12.1a, b and c of the Kerry County Development Plan 2009-2015 set out landscape and zoning designations for North Kerry. The development site is not located in an area where any special designations apply, i.e. the 'Rural Prime Special Amenity' areas. There is an area designated as 'Secondary Special Amenity' to the east of Listowel, close to the development site. Development plan section 12.2.8 states in relation to such areas:

The landscape of areas in this designation is generally sensitive to development. Accordingly, development in these areas must be designed so as to minimise the effect on the landscape. Proposed developments should in their designs take account of the topography, vegetation, existing boundaries and features of the area. Permission will not be granted for development which cannot be integrated into its surroundings.

Potential visibility from individual designated views and prospects is considered below. The landscape designations of the 2009 plan are generally repeated in the 2015 County Development Plan. Section 12.2.2 of the 2015 plan notes the Landscape Character Areas (LCAs) identified in the RES.

9.4.3 The site is located within Area 7 of the RES Landscape Character Assessment, 'River Feale Valley'. A development capacity assessment of this area concludes that these elevated lands have relatively low population levels and the landscape is marginal in some places, consistent with the 'Hilly and Flat Farmland' landscape character type

identified in the 2006 Guidelines. The landscape contains a mix of uses and the topography does not provide any defining features. The high point is in County Limerick to the east, which will provide a backdrop sufficient to limit to some extent the visual impact of turbines. The RES identifies significant capacity for wind energy development in the area, including on the high ground along the Kerry / Limerick Border. Table 7.4 of the RES states;

Capacity on elevated lands. Population in the area may be a constraint. Adjacent to an SPA.

9.4.4 The area to the immediate east of the development site, in Co. Limerick, is within an area defined as the 'Western Uplands' in the Landscape Character Assessment of the Limerick County Development Plan 2010-2016. The LCA describes the area as having an upland character with isolated farmsteads and improved grassland punctuated by blocks of forestry. Development plan objective EH O16 states that the area is 'open to consideration' for wind energy development, also development plan map 8.4. Where wind farm development is permitted a random spacing layout shall be considered to limit the visual and landscape impact. There are no designated areas of special amenity or views or prospects in the vicinity.

9.4.5 In my opinion, having regard to the localised topography, the Zone of Theoretical Visibility (ZTV) identified in the EIS and my inspection of the wider area, potential visual and landscape impacts (including cumulative impacts) may be classified and assessed as follows:

1. Localised views from the R523 and nearby properties.
2. Views from the wider area to the north and west, including the settlements of Knockanure, Moyvane and Athea and the N69 north of Listowel.
3. Views from areas to the north and west beyond the 10km buffer.
4. Views south east of Listowel including the 'Secondary Special Amenity Area' and protected views and the 'Great Southern Walkway' route, also Duagh village.

Each of these may be considered separately as follows. The assessment is based on the above policy guidance, the EIS landscape and visual impact assessment (LVIA), the site inspection and an extensive site visit to the wider North Kerry / South Co. Limerick area, including all of the viewpoints (VPs) identified in the EIS LVIA.

9.4.6 <u>Local Views</u>

EIS VPs 1, 2 and 4 represent localised views of the development from the R523 and the immediate vicinity of the site. VP 3 is a wider view from an elevated location nearby to the east of the site. There are no designated

views or prospects in this area. The proposed turbines would be prominently visible in the landscape and would be intermittently visible in combination with turbines within the nearby Athea, Tooradoo and Dromada wind farms. Having regard to the rolling nature of the topography, the presence of screening vegetation, the anthropomorphic nature of the rural farmland landscape and with regard to the limited scale of this 3 turbine development, I concur with the EIS conclusion of moderate visual and moderate-minor landscape impacts at VPs 1, 2 and 4 and moderate-substantial visual and moderate landscape impacts at VP3.

9.4.7 Views from Areas to the North and West

There are panoramic views of the development site from locations to the north and west of the site, along the local road serving the settlements of Knockanure and Moyvane, north of Athea village and along the N69 north of Listowel. Knockanure, Moyvane and Athea are local settlements and the N69 is a busy route linking Listowel to Tarbert. There are no designated views or prospects in this area. EIS VPs 5, 6, 7, and 8 represent views from this area. The proposed development is clearly visible in the context of the wider agricultural landscape. Many views also encompass several of the other wind energy developments in North Kerry including Athea, Tooradoo and Dromada, particularly views from the N69. The cumulative visibility in the wider landscape is acceptable with regard to the guidance for this landscape type provided in the Wind Energy Development Guidelines. I concur with the EIS conclusion of slight-moderate visual and moderate-minor landscape impacts from these VPs.

9.4.8 Views from Areas to the North and West > 10km

There are several views in the wider North Kerry area, within the 20km ZTV radius, which are designated for protection. These comprise secondary special amenity areas along the North Kerry coast, protected views on roads east of Ballybunnion, also views in the region of Tarbert and Glin within Co. Limerick. The EIS assessment concludes that visual impacts are unlikely at this distance, based on a wireframe assessment of potential views. I agree with this assessment with regard to the nature of the topography and to my site inspection.

9.4.9 Views from Areas to the Southeast of Listowel

There are intermittent views of the development from roads to the south east of Listowel, which open to wider views from the settlement of Duagh and along the R555 towards Abbeyfeale. This is the area of greatest sensitivity with regard to County Development Plan landscape designations.

EIS VP 9, the R523, represents protected views from the 'Secondary Special Amenity Area' east of Listowel. It is also representative of views from the 'Great Southern Walkway' proposed walking route along the old Tralee to Fenit railway line, an issue that is raised in the submission of John O'Sullivan. The EIS states that the protected view is along the River Feale. While this point is accepted, I would consider that the wider landscape context should also be respected. The proposed development would be clearly visible in the middle ground, with some vegetative screening. Turbines from several other wind energy developments would also be visible, the EIS states that 10 turbines are visible at present. The EIS notes the status of the area and concludes that the development would have a moderate visual impact and minor adverse landscape impact on VP 9, noting the availability of screening and the anthropogenic landscape. I accept this conclusion.

EIS VPs 10, 11 and 13 are the wider views of the development from elevated stretches of the R555 and from the settlement of Duagh. There are protected views from the road, northward over the River Feale Valley and towards the development site. The proposed turbines would therefore be visible from some distance. The development would be visible in the context of the surrounding agricultural landscape, along with electricity pylons, conifer plantations, several other wind energy developments and a substantial amount of one off housing and other settlements. I accept the EIS conclusion of moderate visual impact and minor landscape impact from these VPs.

VP12, the N21 south west of Abbeyfeale is a more distant panoramic view of the development in the context of the North Kerry / South Limerick countryside. There are no special landscape designations under the Limerick County Development Plan. The same issues apply as at VPs 10, 11 and 13, but at a greater distance. I concur with the EIS assessment of neutral visual impact and minor adverse landscape impact.

9.4.10 <u>Conclusion</u>

The site of the proposed 3 turbine wind energy development is zoned as 'strategic' under the Co. Kerry RES 2012, which was prepared with regard to an LCA of the county. It is located in an area where no special landscape designations apply under the Kerry or Limerick County Development Plans. Its design and layout are generally in keeping with the guidance provided in the DoEHLG Wind Energy Development Guidelines for the relevant landscape type. I am satisfied that the development would not have a significant adverse visual or landscape impact with regard to the above assessment, including designated views and prospects. While it is acknowledged that the change likely to arise is considered to be negative at some locations, it is not considered a

significant one that would constitute unacceptable detrimental effects on the character or values of the area. Section 3.8 of the Wind Energy Guidelines is noted in particular:

"*The visibility of a proposed wind energy development from designated views or prospects would not automatically preclude an area from future wind energy development*…"

The development would have an additional cumulative impact as it would be visible in conjunction with several other wind farms in North Kerry, from various vantage points. However, this is considered acceptable given the landscape type in which it is situated and with regard to the DoEHLG guidance. It is also noted from the EIS that there would be no additional visual impacts associated with the proposed underground grid connection route.

9.5 Tourism Impacts

9.5.1 Objective T-4 of the 2015 County Development Plan aims to:

Protect conserve and where appropriate enhance through the enforcement of the objectives and development standards of this Plan, the natural, built and cultural heritage features that form the basis of the County's tourism industry, including biodiversity, areas of important landscape, coastal scenery, areas of geological and scientific interest, historic buildings, archaeological sites and monuments and the traditional form and general appearance of towns and villages.

There is a similar objective, T 6-2, under the 2009 County Development Plan. Having regard to the above assessment of visual impacts and the EIA and AA below, it is considered that the proposed development would not mitigate against these objectives.

9.5.2 The submission of John O'Sullivan raises concerns about potential visual impacts on the proposed Great Southern Walkway along the old Tralee to Fenit railway line and consequent tourism impacts, also general impacts on the potential for tourism development in North Kerry. There are several policies in the current and previous County Development Plans relating to the creation and protection of walking trails and marked ways. Map 9.1 of the 2009 plan indicates an extensive network of long-distance waymarked walks, however it does not include the Great Southern Walkway. Section 9.7.7 of the 2009 states a policy to consider proposals for development of former railway lines for local heritage and outdoor activities including the provision of recreational walkways. Objective SG 9-32 of the 2009 plan includes the promotion and protection of the Tralee to Fenit Railway Line. Table 7.4 of the 2015 plan identifies former railway lines in Co. Kerry that

have the potential to be developed as 'greenway' walking and cycle routes and includes the Tralee to Fenit line. It is stated that preliminary environmental assessments have been undertaken on the Tralee-Fenit Greenway. Development plan objective RD-31 is to support the sustainable establishment of a network of interlinked cycle ways and walk ways within the County and the adjoining Counties, including the Tralee to Fenit route. Given that the proposed development is considered not to have an adverse visual impact on the potential walking route along the Great Southern Walkway, it would be compatible with this objective.

9.5.3 Section 3.9 of the Wind Energy Guidelines states with regard to general impacts on tourism:

"*Wind energy developments are not incompatible with tourism and leisure interests but care needs to be taken to ensure that insensitively sited wind energy developments do not impact negatively on tourism potential. The results of survey work indicate that tourism and wind energy can co-exist happily*."

The development is located in an area where wind farms are acceptable in principle and where no specific restrictions apply. As discussed above, it is considered that it would not have a significant adverse visual or landscape impact on any designated scenic routes or protected views. There is no evidence that there would be any adverse impact on any other specific tourism product either in the immediate vicinity or the wider area, e.g. Ballybunnion beach, Listowel village. To conclude, it is considered with regard to the above that the development would not have any adverse impacts on either tourism amenities in general or on any specific tourism product.

9.6 Drainage, Hydrology and Ground Conditions

9.6.1 <u>Existing Soils and Ground Conditions</u>

The site and the surrounding area are dominated by agricultural grassland interspersed with blocks of coniferous forestry and areas of cutover bog, the latter predominantly to the east of the site at elevations >200m. The proposed turbines T2 and T9 are located within agricultural grassland and T8 is within conifer plantation. The site has a shallow slope from west to east with lands rising from the 130m contour to the west to over 140m to the east. Ground conditions were soft underfoot at site inspection, consistent with sustained levels of soil saturation. There were areas of standing water on the eastern side of the site, which appears to be the most poorly drained area. According to the EIS, much of the development footprint and adjacent lands were subject to commercial turf cutting in the past. The previously marginal lands were subsequently developed for

intensive grass production and the exhausted cut over bog was afforested for commercial timber production. The GSI database indicates the underlying bedrock as Namurian sandstone, siltstone and mudstone, with cutaway peat subsoils throughout the site. Site investigations carried out at the site in 2014 and early 2015 indicated shallow clay topsoil to a depth of c. 1m, underlain by a clayey till. Evidence of peaty material within the clay in places is attributed to remnants of land reclamation works in peaty soils. There are no records of ground instability within a 15km radius.

9.6.2 Existing Hydrology

The lands at the development site are drained by open drains along field boundaries and within the conifer plantation. There are no natural watercourses at the site but mapping indicates that it drains to 2 no. sub-basins of the River Feale, which is part of the Lower River Shannon SAC river system. As mapped, one sub basin drains southwards to the Feale via an unnamed stream within the conifer plantation. However, site surveys found no evidence of any watercourse at this location or within a 20m wide search corridor. The survey determined that this stream actually originates over 500m to the south of T8 and is separated from T8 by the intervening conifer plantation. This is the nearest natural watercourse to the proposed development. Maps indicate that the other sub basin drains to the River Galey, via a stream with a source approx. 250m north west and upslope of T8, running along the edge of the conifer block before crossing the local road at the forest entrance. Site surveys found a culverted steam draining from a point adjacent to the forest entrance to the Galey, however this flow originated from a point to the east outside the landholding of the development site. The Galey river system is also part of the Lower River Shannon SAC. I note that EIS section 5.3.6.2.5 states that the drainage ditches around the site have no links to any Habitats Directive Annex I habitat category. Section 5.3.6.3.2 concludes with regard to the site surveys that the development site does not intersect with any stream.

The site lies within the Abbeyfeale Groundwater Body (GWB). The aquifer is classified as moderately productive only in local zones. There are no rock outcrops or major faults at the site, diffuse recharge in this GWB will occur via rainfall percolating through subsoil. Groundwater flow is shallow, generally occurring within the top 15m of the aquifer. Due to the presence of impermeable soils, a high proportion of recharge will discharge to surface waters via the upper layers of the aquifer, i.e. ground water and surface waters are closely linked. Groundwater vulnerability ranges from moderate to high within the site. T2 and T8 at the eastern side of the site are located in a moderately vulnerability area due to low soil permeability. Groundwater seepage was observed at T2 during site inspections. T9 in

the field on the western side of the site is located in a high vulnerability area, consistent with its better drainage characteristics.

9.6.3 Soils Impacts

EIS table 7.1 indicates projected volumes of excavated and imported material. The total volume of excavated material for new and upgraded access roads, drains, turbine bases and hardstands, etc. is 6,440m^3. A total of 6,401m^3 of this material is to be reused as topsoil, backfill or drainage mounds. No on-site borrow pit is proposed. A total of 5,177m^3 of stone would be imported from local quarries, i.e. similar stone to that found at the development site. EIS section 2.4.6.2 provides a list of suitable quarries in West Limerick and Co. Kerry. Concrete and reinforcing steel would also be imported for the turbine bases. The 5m wide site access roads are to be constructed over the existing surface using floating road construction techniques to avoid excavation. The finished road surface would be 0.45m above the existing ground level and would follow the existing profile. The access road construction involves excavation of an area of c. 10m at the junction with the public road. It is not considered that this would have any significant adverse impact.

The development involves tree felling within the forested part of the site, to facilitate the creation of an access track to T8. Approx. 1.9 ha would be clear felled, all excess trees, brash and minor branch residues are to be removed from the site. Felling activities at the site are to follow Forest Service Guidelines. Keyhole felling is to be applied to minimise the development footprint.

The EIS sets out measures for the management of construction materials, hydrocarbons and construction waste, along with the drainage measures discussed above and mitigation measures for forestry felling. EIS section 7.3.3.5 addresses potential impacts on ground stability. The site is gently sloping managed grassland and commercial forestry with no peat present. No significant impacts on ground stability are envisaged. This conclusion is accepted. EIS section 7.4.1.3 recommends relevant mitigation measures, including detailed site investigations in advance of ground works.

Having regard to the proposed construction methods and mitigation measures as set out in the EIS, I am satisfied that the proposed development would not have any significant adverse impacts on soils at the development site, subject to the satisfactory implementation of the proposed mitigation measures. While the EIS does not consider potential impacts on soils as a result of the proposed grid connection route, it is considered that the ground works involved would not have any adverse

impacts given that they would take place in areas that have already been subject to forestry and construction works.

9.6.4 Drainage Design and Water Impacts

Potential water impacts primarily relate to the construction stage of the development. The EIS sets out a drainage design with a suite of well-established drainage mitigation measures to be carried out during construction. The proposed measures are based on the diversion of surface water flow away from construction operations, followed by separate attenuation and treatment of construction run off. Existing 'clean' surface water flow, including overland flow and existing drains, is to be collected upstream of excavations, construction areas and temporary storage areas using interceptor drains, then piped through the works areas to drains on the downhill side of the site. The clean water discharge is to be dispersed via a discharge channel or perforated pipe to attenuate the flow rate. Continuous earth mounds would be used to isolate runoff from works areas and roads during construction. Drainage from works areas (turbine sites and roads) is to be collected and routed towards 3 stage modular settlement ponds with stone filters prior to controlled release over vegetated surfaces on low slopes. Water would be pumped from turbine excavations when necessary. Check dams and silt fences would be used to remove silt from construction runoff and control flow rates. There would be no direct discharges to any watercourses and all drainage waters would be dispersed as overland flows, with no increase in discharge rates above that which already exists at the site, i.e. no increased flood risk. Drainage calculations are provided, including Met Éireann rainfall data and attenuation design. Existing forestry rills and collector drains within the dispersion zone are to be blocked off where necessary to prevent flow concentration. Section 3.7.3 outlines details of additional mitigation measures to protect water quality during construction and tree felling. There is to be ongoing monitoring and maintenance of water quality at the site and of the drainage and treatment system during construction.

The temporary construction compound would be used to store construction materials and includes staff services and amenities. Projected wastewater production during construction is estimated to be the same as wastewater production (2000 l/day). An enclosed wastewater management system at the temporary compound, to manage demand from 30 people working at the site and to discharge to a holding tank. It is proposed to import water by tanker to the site during construction. Construction wastes are to be disposed of as per the submitted CEMP. The EIS outlines mitigation measures for fuel storage and management.

The settlement ponds would be removed when construction is complete. Runoff from roads, crane hardstands and other works areas would drain to outfall wiers put in place to control drainage dispersions rates during construction. Check dams within the drainage channels would remain in place. Outflow would thereby be attenuated and dispersed across existing vegetation before reaching downstream receiving waters. Water monitoring would continue during years 1 and 2 of the operational phase, commencing when construction is complete. Section 3.6.3 of the EIS states that the small area of hardstanding involved and the location of the site within a large rural catchment with an open drainage system result in a negligible downstream flood risk.

The grid connection cable route does not involve any in-stream works. Both of the proposed routes cross one culverted stream at a local road connecting to the R523 to the existing Athea wind farm. This stream drains to the Galey river system, which discharges to the Lower River Shannon SAC via the Cashen river. The cable duct is to be accommodated either in the road if there is sufficient clearance over the culvert or by directional drilling under the culvert, thereby avoiding any interaction with the watercourse.

I am satisfied that the proposed development would not have any significant adverse impact on the water environment subject to the satisfactory implementation of the proposed mitigation measures.

9.6.5 Conclusion

The development is considered to be acceptable in terms of the potential impact on water and soils, subject to the strict implementation of the submitted mitigation measures.

9.7 Ornithological Impacts

9.7.1 Designations in the Area

The development site is in close proximity to the Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA, which is designated under the E.U. Birds Directive, of special conservation interest for Hen Harrier (Birds Directive Annex I). The eastern side of the site is c. 750m from the main part of the SPA and the western site boundary is 250m east of a parcel of land that is also within the SPA, see enclosed maps. According to the site synopsis, the SPA is a stronghold for Hen Harrier. It supports the largest concentration of the species in the country and is among the top 2 sites in the country for the species. The mix of forestry and open areas provides optimum habitat conditions for the Hen Harrier. The early stages of new and second-rotation conifer plantations are the

most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. Hen Harriers will forage for birds and small mammals up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. Birds will often forage in openings and gaps within forests. Several other species of conservation importance have also been noted within the SPA, i.e. breeding Short-eared Owl and Merlin (both also Annex I) and Red Grouse on some of the unplanted areas of bog and heath (Annex II). The site synopsis notes that the site has a number of wind farm developments but it is not yet known if these have any adverse impacts on the Hen Harriers.

9.7.2 Adequacy of Bird Survey Information

The analysis of ornithological impacts in the EIS and NIS is based on the following bird surveys carried out at the site:

- A summer bird survey April – August 2013 (5 months). Including a vantage point (VP) survey for raptor species such as Hen Harrier. Also a breeding bird survey during the same period.
- Winter bird surveys during the periods October 2013 – March 2014 (6 months) and October 2014 to March 2015 (6 months). Including VP surveys for raptor species, also general winter bird survey.

The Scottish Natural Heritage (SNH) document *Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms* (May 2014) provides the following guidance on bird surveys, which is considered relevant:

- The main breeding and wintering bird survey areas should extend at least 500m beyond the development/planning application boundary. For access tracks and grid connections, the survey area should be 500m either side of the proposed limits of variation of the route. However, depending on the species using the area, there may be a need for further species or species group-specific survey to establish nest, roost or display sites up to 6km from the proposed development site.
- Survey design should be based around times when birds are likely to be most active.
- Survey work should span all times of the year. SNH recommends survey for a minimum of 2 years to allow for variations in bird use between years.
- VP survey must not take place simultaneously with any other fieldwork on the site, as it may cause disturbance and invalidate the VP survey results. The VP survey should cover the defined survey area encompassing the proposed turbine envelope, or the maximum extent of potential turbine layouts, and should extend to 500m beyond the outermost proposed turbines. VP surveys should be spread over the

full daylight period available and across all calendar months when the species is present or likely to be so. Migration watches should take account of key periods for the target species to be surveyed. The document recommends a minimum of 72 hours per VP location divided between seasons (36 hours breeding and 36 hours non-breeding) per year.

I note that VP survey work was carried out in two separate years and that the VPs used extend well beyond the turbine envelope. I also accept that the development site does not include habitats that are likely to be used by bird species of conservation concern. However, the summer bird survey was carried out in one year only. While the geographical extent of the survey is acceptable, the duration is lacking. Section 3.5 of the SNH document states:

"*In recognition of the wind farm industry moving into more sensitive bird areas, including locations potentially impacting on the qualifying interests of designated sites, two years survey will be required unless it can be demonstrated by the developer that a shorter period of survey is sufficient.*"

Comprehensive survey work is necessary in order to create a detailed picture of bird distribution and flight activity and the usage of the development site by key bird species. The information can then be used to predict the potential effects of the wind farm on farm on birds at the site. The survey work carried out is limited overall with regard to SNH recommendations and the applicant has not provided any rationale for this limited duration. Although the SNH document has no status in this jurisdiction, it is a good example of best practice, which is considered particularly relevant to this site due to its sensitive location between 2 parts of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. The availability of adequate bird survey information is essential to the assessment of potential impacts on the Hen Harrier, the protection of which is the conservation objective of the SPA, and on the other bird species of conservation interest which are known to be present in the area. While the extent of the survey is acceptable, the limited overall timeframe of the available survey information is insufficient to give a representative and accurate determination of the usage of the study area by key target bird species of conservation interest. The survey data submitted, therefore, fails to present a complete picture of the various bird species present at the site and their movements. This absence prevents a scientifically robust assessment of the site with regard to potential ornithological impacts.

9.7.3 Potential Birds Impacts

Potential impacts on the individual bird species observed at the site, including collision risk, may be considered as follows. Collision risk avoidance rates for various species are derived from SNH data.

Hen Harrier

The particular importance of the Hen Harrier in this area is noted. The EIS states that survey data from a NPWS national survey in 2010 indicates that the Hen Harrier population in the adjacent SPA has decreased by 35.6% since 2005. The Irish population is amber listed due to a decline in the breeding population. In Ireland, the species is closely associated with upland open moorland (heather) habitats and also with farmed landscapes characterised by rushy fields, bushy hedgerows and marginal areas. Hen Harrier is a ground nesting species. It hunts in open habitats and forages over a wide area up to 5km radius from the nesting or roosting site, feeding mainly on bird and small mammals. It traditionally nested in open moorland but there is a recent trend towards nesting in young pre-thicket conifers, as noted in NPWS national survey data from 2010. This data indicated that there was still a preference for open moorland habitats for foraging activity. Analysis of a 2005 NPWS national survey concluded that the species strongly avoids improved agricultural grassland as nesting habitat.

EIS Tables 6.10 and 6.11 summarise Hen Harrier observations during the site surveys. It lists a total of 22 no. observations of Hen Harriers. Drawing no. 15445-SK04 (Appendix 3) illustrates patterns of flight path activity. The majority of the observed activity occurred at an area of cutover bog and scrub outside the development site to the south east of T8, identified as 'Area C' in drawing no. 15445-SK04. A nesting pair were observed in this area, c. 850m south east of T8, on 29th May 2013. There were also 3 no. observances of activity in an area of heath / cutover bog identified as 'Area A', to the north of the R523, c. 1km from T9. The timing of these observations at dawn and dusk suggests that the area was in use as a roosting site during this period. Overall the closest Hen Harrier flight to the proposed development was along a flight path parallel to the conifer plantation edge, c. 300m east of T9, an area identified as 'Area B', close to part of the SPA.

EIS section 6.3.1.1.1 notes that there is a clear association between habitat composition and Hen Harrier activity. The quality and quantity of habitats are known to influence Hen Harrier distribution. Areas with < 30% cover of bog, rough pasture or young forest are avoided by Hen Harriers. The turbines, access tracks and cable routes are in habitats of low intrinsic ecological value as potential nesting or foraging habitat for Hen Harrier, particularly in the context of the extensive availability of excellent nesting and foraging habitats in the adjacent SPA. Improved agricultural grassland is strongly avoided as a nesting habitat and is not considered to have a high resource value as a foraging habitat. T8 is located within closed canopy conifer plantation, which was planted in late 1989 to early 1990 will not be felled for another 20-25 years. This does not provide roosting habitat and is unsuitable as breeding habitat. The EIS notes that site surveys observed no active hunting over the canopy. Hen Harriers are expected to continue to prefer higher value foraging and breeding habitats in the

wider area, particularly in the SPA, rather than any of the habitat types present at the development site. The EIS concludes that the significance of potential impacts on Hen Harrier habitats is Medium. I note that this assessment does not consider potential impacts associated with the recent felling of conifers to the east of the site, as noted at site inspection. This could create a new area of Hen Harrier habitat if replanted.

Hen Harrier could be affected by noise and human presence during the 9 month construction period. With regard to the survey data and to the known habitat preferences of Hen Harrier, it is expected that the species is unlikely to be active at the development site during this period. The EIS attributes medium significance to potential unmitigated disturbance / displacement impacts during construction.

The collision risk avoidance rate for adult Hen Harrier is 98% The assessment assumes that existing patterns of foraging activity would be maintained and that the development site is not used as breeding habitat by Hen Harrier. The EIS concludes on this basis that there is a low collision risk for Hen Harrier at the development site. EIS section 6.3.2.4.2 considers potential cumulative collision risks, which could be caused by the number of wind energy developments in the area or by changes in behaviour by the species. It notes that there was no indication that Hen Harrier bred or attempted to breed within or adjacent to the wind farm footprint. The addition of the proposed development to the other proposed / permitted wind farms in the area would have a low cumulative collision effect on Hen Harrier due to the nature of their foraging behaviour. However, this would depend on the number and frequency of birds observed at other proposed and existing wind farms.

The DoAHG comment on file dated 17th October 2014 states:

Turbine T9 is located approximately 250m east of an outlying area of the above SPA. Turbine T8 is located approximately 750m from the boundary of the SPA to the east. The hen harriers recorded in 2013 approximately 850m from turbine T8 appear, from the description the screening for Appropriate Assessment (p. 13), to have been breeding at or near this location, which is close to, if not within the SPA boundary. Hen harriers are considered to significantly hunt up to 4 km from their nests, but avoid any suitable hunting habitat within 250m of operational turbines (disturbance displacement). However, the habitat types within 250m of the turbines are improved pasture and conifer plantation, which do not provide continuous foraging habitat (although secondary rotation does provide good habitat for 7 years out or 35). Given that the plantation has not been designated, it is considered that sufficient foraging habitat exists within the SPA and elsewhere (in heath and bog areas) to sustain the breeding pair.

The NPWS comment is noted and I accept that the development site is not likely to be used by Hen Harrier for breeding and foraging purposes. However, the deficiencies of the available bird survey data have consequences for the addressing of potential impacts of usage of the site by Hen Harrier.

Other Raptor Species – Kestrel, Merlin, Sparrowhawk

Site surveys noted 7 no. observances of Sparrowhawk and 4 no. Merlin observances. As is the case for Hen Harrier, the habitats at the development site

are not considered to have a high resource value for these species as breeding or foraging habitat. The EIS attributes low significance to potential unmitigated disturbance / displacement during construction activities. Sparrowhawk have a collision avoidance rate of 95% and merlin have a rate of 98%. The EIS assesses collision risk as negligible for both species. Kestrel were observed throughout the surveys. The development site does not offer suitable breeding habitat for this species. While the habitats may be used for hunting potential impacts as a result of habitat loss are not considered significant due to the small footprint of the development and the presence of abundant habitats of equivalent ecological value. The EIS concludes that there is very low potential for significant habitat loss or disturbance / displacement during construction. The collision avoidance rate for Kestrel is 95%, the EIS assesses low collision risk. I note that these conclusions are based on limited bird survey data as above.
Waders - Golden Plover and Snipe
Golden Plover were observed once during site surveys. Snipe were recorded 68 times during site surveys. The EIS assesses habitats impacts as very low for these species. Given the lack of recorded observations of Golden Plover at the site and the species avoidance rate of 98%, collision risk is assessed as negligible. It is likely that Snipe would preferentially select habitats of a type not available at the development footprint or cable route. The EIS assesses collision risk as low. I note that these conclusions are based on limited bird survey data as above.
Passerines
Site surveys noted the presence of 3 no. red listed passerines at the development site, i.e. Yellowhammer, Grey Wagtail and Meadow Pipit. In particular, Meadow Pipit were recorded frequently throughout the area during site surveys. A total of 11 no. amber listed passerine species of conservation concern were also observed. These are ground nesting birds that preferentially select undisturbed areas for breeding, i.e. conditions not available at the development site. The EIS assesses potential habitat loss and disturbance / displacement impacts as low significance. Collision by resident passerines is not considered to be a significant issue as their breeding activity is generally well below the height of rotor blades. The EIS concludes negligible collision risk. According to SNH guidance, passerine birds are not potentially threatened by wind farms. The EIS conclusion is therefore accepted.
Gulls and Cormorant
Herring Gull (Red Listed) and Cormorant (amber listed) were each observed once during site surveys. Lesser Black-headed Gull (amber listed) were observed during each of the survey periods. The EIS concludes that the individuals observed are not reliant on the food resources available within or adjacent to the footprint of the proposed wind farm. The EIS assesses potential habitat loss and construction disturbance impacts as very low. All gull species have a collision avoidance rate of 98% and the EIS assesses the collision risk as negligible. The collision risk to Cormorant is assessed as negligible due to its low incidence at the site. I note that these conclusions are based on limited bird survey data as above.
Owls

Barn Owl (Red listed) and Short-eared owl (amber listed) were not recorded during site surveys. There are ad hoc records of Barn Owl at a building located over 900m south east of T8. Short Eared Owl are known to have nested in the adjacent SPA site. The development site does not provide suitable breeding habitat for these species. Barn Owl typically hunt at heights low above the ground (<3m), well below wind turbine blades. The habit types at the development site do not contribute significantly to prey resources available. The EIS concludes that there is very low potential for habitat loss or significant disturbance / displacement during construction. The low flight heights of owls prevents collision risk, which is assessed in the EIS as negligible. I note that these conclusions are based on limited bird survey data as above.
Red Grouse
Red Grouse (Red listed) were not recorded during site surveys, however they are recorded on areas of upland bog and heath within the adjacent SPA. This species is ground nesting and associated with heather dominated heaths and bogs and habitats impacts are not considered significant. The EIS concludes that there is very low potential for significant habitat loss or disturbance / displacement during construction. This species typically flies at heights below blade sweep and the EIS assesses collision risk as negligible. I note that these conclusions are based on limited bird survey data as above.

9.7.4 Ornithological Impacts Conclusion

It would appear from the EIS assessment and from the available bird survey data that the development site offers limited resources and is not generally not used as a roosting or foraging habitat by the above bird species. However, the deficiencies of the available bird survey data have consequences for the addressing of potential impacts of usage of the site by bird species of conservation concern. While it is recognised that a large body of work has been undertaken with regards to the ornithological assessment of the proposed development, the underlying methodology is inadequate with regard to the limited duration of bird surveys at the development site. Survey data of the highest standard is necessary to form a robust scientific basis for subsequent analysis of ornithological impacts at the development site, as regards gauging overall bird activity and usage of the site, the assessment of collision risk and the AA of potential impacts on designated sites. These concerns are heightened in the context of the development site, which is adjacent to several other permitted/proposed wind energy developments and to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. I also note that a forested area to the east of the development site has recently been felled, this could create new habitat for Hen Harrier, with consequent impacts for the species, an issue which warrants further consideration.

9.8 Other Ecological Impacts

9.8.1 Habitats Impacts

The development site has no significant or semi-natural component and is highly modified. Agricultural grassland and forestry are the dominant habitats present. There are no links to any Habitats Directive Annex I habitat category. The analysis of potential impacts in EIS section 5 identifies the loss of sections of the hedgerow / tree line habitat at the wind farm site, c. 35m in total. The grid connection route does not involve any clearance of roadside vegetation. The EIS notes that there is abundant similar habitat of equivalent ecological value available within and adjacent to the development site and concludes that any potential habitat loss or alteration impacts would be imperceptible. Mitigation measures are proposed for hedgerow removal. Having regard to the heavily modified habitats present at the development site and to the small footprint of the development, I conclude that there would not be significant adverse habitats impacts. Given that habitats impacts are not significant, consequent impacts on fauna present at the site are unlikely.

9.8.2 Aquatic Species

The drainage of the area is discussed above. The EIS states that no surveys for aquatic species were carried out on the basis that the nearest point of origin of any natural watercourse is over 400m from any element of the wind farm infrastructure and the rivers within the relevant catchments are monitored by the EPA. I note that several key ecological receptors are potentially present within the River Feale, part of the Lower River Shannon SAC, i.e. Freshwater Pearl Mussel, Sea Lamprey, Brook Lamprey, River Lamprey, Salmon and Otter. In addition the grid cable route intersects with a culverted flow that drains to the Galey and eventually to the Lower River Shannon SAC. However, given that the development is not close to any natural watercourse and that the design includes a suite of drainage measures designed to attenuate surface water flow and to prevent sediment release during construction, I am satisfied that there is very little potential for impacts on aquatic species.

9.8.3 Bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Acts (2000 and 2010). In addition, the EU Habitats Directive seeks to protect bat species and their habitats and requires that appropriate monitoring of populations be undertaken.

Potential bat roosts and foraging sites were surveyed according to best practice methodology. A fixed point static survey, an activity survey and a

transect survey using an AnaBat detector were completed on the night of April 16th 2015. No bat activity was recorded at the fixed point location adjacent to T9. However, regular bat activity was recorded during the transect survey, mostly individual bats transiting along the treelines and hedgerows of roadside boundaries. A concentration of Common Pipisrelle bat activity was recorded adjacent to a stand of mature conifer trees at the roadside. This species is one of the most abundant and widely distributed bat species in Ireland and is listed an Annex IV species under the EU Habitats Directive. EIS section 5.3.7.2.5 concludes that there is evidence that the area around the site is a significant resource for foraging or commuting bats. The level of activity recorded is considered to be significant. The timing of the activity at 9.10pm shortly after sunset strongly suggests that the bats originated from a roost located relatively close to the surveyed area. EIS section 5.5.3.3.2 identifies a significant unmitigated potential impact on the Common and Soprano Pipistrelle due to the loss of areas of field boundaries and the forest edge, which it uses for foraging. However, similar habitats are widely available within and adjacent to the site.

EIS section 5.4.4.4.2 assess the potential collision risk to bats during the operational phase. It notes that most bat species recorded in Ireland, including Common Pipistrelle, do not migrate at high altitude and rarely fly at heights that intersect with wind turbine blades. However, Leisler's Bat has a high risk of impacts due to its preference for open habitat, long range, wing shape, flight speed and behaviour (ref. Natural England guidance, 2014). The species was not recorded during surveys of the development site. The National Biodiversity Centre retains records for the area and assigns a Bat Habitat Suitability Index Rating of 24/100 for the area around the wind farm site. Leisler's Bat can travel up to 10km from a roost to a feeding site. The EIS states that the types of habitats preferentially selected by this species for roosting and foraging are not available in the intensively managed agricultural grassland habitats that dominate the area. They are known to avoid improved grassland and hedgerows. While there is a significant potential unmitigated impact due to the risk of collision, the species is unlikely to be present at the site due to the lack of foraging habitat. The adjacent permitted/proposed wind energy developments are taken into account of the EIS assessment but no specific cumulative impacts are identified.

The proposed mitigation measures outlined in the EIS state that the clear fell around T8 creates a setback of c. 25m between the arc of the blade's sweep and the forest edge, which could be used by commuting bats. Lights could be used on turbines to reduce potential collision risk. It is also proposed to minimise the extent of hedgerow removal and to reseed / replant to promote speedy revegetation. Pre-construction monitoring of bat activity is proposed, i.e. a repeat of the surveys carried out during

preparation of the EIS. Post construction surveys are proposed for the 1st, 2nd, 3rd, 5th and 10th year of operation, to include bat fatality surveys and bat activity and to be carried out in consultation with the NPWS.

Wind turbines are a known risk to bats, which can be killed by a fatal change in pressure within the lungs (barotrauma) following exposure to low pressure vortices close to moving wind turbine blades or through collision with turbine blades. There is a significant risk where there are large numbers of bats in the vicinity of a wind farm site or regularly passing through the site. However, the species present in the vicinity of the development site are identified as 'low risk' due to their low flight altitude. The EIS conclusion seems acceptable based on the information available. I am satisfied that the potential for significant bat impacts does not arise with regard to the species present.

9.8.4 Other Fauna

Potential impacts on fauna generally relate to the construction phase only. A mammal survey carried out at the development site identified the protected species Irish Hare. No evidence of any other protected species was recorded, e.g. badger setts, fox den. The EIS notes that any disturbance to fauna occurring during construction would be temporary in duration and would not result in permanent impacts. The habitat loss is limited in extent and could be absorbed by other extensive areas of similar habitats nearby. No significant residual impacts are identified. This conclusion is accepted.

9.8.5 Other Ecological Impacts Conclusion

EIS table 5.19 summarises unmitigated impacts on key ecological receptors during construction and table 5.22 summarises impacts on same during operation. All impacts are assessed as slight / imperceptible except for potential impacts on the Soprano Pipistrelle bat. However, I am satisfied that the potential for significant bat impacts does not arise with regard to the species present and to the proposed mitigation measures. To conclude, it is considered that the development would not result in significant adverse impacts on habitats or aquatic species. No other significant potential ecological impacts are identified in the EIS.

9.9 Noise

9.9.1 Potential noise impacts on residential amenities primarily relate to the operational stage of the development. The Wind Energy Development Guidelines state:

"*In general, a lower fixed limit of 45 dB(A)[10] or a maximum increase of 5 dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours … in low noise environments where background noise is less than 30 dB(A), it is recommended that the daytime level of the* $LA_{90,\ 10min}$ *be limited to an absolute level within the range of 35-40 dB(A) … A fixed limit of 43 dB(A)will protect sleep inside properties during the night.* "

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

The EIS notes that the Guidelines are based on detailed recommendations set out in the UK Department of Trade & Industry Energy Technology Support Unit (ETSU) publication "*The Assessment and Rating of Noise from Wind Farms*" (1996). The 2013 review of the 2006 Guidelines includes the following recommendations in relation to noise impacts:

- Minimum separation of 500m between any commercial scale wind turbine and the nearest point of the curtilage of any property in the vicinity.
- An absolute outdoor noise limit of 40 dB at noise sensitive properties at any wind speed, irrespective of time day or night. This limit applies to the combined sound level of all turbines in the area irrespective of which wind farm development they may be associated with.
- For areas of special amenity value the 40 dB limit applies at the boundaries of such areas identified in a development / local area plan.

However, as these proposals have not been adopted as ministerial guidance, the following assessment is based on the recommendations of the 2006 Wind Energy Guidelines

9.9.2 EIS figure 4.2 indicates the locations of residential properties within 1km of the development, i.e. 55 no. dwellings including clusters to the north east along the R523 and the south west further along the L-10071. The closest houses are the farm complex 'Beennanaspuck House' and adjacent dwelling to the north of the development site, which are identified as H49 and H50 in the EIS noise impact assessment. The EIS states that these belong to the same landowners as the development site. According to figure 2.4, all other houses in the vicinity are over 500m from the proposed turbines, i.e. the development generally complies with a 0.5km setback.

9.9.3 The EIS assessment of noise impacts is based on noise monitoring carried out 4 no. houses near the site (N1 to N4) during the period 24th March to April 17th 2015. The baseline noise data was filtered directionally

to only include wind directions upwind of the existing Athea and Tooradoo wind farms, in order to ensure that they did not contribute to baseline noise levels. Table 8 indicates prevailing background noise levels for each noise monitoring location, adjusted for various wind speeds. The prevailing background noise levels are in the order of 29 – 60 dB, i.e. generally above 30 dB. Noise levels at prevailing wind speeds did not drop below 29 dB for the operating range of the wind turbine during the day or night. The EIS predicts operational noise impacts using noise modelling software. The predicted noise levels are based on the specification of the proposed 1.6 MW turbine model and used meteorological data from the nearby Athea meteorological mast. The predicted noise levels were measured against a derived day time noise limit and a fixed night time limit, based on the day and night time noise limits as set out in the 2006 Guidelines. EIS table 19 illustrates the noise modelling predictions for all 55 no. dwellings within 1km and indicates that the limits are met / exceeded at 2 no. locations, i.e. houses nos. 49 and 50. All other locations are below the limits.

9.9.4 The EIS models potential cumulative impacts to include the nearest constructed wind farms at Athea and Tooradoo. The prediction is based on a 'worst case scenario' of all 3 wind farms in operation simultaneously. EIS section 10.2.4.3 notes that potential cumulative impacts are unlikely as dwellings cannot be downwind of both wind farms simultaneously, or dwellings are at a significant remove from one or other of the wind farms and therefore not in both zones of influence. EIS table 20 indicates cumulative predictions for the 55 no. houses within 1km against day and night time limits are for operational noise. The day and night time limits are exceeded at H49 and H50 only. The worst case predicted level would be expected to be in the order of 3 dB, which is not considered significant. EIS section 10.2.5 states that turbines can be operated in a noise reduced mode or shut down if necessary. The night time noise limit of 43 dB can be achieved at H49 and H50 if T9 and T2 are operated in noise reduced mode at wind speeds of 6 to 8 m/s at 10m height. The EIS concludes no significant residual noise impacts.

9.9.5 The EIS concludes that there would be no significant noise impacts at nearby sensitive receptors (houses). The projected noise levels are generally considered to be acceptable and in compliance with policy requirements.

9.10 Shadow Flicker

9.10.1 The Wind Energy Development Guidelines note that shadow flicker effects last for a short period and happen only in certain specific combined circumstances, i.e. when the sun is shining and is at a low angle (after dawn and before sunset) and the turbine is directly between the sun and

the affected property and there is enough wind energy to ensure that the turbine blades are moving. The Guidelines note that potential for shadow flicker is very low at distances greater than 10 rotor diameters from a turbine, i.e. 1km in this case They recommend that shadow flicker at neighbouring dwellings within 500m should not exceed 30 hours per year or 30 minutes per day. The 2013 review of the Guidelines states:

"*Modern wind turbines have the facility to measure sunlight levels and to reduce or stop turbine rotation if the conditions that would lead to shadow flicker at any neighbouring property occur. Thus in practice with careful site design and appropriate mitigation, and most critically the use of appropriate equipment and software, no existing dwelling or other affected property (e.g. existing work places or schools) should experience shadow flicker*."

As noted above, there are 55 no. houses within 1km of the site and all houses in 3rd party ownership are over 500m from the proposed turbines.

9.10.2 The EIS models predicted shadow flicker using a proprietary software package, based on a 'worst case scenario' with constant sunshine and wind speed in the right direction, also no amelioration due to the presence of intervening vegetation or other obscuring features. The 'worst case scenario' results as per table 11.2 indicate that the average of 30 hours per year would be exceeded at houses nos. 4, 16, 23, 24, 29, 30, 31, 45, 46, 47, 48, 49, 50 and 55. The EIS uses data from the Met Eireann station at Valentia to create a 'more realistic' scenario for shadow flicker at nearby residential properties, i.e. an average of 29% of any given day has sunshine. Table 11.2 indicates that only houses nos. 49 and 50 would have an average no. of hours of shadow flicker per year > 30. House no. 49 would have a maximum of 49.3 hours and house no. 50 would have a maximum of 35.5 hours. The results are considered in terms of hours per year and not minutes per day. The EIS refers to a German court decision to tolerate 30 hours of actual turbine flickering per year, taking into account the maximum shadow time and the probability of sunshine for an area. It is assumed that where the overall amount of shadow flicker decreased between the worst case maximum and the realistic scenario, the maximum number of shadow flicker minutes per day might also be lower than the value presented. It is submitted that turbines can be programmed to shut down during periods when shadow flicker is predicted to occur using shadow flicker control modules, a measure that has been successfully used at the Athea wind farm.

9.10.3 All dwellings within the zone of influence of the proposed wind farm, i.e. 10 rotor diameters or 1km, are outside the zones of influence of the adjacent wind farms at Athea and Tooradoo. Therefore, no cumulative impacts are predicted.

9.10.4 The shadow analysis undertaken and resulting conclusions are considered to be reasonable and I do not consider that the development would have significant shadow flicker impacts on nearby dwellings. A condition requiring the proposed mitigation measure should be applied if the Board is minded to grant permission.

9.11 Roads and Traffic Impacts

9.11.1 The proposed development includes road works to facilitate turbine delivery and construction access comprising:

- Changes to the fence line on the western side of the R523 / L-10071 junction, in order to create an adequate sight distance.
- Widening and strengthening of the L-10071 south of the R523 junction as far as Beennanaspuck House.
- Creation of 2 new site entrances where the L-10071 traverses the development.
- The finished wind farm layout includes a total of 1,051m of tracks within the development site, comprising 874m of new tracks and 177m of upgraded existing tracks.
- Road works along the proposed grid connection routes.

9.11.2 Potential roads and traffic impacts will primarily occur during the construction stage of the development. This phase is expected to last 9 months and to involve an estimated total of c. 30 people working at the site. The site would operate between the hours of 8.00 am to 6.00 pm daily Monday to Friday and 8.00 am to 1.00 pm Saturday. Aside from construction staff, construction related traffic would comprise the importation of turbine components, concrete, steel and aggregate from local quarries. HGV traffic would access the site via the R523 / L-10071 junction only.

9.11.3 The proposed turbine delivery route is along public roads south from the port at Foynes, Co. Limerick, along the N69 to Tarbert, the R551 from Tarbert to Mealcon Cross, the L-10013 local road to the N69 at Tarmon East, the N69 to Bolton's Cross, the R523 to Beennanaspuck and the L-10071 to the site entrance. It is submitted that most of this route has already been upgraded to suit abnormal loads and used successfully to transport the same wind turbine model for the Athea and Dromada wind farms. Significant upgrading works were undertaken at the N69 / R523 junction at Bolton's Cross to facilitate its use as a turbine delivery route. The proposed works to the R523 / L-10071 junction would improve sight distances and facilitate turning movements of turbine delivery trucks. An 80 kph speed limit applies at the junction. The development does not include a borrow pit and all aggregate would be imported to the site. EIS section 11.3.2 outlines possible routes from local quarries to the development site and a map of quarry locations and delivery routes is

provided as EIS Figure 13.24. The 3 quarries listed as potential sources are Creeves quarry at Shannagolden; Ardfert Quarry and Cronins Quarry at Caheragh. All deliveries would travel along regional routes as far as the L-10071. Both of the proposed grid connection routes would involve works to the public road, however no significant traffic impacts are associated with the construction of the grid connection route.

9.11.4 The EIS includes the results of traffic counts carried out at the R523 / L-10071 junction on Tuesday 26th May 2015 during the morning and evening peak times, also NRA data from automatic traffic counters on the N69 between Listowel and Tarbert and between Askeaton and Foynes. These are used as the basis for a traffic capacity assessment of the R523 and N69. All routes are currently operating well within Annual Average Daily Traffic (AADT) capacities as identified by the NRA. Future traffic volumes are assessed based on NRA traffic forecasts. EIS section 13.4.3 outlines projected construction traffic volumes including HGV movements associated with steel, crane, turbine components, stone, concrete and miscellaneous deliveries, also traffic associated with construction staff. The 'worst case scenario' for construction traffic would be 160 no. daily vehicular movements. The construction traffic would increase 2016 typical daily volumes on the R523 east of Beennanaspuck by 10.2% and on the N69 by 6.4%. The R523 and N69 would operate well within capacity both with and without the development during the construction phase (anticipated to be in 2016). The capacity of the R523 / L-10071 junction was assessed using PICADY software, it would operate well within capacity with and without the development. It is proposed to implement a Traffic Management Plan during construction.

9.11.5 I note that the Roads report on file dated 16th October 2014 states that the L-10071 is not of a sufficient standard to withstand construction delivery traffic, with the most vulnerable sections of the road being to the south of the development. However, the second Roads report on file dated 17th July 2015, prepared subsequent to the submission of the EIS, recommends permission subject to conditions. It states no objection to the proposed turbine delivery route. I consider that the issues raised in the first roads report are addressed by using the L-10071 north of the development site, by the proposed widening and strengthening of the L-0071 and by the proposed works to the R523 / L-10071 junction. The development would not generate construction traffic beyond the capacity of local roads and would not result in a traffic hazard. I am therefore satisfied that the development would not result in significant adverse roads impacts.

9.12 Archaeology

9.12.1 There is one recorded monument at the development site. A road or unclassified Togher, ref. KE012-005 is recorded at Beennanaspuck, however there is no known record of its precise location. According to the EIS, research has shown that the North Kerry area has the highest number of artefacts recorded in Co. Kerry, the vast majority of which were found in bogs. The recent discovery of a rare pennanular zoomorphic brooch from Tullahennel bog 17km to the north of the development site is evidence that significant artefacts are still being found.

9.12.2 Both the Kerry County Archaeologist (report on file dated 10th September 2014) and the Department of Arts, Heritage and the Gaeltacht (submission dated 3rd October 2014) recommend a full archaeological impact assessment of the development, including archaeological testing, in advance of works commending at the site. Field walking and licensed archaeological testing was carried out at the site on foot of these recommendations. The testing took place at the footprint of T9 and T2, at the location of the proposed construction compound and at sections of the proposed access routes. No testing was carried out at the footprint of T8 as it is situated within forestry that was planted in 1989 / 1990. The field walking revealed no evidence of KE012-005 and the testing found no archaeological features or artefacts. It is possible that the recorded monument is located in the areas of dense forestry at the development site, as no testing was carried out there. The Archaeology section of the EIS concludes that there is a low likelihood of archaeological impacts. Archaeological monitoring is recommended in the vicinity of T8 and the 0.5 km of underground cabling associated with grid connection route 'A' from T8.

9.12.3 The second report on file of the Kerry County Archaeologist dated 29th June 2015 notes the findings of the EIS and recommends archaeological monitoring of all ground works to be required as a condition of permission. There is also a second report by the DoAHG, dated 23rd July 2015, which notes the possible presence of KE012-005 and also recommends archaeological monitoring as a condition of permission. The mitigation measures proposed in the EIS are in accordance with these recommendations. To conclude, I consider that the proposal is unlikely to alter, damage or destroy any registered archaeological features or features of interest to the antiquity of the area, subject to the satisfactory implementation of the proposed mitigation measures.

9.13 Planning Conclusion

9.13.1 The proposed development is acceptable in principle with regard to the Kerry County Development Plan 2009-2015, the Kerry County

Development Plan 2015-2021 and the Kerry County Council Renewable Energy Strategy 2012. I am satisfied that the development would not have a significant adverse visual or landscape impact, including designated views and prospects. The development is considered to be compatible with County Development Plan policies on tourism and would not have any adverse impacts on either tourism amenities in general or on any specific tourism product. The development is considered to be acceptable in terms of the potential impact on water and soils, subject to the strict implementation of the submitted mitigation measures. It is not considered that the development would have significant adverse impacts on residential amenities by way of noise or shadow flicker. The proposed road works and turbine delivery route are acceptable and the development would not result in traffic hazard. No adverse archaeological impacts are envisaged.

9.13.2 However, the bird survey data submitted is inadequate to fully assess potential impacts on bird species, including the Hen Harrier, which is a qualifying interest of the adjacent Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. In addition, the submitted analysis of Hen Harrier impacts does not consider the issue of potential new habitat associated with a recently felled area of forest to the east of the development site. I am therefore not satisfied on the basis of the information available that the development would not have adverse impacts on the bird species present or on the SPA.

10.0 ENVIRONMENTAL IMPACT ASSESSMENT

10.1 General

10.1.1 In accordance with the requirements of Article 3 of the European Directive, Directive 85/337/EEC, as amended by Council Directive 97/11/EC of 3rd March 1997, by Directive 2003/35/EC of the European Parliament and of the Council of 26th May 2003, and Section 171A of the Planning & Development Act 2000-2010, the submitted EIS is required to be assessed by An Bord Pleanála, as the competent authority. It is a requirement that the direct and indirect effects of the proposed project are identified, described and assessed in an appropriate manner, in accordance with Articles 4 to 11 of the EIA Directive. The following is an assessment of the main impacts identified, and which I consider to be most relevant to the subject site and development. Category 3(i) of schedule 5 of Part 2 of The Planning and Development Regulations 2001, provides that an EIS shall be prepared in respect of a planning application for the following development:

"*Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts*."

As the application involves a wind farm of 3 turbines with a maximum output of 4.8 MW, the proposed development is not subject to mandatory EIA. However, the further information request issued by the PA required the applicant to submit an EIS.

10.1.2 The EIS is presented in 4 volumes as follows:

Volume 1 Non-Technical Summary
Volume 2 Main Environmental Impact Assessment
Volume 3 Appendices
Volume 4 Photomontages

The EIS assesses the effects of the proposal on the environment under the following headings: Human Beings; Ecology; Ornithology; Soils and Geology; Hydrology and Hydrogeology; Air and Climate; Noise; Shadow Flicker; Landscape and Visual Resources; Traffic and Transportation; Archaeology and Cultural Heritage; Material Assets; Interaction of the Foregoing; Summary of potential impacts. Cumulative impacts are considered separately in each chapter where relevant. In terms of each of these environmental impacts, it provides a description of the existing environment; likely significant impacts; proposed mitigation measures; and residual impacts. A non-technical summary is provided.

10.1.3 The introductory chapters of the EIS describe the subject site and the proposed development and provide background information regarding the scoping and consultation carried out by the applicant, the EIS study team and the national and local policy context. The development description includes "*underground cables to link turbines to the National Grid via the Athea substation*". The area assessed under the EIS includes both proposed grid connection cable routes. The construction stage of the development is expected to last for 9 months, phasing is set out in section 2.6.2 of the EIS. Section 2.8 sets out details of decommissioning and restoration after the proposed 25 year operating period.

10.1.4 Section 1.3 sets out the criteria used for site selection, i.e. wind resource, zoning under the RES, avoidance of the SPA, avoidance of environmental constraints, site and land accessibility and grid capacity. Chapter 2 provides details of the site selection process and consideration of alternatives, which was based on a detailed constraints and feasibility study of possible development sites in Kerry and Limerick. The developer has been monitoring wind data in the area since 2008, this has confirmed

that the site has an excellent wind resource and is suitable for wind energy generation. A total of 3 no. alternative sites were considered:

1. Beennanaspuck (larger area). A site constraints study resulted in a reduced site area to take buffer zones to the SPA into account.
2. Kingsland.This area was constrained due to the application of the 2.5RD buffer zone and to proximity to houses.
3. Athea II. It would be impossible to locate turbines on this site while maintaining the required 250m buffer to the SPA.

Alternative processes were considered during the design of the development, i.e. alternative construction method for access tracks, alternative sources of energy, alternative design and grid connection alternatives. The wind farm layout was developed using a constraints mapping approach with buffers to watercourses, residential properties, archaeology, ecology and the SPA. Turbine locations were then optimised for wind resource.

10.1.5 I am satisfied that the EIS preparation process has been robust and has included an appropriate analysis of alternatives, also that the EIS has given due consideration to potential cumulative impacts.

10.2 Likely Significant Direct and Indirect Effects

10.2.1 There is a large degree of commonality between the significant issues identified and assessed under the planning assessment and Appropriate Assessment and the likely significant direct and indirect effects of the proposed development on the environment. The Environmental Impact Assessment as set out below should, therefore, be read in conjunction with the general planning assessment at section 9.0 above and the AA at section 11.0 below. The main effects identified in the EIS may be summarised as follows, the following order reflects that of the EIS document submitted.

10.2.2 <u>Human Beings</u>

There are 55 no. residential properties within 1km of the development. The nearest house belongs to the same landholder and is within 350m of the nearest proposed turbine. The other residential properties are dispersed along roads in all directions from the development site, ref. figure 4.2 of the EIS. Local population statistics from the 2011 census indicates that the area is moderately populated. The surrounding land uses are a mixture of farm land (predominantly dairy and beef) and low density residential. Section 4.2.4 states that there are currently a number of existing wind farms both in the local and greater area, further details of same are provided in other EIS chapters.

With regard to tourism resources, the development site is 28km from Ballybunion Blue Flag beach, 10km from Listowel heritage town, 42km from Tralee, 33km from Kerry Airport and 65km from Limerick city. There is no mass tourism directly associated with the district apart from annual motorcycle road races at Athea and a vintage car rally, which attract large numbers of visitors to the area.

Construction activity would have a positive economic impact, directly employing 30 people. Aggregates and concrete would be sourced locally. Health and safety impacts are discussed in section 4.3.2.3. Serious risks to human health and safety are not envisaged due to a high standard of construction site management. Potential traffic, noise, shadow flicker, dust and visual impacts are summarised as per the relevant EIS chapters, no significant adverse impacts are identified. No permanent negative social or land use impacts are envisaged. The development is deemed to have a neutral impact on land and property value. A community fund would be set up to contribute to the area. The public information provided is outlined.
On balance, the proposed development is considered to be acceptable in terms of the potential impact on human beings.

10.2.3 Ecology

Figure 5.3 indicates the location of the turbines relative to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. The main part of the SPA lies c. 250m to the east of the site boundary and 760m from of T8, the nearest turbine. However, there is a small parcel of land within the SPA which lies 260m to the west of T9. Table 5.5 lists other designated sites within 10km of the development site. This radius was selected with regard to hydrological linkages; potential migration routes and flight paths for birds, bats and other species; direct and / or indirect habitat loss or alteration and potential displacement and / or disturbance of species of conservation interest of the designated sites. There are 2 no. SACs within 10km, i.e. Lower River Shannon SAC (site code 002165) and Moanveanlagh Bog SAC (site code 002351). Impacts on these are considered in the NIS. Moanveanlagh Bog pNHA (site code 000374) and Bunnaruddee Bog NHA (site code 001352) are located 4km to the west and 8km to the north west respectively. Moanveanlagh Bog pNHA is co-located with the similarly named Natura 2000 site, which is considered in the NIS. The EIS concludes with regard to Bunnaruddee Bog NHA that, due to the 8km intervening distance, there is no plausible pathway between the NHA and the development site and therefore significant impacts are not reasonably foreseeable. This conclusion is accepted.

EIS table 5.19 summarises unmitigated impacts on key ecological receptors during construction and table 5.22 summarises impacts on

same during operation. Mammals, bats, vertebrates and invertebrates are also outlined. Water quality is considered at section 5.3.9. Potential impacts on aquatic species are not considered in detail due to the absence of natural watercourses from the development site and to the lack of hydrological connections to any designated site. A potential long term, significant, unmitigated impact is identified for 2 no. bat species, i.e. Common and Soprano Pipistrelle and Leisler's Bat (Annex IV EU Habitats Directive). There is a potential risk of collision at the location of T8. Mitigation measures for construction and operation are outlined in section 5.6, including design, CEMP, management of wastewater, waste and excavated materials, runoff and sediment control, fuel management plan, control of invasive plant species, restriction of vehicular movements, minimisation of hedgerow removal and pre and post construction bat monitoring. Table 5.23 summarises residual impacts on the key ecological receptors. It concludes that impacts on bat species would be slight to imperceptible.

Section 5.5.4 considers cumulative impacts with regard to the operational wind farms at Dromada, Tooradoo and Athea (35 no. turbines in total) and the permitted 4 no. turbines at Toberatooreen, also forestry and farming activities in the area. As most of the habitat loss associated with the proposed development would be commercial agricultural and conifer habitats of low intrinsic value, significant cumulative habitat loss impacts are not expected. The turbines in the 3 wind farms are widely distributed geographically and there is an abundance of similar habitats in the intervening landscape. Therefore no significant cumulative adverse impact on fauna are expected during construction or operation. No other significant residual impacts are identified.

I consider that this is generally a satisfactory consideration of the impacts on ecology.

10.2.4 Ornithology

EIS section 6.2.5 sets out the bird survey results. Table 6.8 summarises the species of conservation concern noted at the site. The site has a bird assemblage typical of the habitats present. Potential wind farm impacts on birds generally relate to habitat loss / change, disturbance during construction and disturbance or collision during the operation of the scheme.

The development would result in a direct habitat loss of 3.7 ha. Most of the footprint of the wind turbines, access roads and grid connection route is in improved agricultural grassland and conifer plantation, which are of relatively low value for breeding or wintering birds. EIS section 6.3.1.2 notes that the existing intensive agricultural landscape is subject to a

significant level of human activity and a substantial density of population along the R523. Equivalent habitats of comparable ecological value are widely available both locally and in the wider geographical area. Significant habitat loss or alteration impacts are not envisaged. There would be a temporary non-significant disturbance impact on certain birds at the site during the construction phase.

The main potential impact on birds during the operational stage is collision risk. Displacement of birds by the presence of turbines is not considered to be significant. Potential collision risk is assessed using a model developed by SNH, which is uses a 'species specific avoidance rate', based on known behaviours and capacities of various species. Existing patterns of foraging activity are expected to be maintained. Grassland sites such as this are associated with lower collision risks than mountain ridges and wetlands. The overall risk of collision is very low and of low significance. The magnitude of collision risk varies depending on the species.

Potential for cumulative impacts is greatest in relation to the Athea wind farm site, however impacts associated with the Dromada and Toberatooreen wind farms are also considered. Cumulative disturbance / displacement or collision impacts are not envisaged.

Mitigation measures are outlined in section 6.4.1, including tree felling to take place outside the breeding season, also bird monitoring during construction and post-construction.

I consider that the submitted bird survey data is insufficient to adequately assess ornithological impacts, due to the lack of a second seasonal summer bird survey, particularly with regard to the proximity of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. The EIS also does not consider potential impacts associated with the recent felling of an area of forest to the east of the development site, which could create additional Hen Harrier habitat. I am not satisfied based on the information submitted that significant impacts will not arise.

10.2.5 Soils and Geology

The EIS considers potential impacts on soils due to tree felling, roads and drainage, excavation works, storage of materials, soil erosion and waste generation. The removal of soil would have a negative, permanent, direct impact on the environment. However, the volume of excavated material would be manageable locally at the development site, figures are provided in table 7.1. Risks to water quality from the stockpiling of excavated materials can be managed through good site practice and drainage measures. No impacts on ground stability are envisaged. Details of soil

management, hydrocarbon storage and waste management are submitted, also construction mitigation measures in section 7.4. No significant cumulative impacts are envisaged and the EIS concludes that there would be no significant residual impact to soils and geology.

I am satisfied that the applicant has carried out a robust assessment of potential impacts on soils, geology and ground conditions at the development site. I note that this part of the EIS does not consider potential impacts on soils associated with the proposed grid connection routes. However, it is unlikely that these works would result in significant adverse impacts given the small area involved and the location of the works in areas that have already been subject to forestry and construction activity.

10.2.6 Hydrology and Hydrogeology

Section 8 of the EIS describes the surface and ground water regimes. There is no natural watercourse at the development site, streams in the wider area drain to the River Feale and River Galey. Section 8.2.3 sets out details of existing pressures on the Feale and Galey catchments the results of EPA water quality monitoring. Both have 'Q' values of 4, i.e. relatively unpolluted.

Section 8.3.2 outlines construction phase impacts associated with run-off and erosion of silt from construction and tree felling activities, also contamination from concrete and accidental spillages of hazardous materials and alterations to the existing site drainage. The release of suspended solids and nutrient release are key pollution risks. Section 8.3.3 sets out a suite of interrelated drainage control measures to be used during the construction stage, including specific measures for tree felling. Construction impacts on surface water quality and flow are predicted to be negative, slight, temporary. The impact to groundwater quality is expected to be neutral. Operational impacts on surface and ground waters are expected to be negative, slight to imperceptible. EIS section 8.5 identifies a negative slight to imperceptible temporary to long term residual impact.

The above assessment is satisfactory and the development is considered to be acceptable in terms of potential impacts on the water environment, subject to the strict implementation of the proposed mitigation measures.

10.2.7 Air and Climate

Dust generated during construction is unlikely to have an impact on sensitive receptors beyond 50m of the source with standard mitigation measures in place. No significant impacts on air quality are identified. The development would have a positive impact on global warming and climate

change due to the consequent reduction in carbon emissions. On balance, the development is considered to be acceptable in terms of potential impacts on air quality and climate.

10.2.8 Noise

The construction noise assessment considers potential impacts on all dwellings within 1km of the development site during the 9 month construction period. The predictions indicate that noise generated during this phase would not exceed the acceptable construction noise limit of 70 dB (as per NRA guidance) beyond 160m or at any dwelling location. Potential noise impacts of construction traffic are taken into account. This conclusion is accepted. There are no significant noise impacts associated with the decommissioning stage.

The EIS operational noise impact assessment is based on noise monitoring carried out 4 no. houses near the site (N1 to N4) during the period 24th March to April 17th 2015. Noise modelling software is used to predict operational noise impacts for all 55 no. dwellings within 1km. Results are provided in EIS table 19. The predicted noise levels were measured against a derived day time noise limit and a fixed night time limit, based on the day and night time noise limits as set out in the 2006 Guidelines. The limits are met / exceeded at 2 no. locations, i.e. houses nos. 49 and 50, which belong to the same landowner as the development site. The EIS models potential cumulative noise impacts including noise from the Athea and Tooradoo wind farms for the 55 houses within 1km. EIS table 20 indicates that the day and night time limits are exceeded at H49 and H50 only. EIS section 10.2.5 proposes mitigation measures. The EIS concludes no significant residual operational noise impacts.

The submitted noise analysis is satisfactory and I consider that significant noise impacts will not arise.

10.2.9 Shadow Flicker

The EIS provides a detailed analysis of shadow flicker impacts. It models potential impacts at the 55 no. residential properties within 1km or 10 rotor diameters of the site. The DoEHLG annual threshold of 30 hours per year is exceeded at houses nos. 4, 16, 23, 24, 29, 30, 31, 45, 46, 47, 48, 49, 50 and 55, based on a 'worst case scenario'. When Met Eireann data on regional sunshine levels is applied, all properties are below the annual threshold except for H49 and H50, the closest houses to the development site which belong to the same landowners. The EIS considers cumulative shadow flicker impacts with regard to adjacent wind farms at Athea and Tooradoo, no cumulative impacts are predicted. The proposed mitigation measure comprises programming the turbines to shut down during periods

when shadow flicker is predicted to occur using shadow flicker control modules, a measure that has been successfully used at the Athea wind farm. No significant residual impacts are predicted. The shadow flicker analysis and resulting conclusions are considered to be reasonable.

10.2.10 Landscape and Visual Impact Assessment

The EIS considers landscape and visual impacts within a 20 km ZTV, which includes parts of west Co. Limerick and south Co. Clare. This is a 'worst case scenario', which does not take the presence of topographic or landscape features into account. Having extensively viewed the development site from many locations in the wider area, I am satisfied that that the ZTV is a reasonable representation of views 'on the ground'. The EIS uses photomontages to provide baseline information and to assess visual impacts on 13 no. viewpoints within the ZTV. A selection rationale for these views is provided as an appendix to the EIS. The selected views do not include any areas >10km from the development site, based on a judgement that there was limited potential for a significant visual impact to occur at these locations. I concur with this judgement based on my site inspection and I am satisfied that the viewpoints selected allow for an adequate assessment of overall visual impacts.

The LVIA assesses both visual impact and landscape impact including cumulative impacts along with other existing / permitted wind farm developments. The assessment considers the sensitivity of landscape and visual receptors with regard to the Kerry County Development Plan 2015-2021, the 2012 RES, the Limerick County Development Plan 2010-2016 and the Clare County Development Plan 2011-2017. EIS figure 12.1 indicates designated views and prospects within the 20 km study area.

Section 12.2.1 comments that the development would have localised landscape impacts. On a wider scale, the predominant landscape impact would be an additional spread of wind farm development across the western foothills of Knockathea Hill. Although the change is considered to be negative, it is not considered to be a significant one that would constitute unacceptable detrimental effects on the character or values of the area. The overall landscape impact is considered to be 'moderate to minor adverse'. The relatively small bulk and footprint of the development and the 'managed' nature of the existing landscape are key issues in reaching this conclusion.

The LVIA concludes that the development would have a moderate visual impact overall. Many local views of the development are fully or partially screened by topography or vegetation. Potential visibility is greatest to the north and east. A cumulative ZTV map indicates the combined visibility of

the proposed wind farm along with all other known existing / permitted wind farms within the 20km radius, i.e.:

Wind Farm	No. of Turbines
Ballagh	2
Grouselodge	6
Tournafulla	17
Pallas	20
Knockawarriga	9
Rathcahill	5
Larah	2
Tullahennel North	2
Tullahennel South	10
Leanmore	9
Toberatoreen	4
Dromada	19
Tooradoo Cratloe West	6
Tooradoo	2
Upper Athea	8
Knocknagoum	9

EIS section 12.3.2.1.2 states that the development represents a 0.06% increase in additional views within the study area from areas previously having no views of wind farm developments. The areas with additional views of the proposed development are limited areas to the south of the development site, an area to the south of Kilmorna village and east of the N21 c. 4km south of Knocknagashel.

Section 12.4 sets out proposed mitigation measures, which have been integrated into the site selection and design process. The EIS concludes that the overall cumulative visual impact on the study area would be medium-low. I am satisfied that the development would not have a significant adverse visual impact on any designated views or prospects. I do not consider that the additional visual or landscape impact of the development is of a magnitude that would warrant a refusal of permission.

10.2.11 Traffic and Transportation

Potential impacts on the surrounding road network are principally associated with the construction stage. Peak traffic would occur during the first 6 of the 9 month construction programme. Peak daily construction traffic, during turbine base pour, is predicted to be 160 no. 2 way HGV movements (80 each way) over a 10 hour period. This would equate to approx. 16 movements per hour. Traffic studies indicate that the potential increase would be well within the carrying capacity of the local road network. However, there is potential for minor disturbances for local

residential and users of the local roads in the vicinity of the site. The TIA states that construction traffic would occur outside the peak morning and evening commuter traffic and that any construction impacts would be temporary, requiring no road closures.

Most of the proposed turbine delivery route has already been used to serve existing wind farms in the area. The development includes works to the R523 / L-10071 junction and along the L-10071 north of the site entrances to facilitate construction traffic and turbine component deliveries. A traffic management plan would be developed and implemented to address traffic issues. The traffic impact analysis is considered to be generally acceptable and I am satisfied that the traffic impact of construction works will not be adverse, subject to the satisfactory implementation of the proposed road improvement works and traffic mitigation measures.

10.2.12 Archaeology and Cultural Heritage

This section is based on archaeological test excavations undertaken at the footprint of T9 and T2, the location of the proposed temporary construction compound, at sections of the access routes and at 0.5m of underground cable route 'A'. No archaeology was discovered. There was no testing at T8 or the adjacent part of the grid connection route, as they are located within dense forestry planted in 1989-1990. There is one recorded monument within Beennanaspuck townland, ref. KE012-005, a road or unclassified Togher, but there is no known record of its precise location. Section 14.8 notes that as parts of the site are covered in dense forest, there is a possibility that sections of KE012-005 may survive within the forest, also the underlying soil may contain previously unrecorded features or artefacts. However, there has been much ground disturbance in the area of the forestry plantation. Mitigation is archaeological monitoring. No residual impacts are identified. The archaeological assessment is acceptable and I am satisfied that no significant archaeological impacts are likely.

10.2.13 Material Assets

In addition to the material assets addressed in the chapters on human beings, ecology, ornithology, soils and geology, landscape, transportation, cultural and archaeological heritage, this chapter addresses potential impacts on material assets of (i) natural origin, i.e. wind resource, geology and land resources, natural resources and waste and (ii) human origin, i.e. grid capacity and electricity supply, access road capacity, aviation, telecommunications and TV. No significant risks are identified with the proposal positively contributing to the electricity supply network and the supply of renewable energy. This analysis is considered satisfactory.

10.2.14 Interaction of the Foregoing and Summary of Potential Impacts

Figure 16.1 provides a matrix of impacts, classified as 'major' and 'minor'. Major interactions occur between:

- Soils and geology and hydrology and civil engineering and design
- Ecology and ornithology and civil engineering and design
- Human beings and landscape and visual

One minor interaction is identified between noise and shadow flicker and human beings. Figure 17.2 of the EIS presents a summary of potential impacts. All of the aforementioned have been discussed above and I consider that the interactions identified are unlikely to cause or exacerbate any potentially significant environmental impacts.

10.3 EIS Conclusion

I have considered the EIS and all submissions / observations received which are relevant to impacts on the environment, inspected the site, and have assessed the direct, indirect, and cumulative effects of the development on the environment. Having regard to the above, I am of the opinion that the direct and indirect effects on the environment of the proposed development have been identified and described. It is my view that, excepting my concerns in respect of potential impacts on the Hen Harrier, the potential impact of the proposed development can be adequately mitigated and is not likely to result in a significant impact on the environment.

However, given the lack of adequate bird survey data, I conclude that the information contained in the EIS submitted does not accord with the provisions of Article 94 and Schedule 6 of the Planning and Development Regulations 2001. In particular, Schedule 6(1)(c) specifies that an EIS must contain:

"*The data required to identify and assess the main effects which the proposed development is likely to have on the environment*."

It is considered that the submitted EIS does not comply with this requirement due to the inadequate bird survey information.

11.0 APPROPRIATE ASSESSMENT

11.1 Introduction

11.1.1 The obligation to undertake AA derives from Article 6(3) and 6(4) of the E.U. Habitats Directive. AA involves consideration of whether the plan or project alone or in combination with other projects or plans will adversely affect the integrity of a European site in view of the site's conservation

objectives and includes consideration of any mitigation measures to avoid, reduce or offset negative effects. This determination must be carried out before a decision is made or consent given for the proposed plan or project. Consent can only be given after having determined that the proposed development would not adversely affect the integrity of a European Site in view of its conservation objectives. This section of the report considers the likely significant effects of the proposal on the European sites with each of the potential significant impacts assessed in respect of each of the Natura 2000 sites considered to be at risk and the significance of same.

11.1.2 The applicant submitted 2 no. Natura Impact Statements (NIS) during the course of this application. The first NIS, dated August 2014, was lodged with the application. The second NIS, dated June 2015, was submitted with the response to the further information request. Both of the submitted documents are taken into consideration in the following assessment. Any differences arising between them are highlighted. Both documents use the same basic survey information, i.e.:

- Habitat and mammal surveys of the site.
- Ornithological surveys comprising a summer bird survey of April 2013 to August 2013 and winter bird surveys from October 2013 to March 2014, also summer and winter raptor VP surveys.

This information is supplemented in the 2015 NIS by the results of an additional winter bird survey carried out during the period October 2014 to March 2015.

11.2 The Project and Its Characteristics

11.2.1 Section 4.2 of both NIS documents provides a description of the proposed project, comprising:

- 3 no. wind turbines with a maximum height of up to 125m, 1.6 MW each with a total installed capacity of 4.8 MW.
- 2 no. new site entrances, 1,051 m of access tracks (874m of new and 177m of existing). Some additional information on roads is provided in the 2015 NIS.
- Temporary construction compound
- Site drainage network
- Underground cabling and associated infrastructure
- The 2015 NIS includes underground cables linking turbines to electrical infrastructure at Athea wind farm.
- Felling of conifer trees for T8 and access to T2.
- Excavations for 3 turbine foundations / bases, turbine hardstands and new roads.

11.3 The European Sites Likely to be Effected (Stage 1 Screening)

11.3.1 The Stage 1 AA (screening) is set out in section 4.3 of both NIS documents. The DoEHLG document *Appropriate Assessment of Plans and projects in Ireland Guidance for Planning Authorities* (2010) recommends that a distance of 15 km is used to identify European sites that could potentially be affected by a development. The Source-Pathway-Receptor model can also be used to identify sites which could potentially be affected by a development, taking into account the precautionary principle. The submitted NIS lists all designated SACs and SPA sites within 15km. However, I note that there is no consideration of possible links to other European sites outside 15km using the source-pathway-receptor model.

11.3.2 The following table outlines the 4 no. sites in question and notes their distance to the development site.

Name of Site	**Site Code**	**Distance from Designated Site to Location of Nearest Turbine**
Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA.	004161	• Turbines are < 1km from this SPA • 730m of grid route located within the SPA
Lower River Shannon SAC	002165	• Galey River is 2.5 km north of nearest turbine • River Feale is 3.3km southwest of nearest turbine
Moanveanlagh Bog SAC	002351	• Designated site is 4km to the west
River Shannogn and River Fergus Estuaries SPA	004077	• Designated site is 14km to the north

11.3.3 Section 4.3.3 of both NIS documents notes the qualifying features of special conservation interest for the 4 no. designated sites within 15 km. The following table identifies the conservation objectives for the sites in question noting whether the sites have general objectives or whether specific objectives have been developed for the site.

Name of Site **Site Code**	**Conservation Objectives**
Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA 004161	There is a general conservation objective to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: A082 Hen Harrier (Circus cyaneus) breeding
Lower River Shannon SAC 002165	The conservation objectives for the Lower River Shannon SAC generally relate to the maintenance of a favourable conservation condition of the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive. There are detailed targets for each habitat and species. (* = priority):

	[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)
Moanveanlagh Bog SAC 002351	The conservation objectives for the Moanveanlagh Bog SAC generally relate to the maintenance of a favourable conservation condition of the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive. There are detailed targets for each habitat and species. (* = priority): [7110] Raised Bog (Active)* [7120] Degraded Raised Bog [7150] Rhynchosporion Vegetation
River Shannon and River Fergus Estuaries SPA 004077	The conservation objectives for the River Shannon and River Fergus Estuaries SPA relate to the maintenance of a favourable conservation condition of Annex I bird species and associated habitats. There are detailed targets for each habitat and species. A017 Cormorant (Phalacrocorax carbo) breeding + wintering A038 Whooper Swan (Cygnus Cygnus) wintering A046 Light-bellied Brent Goose (Branta bernicla hrota) wintering A048 Shelduck (Tadorna tadorna) wintering A050 Wigeon (Anas Penelope) wintering A052 Teal (Anas crecca) wintering A054 Pintail (Anas acuta) wintering A056 Shoveler (Anas clypeata) wintering A062 Scaup (Aythya marila) wintering A137 Ringed Plover (Charadrius hiaticula) wintering A140 Golden Plover (Pluvialis apricaria) wintering A141 Grey Plover (Pluvialis squatarola) wintering A142 Lapwing (Vanellus vanellus) wintering A143 Knot (Calidris canutus) wintering A149 Dunlin (Calidris alpine) wintering A156 Black-tailed Godwit (Limosa limosa) wintering A157 Bar-tailed Godwit (Limosa lapponica) wintering A160 Curlew (Numenius arquata) wintering

	A162 Redshank (Tringa tetanus) wintering A164 Greenshank (Tringa nebularia) wintering A179 Black-headed Gull (Chroicocephalus ridibundus) wintering A999 Wetlands

11.3.4 Section 4.5.1 of both NIS documents sets out the Stage I screening conclusion. Table 10 of the 2014 NIS and Table 11 of the 2015 NIS list the features of conservation interest of the 3 no. designated sites, table 11 takes the proposed grid connection route into account. Both NIS consider that the following designated sites are outside the potential zone of impact influence of the proposed development with regard to the source-pathway-target vector as there are no potential connections to the Natura 2000 sites:

Name of Site **Site Code**	**NIS Screening Conclusion**
Lower River Shannon SAC 002165	Proposed development does not involve any stream or river crossings. All wind farm construction will be > 200m from any stream. Galey River is 2.5km north of the nearest turbine. River Feale is 3.3km south west of the nearest turbine. Drainage construction will minimise sediment laden runoff, therefore no impacts on freshwater-aquatic habitats and species. There is no plausible pollution pathway to coastal / marine habitats and species.
Moanveanlagh Bog SAC 002351	As above, also the designated site is 4 km to the north west of the nearest turbine. The habitats and typical species present are not ecologically connected to the development site.
River Shannon and River Fergus Estuaries SPA 004077	Designated site is 14km to the north. No plausible impact pathway is reasonably foreseen due to the intervening distance. No significant reduction in any of the natural ranges of the species listed is expected to result from the development. It is considered that the current circumstances where there is, and will probably continue to be, sufficiently large habitat to maintain these populations will not be affected by the proposed development.

The NIS Stage I screening concludes that the development does not have any element that could significantly impact on the above listed designated sites. However, it could have adverse disturbance or displacement impacts on the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161). This conclusion is accepted with regard to the intervening distances to the River Shannon and River Fergus Estuaries SPA and to the lack of hydrological connections to the SAC sites. I also note that the AA screening carried out by the PA in its assessment of the case reaches the same conclusion.

11.4 Likely Significant Effects on Designated Sites (Stage 2 Appropriate Assessment)

11.4.1 Section 5.5 of both NIS documents considers potential impacts on the conservation objectives of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. Potential impacts on the Hen Harrier are rated as being of very high sensitivity, medium magnitude.

11.4.2 Construction Impacts

Potential construction phase impacts relate to disturbance of nesting or wintering birds by human activity, construction and operating machinery. This phase would last 9 months. Working during the summer months could disturb breeding and foraging birds and could lead to temporary displacement of some birds from the site and immediate surrounds. The area of the proposed development is currently subject to a significant level of human activity with seasonal peaks correlated to seasonal farm activity. The R523 to the north is relatively densely populated. VP observations indicate no significant use by Hen Harriers of the development site or the nearby enclosed forest canopy. There is excellent nesting and foraging habitat nearby within the SPA. Individuals using the wider district for foraging / commuting / nesting could be temporarily affected by noise from construction activities and human presence, including along the proposed grid connection route within the SPA. The work on the 730m of the grid connection route within the SPA is expected to take 9-15 days to complete. NIS table 16 concludes that potential disturbance / displacement impacts on Hen Harrier during construction are negative, moderate significance and temporary. Impacts associated with the potential loss of low value foraging habitat are negative, slight.

11.4.3 Operational Impacts Disturbance

Studies cited indicate that Hen Harrier avoid areas of otherwise apparently suitable habitat within 250m of turbines. Given the low value of habitats present at the development site and the current level of usage of the site as indicated in the site surveys, Hen Harrier are not expected to be present at the site in significant numbers. The forestry surrounding T8 may be felled towards the end of the operational life of the wind farm and the area re-planted, creating an area within 250m of T8 that could be used as Hen Harrier foraging habitat (c. 20ha), probably for about 4 years with regard to normal forestry plantation cycles. The NIS cites bird monitoring at the nearby Athea wind farm, where turbines are located 2-5km to the east-southeast of the development site in an area that contains fragmented areas of high quality Hen Harrier foraging habitat. The civil construction works were completed in March 2013. When compared with the baseline studies, the results indicate that the observed post

construction usage of the wind farm site by foraging Hen Harrier is similar to pre-construction usage. The grid connection route would have no operational impacts. NIS table 17 concludes that the operational disturbance / displacement impacts would be negative, slight.

11.4.4 Operational Impacts Collision Risk

Raptors are considered to be at greater risk of collision with wind turbines than other bird species due to flight behaviour and mobility. Hen Harriers tend to fly well below turbine height when foraging or commuting however juvenile Hen Harriers are less aerial than adults and pose a greater collision risk during the early post-fledgling period. As most of the early flights take place in close proximity to the nest, nest proximity to a turbine is the key indicator of vulnerability to collision risk. Nesting potential within the development site is limited due to the unsuitability of the available habitats. All Hen Harrier observations to date at the development site have been below 10m height, none of which occurred at the site boundary. The nearest recorded flight path was c. 670m to the northwest of T9. NIS table 17 assesses potential collision risk as negative, slight (adult) and significant (juvenile).

11.4.5 Other Plans or Projects (In Combination Effects)

The closest operational wind farms are Athea 2 km to the east and Dromada, 7 km beyond (35 turbines in total), both of which are within or adjacent to the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. In addition, the permitted Toberatooreen wind farm (4 turbines) is 6km to the north. NIS section 4.2.18 states that the existing Athea wind farm is the significant adjacent project which could result in cumulative or in combination impacts. Other relevant projects and activities include agriculture, forestry, peat harvesting / turf cutting and other operational wind farms. The possible future felling of the conifer forest around T8 towards the end of the operational stage could create c. 20 ha of new foraging habitat for Hen Harrier. However, given the relatively small area and that a large block of potential pre-thicket forestry would become available at the same time, it is not considered to have a significant effect on future foraging habitat for the Hen Harrier. Cumulative impacts on water quality would be prevented by the proposed drainage measures, including the grid connection route. No cumulative impacts with agricultural activity or peat harvesting are envisaged. I note that this assessment does not consider potential impacts associated with the felling of an area of forest nearby to the east of the development site, which could create new Hen Harrier habitat if replanted.

Bird monitoring at the Athea wind farm site indicates similar pre and post construction usage of the area by Hen Harrier. The NIS concludes a low

likelihood of cumulative impacts with regard to this observation and to the low value of the development site and surrounds to Hen Harrier for foraging and nesting purposes. Potential cumulative impacts associated with the grid connection are not envisaged.

11.5 Mitigation Measures and Residual Impacts

11.5.1 Proposed mitigation measures comprise:

- Development to be overseen by a Project Ornithologist.
- Restricted vehicular movements at the development site.
- Bird monitoring programme. If a nest is confirmed within 0.5km of the site boundary or grid connection route, construction activity to cease during the breeding season of April to July. If same is conformed during the operational stage, turbines should cease operation during the Hen Harrier fledgling period, i.e. mid June to late August.
- Potential use of lights to reduce collision risk in poor visibility.

11.5.2 Residual impacts are summarised in table 18 of both NIS. Residual impacts of disturbance to breeding Hen Harrier during construction are rated as imperceptible negative. Collision risk to juvenile Hen Harrier is rated as slight negative impact. Cumulative disturbance effect with turf cutting during the Hen Harrier breeding season is rated as an imperceptible negative effect.

11.6 Appropriate Assessment Conclusion

11.6.1 The submitted NIS has been considered with regard to the guidance provided in the DoEHLG document *Appropriate Assessment of Plans and projects in Ireland Guidance for Planning Authorities* (2010) and to recent Court judgements.

11.6.2 The conclusions of the NIS Stage I screening are accepted as discussed above. The Stage 2 assessment concludes that the development would not have any impact on the integrity of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. However, I noted that the conclusions of the NIS regarding impacts on the Hen Harrier, are based on the findings of bird surveys carried out at the site in 2013 and 2014, as detailed in the EIS. The detailed discussion in above section 9.7.2 concludes that the survey data is deficient with regard to the best practice SNH recommendations. On this basis, it is considered that the NIS does not satisfactorily demonstrated that potential impacts on European Sites will not arise.

11.6.3 In cases involving AA, consent can only be given after having determined that the proposed development would not adversely affect the integrity of a European site in view of the site's conservation objectives. In order to meet

this test, no reasonable scientific doubt can remain as to the absence of adverse effects on the site, in view of its conservation objectives. The judgement of Kelly J. in Kelly v An Bord Pleanála 2013 No. 802 J.R. states that an assessment cannot be regarded as appropriate if it contains gaps or lacunae, lacks complete, precise, definitive conclusions capable of removing all reasonable scientific doubt as to the effects of the proposal on European Sites. On the basis of the information provided with the application and the appeal, including the NIS, and in light of the assessment carried out above, I am not satisfied that the proposed development individually, or in combination with other plans or projects would not adversely affect the integrity of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, in view of that site's conservation objectives. In such circumstances, the Board is precluded from granting permission.

12.0 CONCLUSION

12.1 As I conclude in above section 9.7.2 and 11.6.3, the application does not include adequate information to prove beyond reasonable scientific doubt that the wind farm will not have adverse impacts on the Hen Harrier, which is listed as a special conservation interest of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. Having regard to the detailed analysis carried out, which is based on the recommendations of the Scottish Natural Heritage document *Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms* (May 2014), I note that the available survey data includes 2 separate winter bird surveys, i.e. October 2013 - March 2014 and October 2014 - March 2015, but includes only one summer season, April to August 2013. Additional bird survey data for the summer months is therefore necessary to comply with the SNH recommendations.

12.2 However, given that:

- The habitats present at the site are unlikely to be used by the Hen Harrier.
- While the available survey data is limited in duration, the overall extent of the surveys carried out is acceptable.
- The overall conclusions of the EIS were that, excepting my concerns in respect of potential impacts on the Hen Harrier, the potential impact of the proposed development can be adequately mitigated and is not likely to result in a significant impact on the environment.

It is considered that the applicant should be requested to submit an additional summer bird survey of the site and its surroundings, along with a consequent revised analysis of potential ornithological impacts. This would enable the Board to fully assess potential ornithological impacts and to carry out a satisfactory Environmental Impact Assessment and Natura Impact Assessment. The applicant should also consider potential impacts

on the Hen Harrier associated with the recent felling of conifers to the east of the site as this could create a new area of Hen Harrier habitat if replanted.

13.0 RECOMMENDATION

13.1 Having considered the contents of the application including the Environmental Impact Assessment and the Natura Impact Statement, the decision of the planning authority, the planning history of the site, the provisions of the Kerry County Development Plan 2009-2015, the provisions of the Kerry County Development Plan 2015-2012, the Kerry County Council Renewable Energy Strategy 2012, the provisions of the Guidelines for Planning Authorities in Wind Farm Development and Wind Energy Development (2006), the grounds of appeal and the responses thereto and the observation made to the Board, I recommend that the Board issue a notice under section 132 of the Planning and Development Act 2000 (as amended), which states the following:

The Board is not satisfied based on the information submitted that the conclusions of the EIS and NIS regarding ornithological impacts which are based on the findings of bird surveys carried out at the site in winter 2013-2014, winter 2014-2015 and summer 2013, as detailed in the EIS, that the development would not have significant adverse ornithological impacts, and has concluded that the survey data is deficient with regard to best practice.

The Board has particular concerns with regard to potential impacts on the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (site code 004161), located 0.25km from the site. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier which is listed on Annex I of the E.U. Birds Directive. According to the site synopsis, the SPA is a stronghold for Hen Harrier and supports the largest concentration of the species in the country. Short-Eared Owl and Merlin, which are both also listed on Annex I of the E.U. Birds Directive are also known to the present at the SPA, along with Red Grouse, which is now red-listed. The Board has concluded that the survey information available does not provide a full picture of local commuting and breeding patterns for these species.

The applicant is invited to demonstrate by way of further adequate survey information that the proposed development will not have adverse impacts on the Hen Harrier, Short-Eared Owl, Merlin and Red Grouse, or impacts on Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. In particular, the applicant is requested to submit the results of additional bird surveys carried out at and around the development site

during the summer breeding period. The applicant should also consider potential impacts on the Hen Harrier associated with the recent felling of conifers to the east of the site as this could create a new area of Hen Harrier habitat if replanted.

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Sarah Moran,
Senior Planning Inspector,
22nd February 2016.