



An
Bord
Pleanála

Inspector's Report PL20.244346

Development:

The erection of 16 no. wind turbines each with a hub height of 85 metres, rotor diameter of 100 metres with an overall height of 135 metres; all associated site development works including 2 no. temporary site compound areas, a permanent anemometer mast 85 metres in height, foundations, crane hard-standings, access tracks, underground cabling, site entrance off R357; the construction of 38 kV switch-room and control facility (85.5 square metres) with associated equipment and compound area enclosed by a 2.4 metre high palisade fence; change of use of existing residential dwelling (99.9 square metres) to office use associated with the wind farm. The development would be located in the townlands of Cronin, Gortaphauill, Glenrevagh (ED Turrock),

Mullaghardagh, Tullyneeny and
Turrock, Dysart, County Roscommon.

Planning Authority: Roscommon County Council.

Planning Authority Reg. Ref.: PL10/541.

Applicant: Galetch Energy Developments
Limited.

Type of Application: Planning Permission.

Planning Authority Decision: Grant planning permission subject to
33 conditions.

Appellants:

1. Wind Turbine Group South
Roscommon
2. Department of Arts, Heritage and
the Gaeltacht.
3. Mr. Tom and Fiona Farrell
4. Mr. Eamonn Kelly
5. Ms. Marie Donnelly
6. Mr. Thomas Burke
7. Mr. James Francis Fallon
8. Mr. Paul Donoghue

Dates of Site Inspection: Main inspection on 3 May 2016, also
on 12 and 30 May 2016 and a
number of subsequent occasions.

Inspector: Padraic Thornton.

Contents

1.0 Site Location and General Site Description:	4
2.0 Details of Proposed Development:	7
3.0 Submissions made to Planning Authority:	10
4.0 Decision of Planning Authority:	14
5.0 Grounds of Appeal:.....	17
6.0 Summary of later Responses/Submissions:	28
7.0 Development Plan Considerations:.....	75
8.0 National Policy Considerations (Most recent considerations):	87
9.0 Environmental Impact Assessment:.....	89
10.0 Appropriate Assessment:	133
11.0 Assessment of issues not assessed under headings Environmental Impact Assessment or Appropriate Assessment:.....	143
12.0 Overall Conclusions on Planning Application Arising from Assessment: ..	155
13.0 Recommendation:	158

1.0 Site Location and General Site Description:

- 1.1. The site is located in a rural area in South County Roscommon. It is located approximately 1.5 kilometres to the north of the village of Dysart. Dysart is a small village at the crossroads of the R363 and the R357. The R363 has an east-west alignment and links from Athlone to Ballyforan at the County Galway/County Roscommon border. The R357 links northwards from Ballinasloe in County Galway to Athleague in County Roscommon. The site is approximately 18 kilometres south of Roscommon Town, a similar distance north of Ballinasloe and a slightly shorter distance north-west of Athlone. The R357 Regional Road runs along the western and north-western sides of the site. There is a local road, the L7522, with a north-west to south-east orientation approximately 700 metres to the north of the site and there is another local road, the L7602, to the east and south-east of the site. This road ends in a cul-de-sac close to the most easterly of the proposed turbines.
- 1.2. The site occupies a ridge in the landscape to the north of the R363. This ridge runs in a north-west to south-east orientation with the highest point in the site being located at approximately 110 metres OD. There is a dip downwards from here in all directions with a more gentle dip across the site of the proposed wind farm towards the south-east. Proposed Turbine No. 7 at 103 metres OD would be close to the highest point on the site with proposed Turbine No. 6, at 67 metres OD, at the lowest. The ridge on which the wind farm is proposed is on the skyline in views northwards from the R363. The area is generally relatively flat to undulating with no pronounced landscape features dominating the area. There are a couple of somewhat higher hills about 3 kilometres away to the north. There are a number of relatively flat low-lying areas in the vicinity which are subject to periodic flooding. The nearest of those to the site of the proposed development are Thomas Street, Turlough located just north of the village of Dysart, Lough Croan approximately 1 kilometre from Turbine No. 6 to the north-east and Cuilleenirwan and Coolagarry Loughs which are located approximately 1.5 kilometres to the east. The area in

question is a rural one with the nearest village being at Dysart to the south. There are somewhat larger settlements at Ballyforan, approximately 3.5 kilometres to the south-west, Curraghboy approximately 4.5 kilometres to the north-east, Four Roads approximately 3.5 kilometres to the north-west and Brideswell about 6.5 kilometres to the south-east. There is a scattering of dwelling houses located on the regional and local roads in the vicinity of the site. The plans submitted indicate 51 dwellings or permitted dwellings within 1 kilometre of the proposed turbines. There is a primary school located on Local Road L2015. The school is located approximately 1 kilometre east of the location of proposed Turbine No. 12.

- 1.3. The predominant land use in the area and particularly in the site of the proposed development and in the landholdings involved in the application is agriculture. The bulk of the turbines would be located in improved grassland fields currently used for grazing. A few, i.e. 8, 9 and 3 would be located in or close to scrubland areas. The field boundaries in the lands where the turbines are proposed are generally of stone wall construction. There is some but not a significant amount of mature tree/bush vegetation at the field boundaries. There is also some tree/bush vegetation associated with some of the archaeological features on the site. There are some mature trees near the western and north-western end of the site where the access off the R357 to the access road leading to Turbine No. 7 is proposed.
- 1.4. There are a number of archaeological features generally in the form of ringforts located within the lands where the turbines are proposed. These features, which generally consist of circular earth/stone banks, are relatively low and do not have a pronounced visual impact on the wider area. Some of the features where there are trees or bushes are visually more noticeable due to the vegetation rather than the earthworks themselves. There are a number of low earth features, some of which appear from the documentation to be of archaeological interest but which are difficult to identify due to overgrown scrub and vegetation, in the area close to the existing anemometer to the north of proposed Turbine No. 9. A number of former water tanks

and feeding troughs were noted in the area on inspection. These appear to be features of the area generally. Water seems to have been collected as run-off from a hard-surfaced area and stored in a tank. In some instances, it appears that the water may have been obtained from groundwater at a lower level. The majority, however, seem to have been fed from surface run-off. There are occasional groups of trees at field boundaries and surrounding residential properties throughout the general area. The fields have generally a fairly regular pattern and whilst small they are not exceptionally small by West of Ireland standards.

- 1.5. During the main inspection of the lands, where the turbines are proposed, on the 3rd May 2016 there was evidence of some parts of the lands at the eastern end of the site having been flooded relatively recently. It appeared that the location of proposed Turbine No. 6 was within or close to the area which had been flooded. A number of localised depressions which could act as discharge points for surface water were noted in the general area. These are referred to as dolines in the documentation and literature relating to karst areas. The main surface water drainage system in the area is the River Suck located approximately 4 kilometres to the west. The river is the boundary between Counties Galway and Roscommon. There was no evidence of surface water drainage channels in the lands where the turbines are proposed. A drainage channel indicated as the Ballyglass River, in the documentation, crosses the R363 south of Cuilleenirwan Lough approximately 1.5 kilometres to the south-east of the proposed turbines. This channel flows towards the south-west and to the River Suck. The channel appears to have been manually constructed in the section where it crosses the R363. The channel runs between the more elevated lands where the development in the current application is proposed and the elevated ridge and low hills to the south-east where the application referred to on File Ref. 20/244347 is proposed.

2.0 Details of Proposed Development:

- 2.1. The application as submitted to the Planning Authority was accompanied by an Environmental Impact Statement including a non-technical summary, a Natura Impact Assessment, a Planning Report and Photomontages. Detailed further information was submitted to the Planning Authority and received on 10th August, 2011. On 8th June, 2012 a report entitled a Report to Inform the Appropriate Assessment Process for the development was submitted to the Planning Authority in conjunction with further information submitted in relation to a second application then before the Planning Authority and which is now the subject of the appeal referred to on File Ref. 20.244347. (On the 8th June, 2012 the Planning Authority had already made a decision on the application being dealt with in the current appeal). This document however has now become part of the documentation being considered. Following a request for further information from An Bord Pleanála a wintering bird survey for the period January to March 2013 was submitted to the Board on 6th June, 2013. Following the decision of the High Court quashing the decision of An Bord Pleanála additional documentation was submitted to An Bord Pleanála and received on 18th May, 2015. The additional documentation included a wintering bird survey for the period October 2014 to March 2015, a document entitled Supplementary EIS and NIS Information (Grid Infrastructure) and a report on Hydrogeological/Geotechnical Aspects of the Phase 1 Seven Hills Wind Farm prepared by Jennings O'Donovan and Partners, Consulting Engineers.
- 2.2. The proposed wind farm would consist of 16 turbines with associated hardstanding areas each with a rated power output capacity of 2.5 megawatts having a hub height of 85 metres and a rotor diameter of 100 metres. The height to blade tip would accordingly be 135 metres. Details of the turbines were included in Appendix A of the further information submitted to the Planning Authority. It was clarified at the oral hearing that this appendix was a technical brochure not intended to illustrate the final finish. It was stated at the hearing that the external finish would be governed by a

condition of the consent and would typically be of a white/off-white colour as illustrated on the photomontages submitted and as recommended in the 2006 Wind Energy Development Guidelines for Planning Authorities. (The inspector had queried whether red stripes indicated on the brochure contained in Appendix 1 were proposed). An 85 metre high permanent anemometer mast is also proposed.

- 2.3. The documentation indicates there would 7,750 metres of internal access road (5 metres wide) and 6,713 metres of underground cabling. A single storey switch-room control facility (85.5 square metres) is proposed. This would be enclosed by a 2.5 metre high palisade fence. An existing dwelling house located in the south-east part of the site would be converted to use as offices. A septic tank is proposed to service the offices.
- 2.4. The documentation indicates that typical foundation depths for the turbines would be 2.775 metres and hard-standings measuring 39 by 18 metres would be provided beside the turbines. Part of the hardstanding areas would be covered over following construction. A Merlin Radar Scanner is proposed as a bird collision mitigation measure. There would be 2 temporary construction compounds. The documentation indicates that an archaeological walkway would be provided along the access track leading to the turbines. It was clarified by the applicant at the Oral Hearing that the archaeological walkway would be confined to the access track and would not provide access to the archaeological sites.
- 2.5. The documentation submitted indicates that a micro-siting allowance of 20 metres is required for the turbines and access tracks. There is reference in the documentation to a 50 metre micro-siting allowance. It was clarified at the Oral Hearing that the applicant is seeking permission for a 20 metres micro-siting provision.
- 2.6. The plans submitted indicate that the access to the turbines would be taken off the R357 at a location approximately 2 kilometres north of the crossroads at Dysart. The turbines would be laid out across the site in three rows running from north- west to

south- east. There would be six turbines in the two most northerly rows and four in the southern one. The dwelling to be converted to offices is located at the eastern end of the site close to the end of the cul-de-sac road which provides access to the lands in this area. The proposed switch- room would be located at the eastern end of the site close to proposed Turbine No. 12. The plans submitted indicate a temporary compound area towards the western end of the site a short distance back from the site entrance. Revised drawings of the site entrance indicating sight distances of 150 metres in each direction from a point 3 metres back from the edge of the road at the access were submitted in response to a request from the Planning Authority.

2.7. It is stated in the documentation submitted with the application that following the erection of the turbines the hardstanding areas would be reinstated to approximately 10 metres by 18 metres for the operational phase. The typical foundation depth for the turbines is stated to be 2.775 metres. It is stated that the depth may vary depending on the depth to bedrock. It is stated that each turbine base will occupy an area of approximately 300 square metres and the construction will involve the excavation of around 830 square metres of material. The electricity transmission cables within the site will be buried alongside the access tracks. It is stated that the proposed depth of the cable trench is 1 metre and the proposed width of the cable trench is 500 millimetres. The access tracks proposed would be 5 metres wide and 1 metre deep. It is stated that a micro-siting allowance of 20 metres radius in any direction is proposed for turbines and access tracks subject to various constraints set out in Chapter 6 to 14 of the EIS.

2.8. Documentation submitted indicates that the haul route for the construction phase of the development would be from the M6 along the R362, R363 and the R357. It is stated in the EIS that it is anticipated by the applicant that the proposed wind farm would most likely be connected by a 38 kV network to the existing 110 kV substation at Monksland Athlone subject to a grid offer from EirGrid. It is stated that it is the applicant's intention that the connection to the national grid could be by underground

cable. A separate planning application for this would be made if necessary by EirGrid/ESB Networks. The documentation submitted to An Bord Pleanála and received on 18th May, 2015 included supplementary EIS and NIS information in relation to the connection to the National Grid. This EIS and NIS information is based on an underground connection along the existing public roads. A map indicating in more detail the line of the grid connection within the built-up area of Athlone was submitted at the Oral Hearing in response to a question from the inspector requiring clarification of the route of the proposed underground connection within the built-up area.

3.0 Submissions made to Planning Authority:

3.1. Several third party submissions objecting to the proposed development were made to the Planning Authority during the period when the application was being considered. The main objections can be briefly summarised under the following headings:

- Landscape and Visual Amenity.

It was submitted that the development would be out of character and visually obtrusive in this area of rolling hills and farmland which has a unique landscape of stone walls, turloughs and archaeological sites. It was submitted that the development would interfere with the rural character of the area, be visually dominant and by its industrial character detract from the visual amenities of the area. The cumulative impact with the proposed wind farm to the south was referred to. Questions were raised in relation to the accuracy of the photomontages submitted and it was noted that the connection to the national grid, which it was argued may result in unsightly pylons, was not dealt with in the documentation.

- Adverse Impact on Residential Amenity.

It was submitted that the area was not sparsely populated but that it had a significant density of development. The wind farm would be close to dwellings and a school and it would devalue the dwellings due to noise, shadow flicker and visual impact. It would also negatively impact on television and mobile phone transmission signals.

- Adverse Impact on Development Potential of Lands.

It was submitted that the proposed development would sterilise lands in the vicinity and that some of the turbines were too close to third party lands. Housing opportunities for members of families living in the area would be restricted. It was submitted that the proposed micro-siting may further increase problems in this regard.

- Traffic Hazard Issues.

It was submitted that the road network in the area is not of an adequate standard to cater for the construction traffic which would be involved. It was also submitted that the turbines would result in driver distraction and so endanger public safety. The construction traffic would interfere with local traffic movements and endanger cyclists and pedestrians.

- Natural and Cultural Heritage Issues.

Reference was made to the multitude of conservation sites in the area and the importance of these sites including Lough Croan , the River Suck Callows and Four Roads Turlough for the conservation of designated species of birds. Reference was also made to the importance of local turloughs for the bird population in the area. Interference with the flight paths between the water bodies was referred to. Reference was also made to the history of the area

and the numerous archaeological sites close to and within the lands where the development is proposed. It was submitted that the development would have a negative impact on the setting of sites listed in the record of monuments and places.

- Impact on Turloughs and Flooding.

Reference was made to the karstic nature of the area and the network of fissures and conduits feeding the groundwater system. It was submitted that this had not been adequately assessed and the full extent of local turloughs and flooding had not been indicated. Reference was made to groundwater flooding close to Turbines 4, 5 and 6 and the switch room. It was submitted that the depth to competent bedrock had not been established and the impact on flooding events had not been assessed. It was submitted that there were significant areas of hardstanding proposed and the full extent of the impacts was not known. There is also inadequate detail in relation to the disposal of surface and pumped water.

- Public Health Impacts.

It was submitted that the proposed development could lead to pollution of local water supplies and have health implications due to noise, sleep deprivation and wind turbine syndrome.

- General Issues.

It was submitted that the current application is part of a larger development and the entire development should have been dealt with as a strategic infrastructure proposal. It was submitted that there was minimal public consultation and that the public were inadequately informed of public meetings in relation to the application. Several objectors questioned the link between the developer and the consultants preparing the environmental

impact statement. It was submitted that alternative sites were not adequately considered, there was a lack of detail on many aspects of the proposal and that planning permission for the development would set an undesirable precedent for other wind farms in the area. It was also submitted that the lands are very productive agricultural lands which would be damaged by the proposed development. The development would also have a negative impact on tourism and existing tourist related activities in the area. It would lead to increased immigration from the area and people would no longer wish to live in this quiet rural area which would be significantly changed by the proposed large industrial type structures. It was submitted that the development would not make any significant contribution to long-term employment and that the development would damage the development potential of adjoining lands due to turbines being located too close to third party properties. It was submitted that the area was not identified as suitable for wind farms in the County Development Plan and that Planning Authorities in different jurisdictions are now requiring greater setbacks from residential properties. It was submitted that alternative locations such as off-shore were more suitable and the site was chosen, to a large extent, due to its proximity to Athlone.

- 3.2. A number of submissions in support of the proposed development were also made to the Planning Authority. These submissions referred to the need to develop alternative energy sources and in particular renewable energy sources in order to reduce carbon dioxide emissions. The development could co-exist with farming practices in the area and would be an additional source of income for people farming in the area. The proposed community fund would benefit the area. The development would also help the national economy from the export of energy and from having an alternative secure source of electricity.

4.0 Decision of Planning Authority:

- 4.1. The Planning Authority decided to grant planning permission subject to 33 conditions.
- 4.2. Condition No. 2 of the Planning Authority's decision states that the permission is for a period of 10 years from the date of grant of planning permission and Condition No. 3 requires that the wind farm and all its ancillary components be decommissioned 25 years after commissioning unless, within that time, a new permission is obtained from the Planning Authority.
- 4.3. Condition No. 4 requires that Turbines 7 and 12 shall be omitted from the development. The reason for the condition is in the interest of proper planning and to protect the residential amenity of dwellings within 500 metres of these turbines.
- 4.4. Condition No. 5 requires compliance with the mitigation measures set out in the environmental impact statement and in the further information submitted to the Planning Authority except where conditions in the decision specify otherwise.
- 4.5. Condition No. 6 requires that the turbines, including the masts and blades and the anemometer, shall be finished externally in a colour to be agreed in writing with the Planning Authority.
- 4.6. Condition No. 7 requires that prior to the commencement of foundation works the developer shall submit to the Planning Authority for written agreement details of any proposed deviations from the scheme as a result of micro-siting.
- 4.7. Condition No. 10 requires that the recommendations set out in the bat survey, received as additional information, referring to the increase in cut-in speeds to 5.5 to 6 metres per second from 30 minutes before dusk and 30 minutes after dawn shall be implemented for all turbines.

- 4.8. Condition No.12 deals with the issue of noise. The condition requires that, at the critical wind speed, noise from the development shall not when measured externally at any dwelling exceed 45 dB(LA₉₀) or 5 dB(A) above the background noise level when measured over any 10-minute period between the hours of 8.00a.m. and 8.00p.m. Noise levels at all other times shall not exceed 43 dB(A). The condition provides for measurement of noise levels at the 10 closest occupied dwellings within 6 months of the commissioning of each phase of the development. The reason for the condition is to protect the amenities of residential properties in the vicinity of the development.
- 4.9. Condition No. 13 requires that shadow flicker at the surrounding dwellings shall not exceed 30 hours per year or 30 minutes per day. It is stated that in the event of this limit being exceeded the operation shall cease until mitigation measures have been agreed in writing with the Planning Authority. The reason is in the interest of residential amenity.
- 4.10. Condition No. 15 requires that no discharge of water shall take place into any turlough. Construction works pertaining to Turbine No. 6 shall take place during the period of May to September only. The reason is in the interest of environmental protection.
- 4.11. Condition Nos. 19 and 22 refer to the payment of contributions towards expenditure incurred in the provision of public infrastructure and services. Condition No. 19 refers to contributions for setting back poles and Condition No. 22 to contributions for road works.
- 4.12. Condition No. 23 requires the lodgement of a cash deposit or bond for the satisfactory reinstatement or repair of any roads affected as part of the development.

- 4.13. Condition No. 27 requires the employment of a qualified archaeologist to complete an archaeological assessment to examine the nature, extent and locations of archaeological material on the site and to recommend measures to mitigate any impact of the development. The reason for the condition is in the interest of preserving items of archaeological significance affected by the development.
- 4.14. Condition No. 29 requires the payment of a contribution towards the cost of providing public infrastructure and services that was incurred or is proposed by the Planning Authority. This condition does not reference the relevant section of the legislation unlike Conditions Nos. 19 and 22 which specifically refer to section 48(2)(c) of the Planning and Development Act.
- 4.15. Condition No. 30 requires that on full or partial decommissioning of the wind farm or if the wind farm ceases operation for a period of more than 1 year turbines concerned and decommissioned structures shall be removed within 3 months of decommissioning unless within that timeframe a new permission is obtained from the Planning Authority.
- 4.16. Condition No. 31 requires that 10 years prior to decommissioning the developer/occupier of the site shall lodge a cash deposit or a bond with the Planning Authority to secure the satisfactory reinstatement of the site. The reason for the condition is to ensure satisfactory reinstatement.
- 4.17. Condition No. 32 requires that the archaeological interpretative path network and the information boards to be located at the base of the turbines shall be in place prior to the commissioning of any turbines. The reason for this condition is in the interest of orderly development.

5.0 **Grounds of Appeal:**

5.1. There are a total of 8 third party appeals against the decision of Roscommon County Council.

5.2. The appellants are:

Wind Turbine Group South Roscommon

Department of Arts, Heritage and the Gaeltacht

Mr. Tom and Fiona Farrell

Mr. Eamonn Kelly

Ms. Marie Donnelly

Mr. Thomas Burke

Mr. James Francis Fallon

Mr. Paul Donoghue

5.3. Three of the appellants i.e. the Wind Turbine Group South Roscommon, Mr. Eamonn Kelly and the Department of Arts Heritage and the Gaeltacht (now the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs) made representations at the Oral Hearing held on the 9th/10th and 13th June. None of the other appellants were represented at the oral hearing. Appendix 1 of this report contains a summary of the oral hearing proceedings.

5.4. The following briefly sets out the main grounds of appeal as submitted to An Bord Pleanála in late October and early November, 2011.

Appeal by Wind Turbine Group South Roscommon:

5.5. It is submitted in this appeal that the planning report of Roscommon County Council avoided the issue of the possible impact of the development on the Natura 2000 sites and on the hydrology and habitats of these sites. It is submitted that the report primarily focussed on potential impacts on avifauna. It is submitted that the function

of the active karst as a recharge for the Natura 2000 sites was not given adequate consideration. It is submitted that the indirect impact which could arise from the possible loss of habitat must be taken into account in addition to the direct impact on birds arising from interference with feeding, roosting and commuting areas.

- 5.6. It is argued in the ground of appeal that the applicant is dividing the overall development into different phases and that this results in project splitting. Having regard to the application for a 110 kV substation in Phase 2 the two phases of the development would be connected and accordingly the entirety is one project as referred to by An Bord Pleanála in correspondence with Roscommon County Council. It is submitted that the application should have been referred to the Board to make a determination on the issue of strategic infrastructure. The current application cannot be considered in isolation as it is linked to the Phase 2 development which is the subject matter of appeals on File Ref. 20.244347.
- 5.7. It is submitted that the EIS is inadequate as it does not adequately address issues relating to the pattern of recharge of turloughs in the area. It is similarly argued that the Natura Impact Statement submitted is inadequate and a report from Scott Cawley, Ecological Consultants was submitted to support this contention. The impacts of the connections to the national grid have not been factored into the assessments. Questions are raised about the expertise and skills of the NIS authors and whether or not it is adequately distinct from the environmental impact statement.
- 5.8. It is submitted that the landscape character assessment for County Roscommon does not identify the area as an example of a particularly appropriate location for wind farms. It is also submitted that the development does not comply with the Wind Energy Guidelines for Planning Authorities 2006 in that it does not comply with the recommendation that in hilly and flat farmland the spatial extent of wind farms is generally limited to small wind energy developments with medium height turbines also preferred.

- 5.9. In discussing the impact of the proposed development on the karst landscape reference is made to a statement by Dr Michael Long to the effect that the site is a complex one from a geotechnical perspective and it will present significant challenges for design and construction. Dr Long's reference to the rate at which the turlough at Cuilleenirwan empties in the spring is evidence that the drainage network in the area comprises relatively large size openings. Dr Long had pointed out the need for additional investigations both for hydrogeological assessment and for foundation design. It is not accepted that the proposed structures and particularly the 16 turbines are not located immediately on or adjacent to significant karst features. It is submitted that Table 2 of the Geophysical Survey Report (submitted as additional information) identifies karst features under the majority of the turbine basis and under the substation. It is argued that planning permission should be refused on hydrological grounds pending the outcome of detailed site investigations and site specific engineering solutions.
- 5.10. In discussing hydrogeological issues reference is made in the appeal to submissions by Dr Les Brown, Hydrogeological Consultant. It is submitted that it is highly likely that the site lies within the recharge area of a number of turloughs and this presents a significant risk to internationally recognised habitats, the regional groundwater system and local flooding. It is submitted that the development proposed could modify groundwater flows in such a way as to alter the recharge of turloughs or create new groundwater pathways which would cause flooding in other areas. On the basis of the information submitted it could not be confidently stated that there would be no negative impacts on the groundwater system which the turloughs depend on. It is submitted that accordingly provisions set out in Article 6(3) of the E.U. Habitats Directive have not been complied with. It is submitted that there are no imperative reasons of overriding public interest which require the particular proposal to proceed having regard to the identification in the Roscommon County Development Plan and the accompanying Landscape Character Assessment of

large areas in the county which meet the technical requirements in relation to wind speed.

5.11. In commenting on the impact of the proposed development on the ecology of the area reference is made to a report by Scott Cawley, Ecological Consultants which is included as an appendix to the appeal. This report sets out deficiencies in the assessment. Issues identified include uncertainty over cumulative impacts to Whooper Swans particularly from overhead lines which may be required, inadequate investigation of groundwater impacts, inadequate investigation of impacts on breeding curlews, an in-adequate Habitat Management Plan and the fact that turbines have not been moved in line with the recommendations made in relation to bats. It is also submitted that Conditions Nos. 9 and 10 contravene national legislation and guidance by requiring further surveys to compensate for an in-adequate NIS and EIS. It is submitted that the threat to Greenland White Fronted Geese in the vicinity of Lough Croan has not been adequately assessed although one of the reasons for designating Lough Croan is its importance as a wintering location for such birds. The consultants, on behalf of the appellant, question the methodology used for calculating the flight height of birds observed and the amount of survey work carried out in the vicinity of the site.

5.12. It is submitted that the access roads to the appeal site are subject to flooding and some of the lands in the vicinity of the proposed Turbines 4, 5 and 6 are also prone to groundwater flood events. It would also appear that the 100-year flood event would impact on the area where Turbine 16 is proposed. It is submitted that a thorough flood risk assessment should be carried out to determine the impact of the development on flooding and the impact of flooding on the proposed development. This would require significant additional geological, geophysical and hydrogeological investigations. The surface water drainage system must also be designed to ensure that the development would not impact negatively on the active karst upon which the site is located.

5.13. In commenting on landscape and visual impact it is noted that the EIS states that the turbines can only be attributed the highest order of magnitude visual presence. It is submitted that the visual impact assessment is incorrect in its appraisal of the impact on the archaeological features and that the visual impact on the setting of the monuments must be categorised as a significantly adverse impact. The appellants also question why the impact is described as temporary when the turbines would be in place for 25 years and the granting of planning permission would establish the principle of the acceptance of a wind farm at this location. If the principle of a wind farm at the location is accepted it will be acceptable beyond the lifetime of the turbines. The consultants question the accuracy of a number of the photomontages submitted. By comparing turbine heights etc. with existing features, particularly the anemometer on the site, it is argued that the impact of the turbines is sometimes understated. It is also submitted that the photomontages are too small to get a proper impression of the physical scale and visual impact. It is submitted that irrespective of the accuracy of the photomontages it is apparent that in some views the proposed development will have a very significant detrimental impact on the surrounding area.

5.14. A report by Martin Fitzpatrick of Arch. Consultancy Limited, a professional archaeologist, is submitted with the grounds of appeal. This raises a number of questions in respect of the archaeological assessment. Particular note is made of the description of the impact on the visual setting of the monuments. It is submitted that the impact on the setting of the monuments should be described as long-term negative and significant.

5.15. It is submitted that the proposed development would have a significant impact on the development potential of adjoining lands. Reference is again made to the Wind Energy Guidelines and the reference to wind farms in his type of topography generally being limited to small wind energy developments and preferably of medium height. It is submitted that a wind farm of the size proposed is excessive for this type

of landscape. It is submitted that people with a specific rural housing need in the area will be forced to develop in the shadow of the turbines with all the negative impacts to which they give rise. It is submitted that the turbines would constitute a daily dominant imposition on the local landscape and they would constitute a significant increase in background noise levels. Reference is made to the 51 houses within 1 kilometre of the proposed development. It is argued that the night-time level predicted, at about 43 decibels, is much higher than would be expected at local back gardens at night-time. Reference is also made to shadow flicker and the difficulty in carrying out an assessment on the qualitative rather than quantitative impact arising.

- 5.16. It is submitted that an adequate survey of the public road has not been carried out to determine whether the regional road is capable of handling the unusual type of traffic generated at the construction phase. It is submitted that the horizontal and vertical alignment of the entirety of the haul route from the M6 to the site would need to be assessed not just at roundabouts and junctions.
- 5.17. It is submitted that in the original proposal to EirGrid the applicant had applied to connect 140 megawatts. The two phases of the development covered in the two applications made to the Planning Authority at the time of the appeal only amounted to 87.5 megawatts. The appellants questioned where the remainder of the 140 megawatts was to be provided from and submitted that enough information had not been supplied to enable a full assessment of the cumulative impacts of the development on the proper planning and sustainable development of the area to be carried out.
- 5.18. The submission on behalf of the Wind Turbine Group South Roscommon included a number of appendices some of which have been referred to above. Appendix 6 and 7 deal, inter alia, with turloughs, flooding, geology and hydrogeology. It is concluded in both appendices that more detailed information is required to carry out a scientific assessment of the impacts of the proposed development on the groundwater and

turlough network. It is recommended that a detailed hydrogeological study be carried out by an experienced karst hydrogeologist in order to gain an understanding of the groundwater network and of the filling and emptying mechanisms of the turloughs. It is also recommended that a detailed site investigation is required in order to determine the depth to competent rock on which to found the large bases required for the turbines. It is stated that full site specific design proposals for the foundations, roads, service trenches etc. and the drainage including all existing and proposed levels should be prepared. It is submitted that this information would all be required in order to enable the public authority to carry out an appropriate assessment.

- 5.19. It is argued in the archaeological report from Arch Consultancy Limited attached as an appendix to the grounds of appeal that the indirect impacts of the development on archaeological remains receives little or no attention in the EIS. It is submitted that the archaeological assessment does not stress that many of the monuments would be located between the proposed turbines and as such both the setting and relationship of the monuments to each other would be severely impacted by the development. It is noted in the archaeological report that when the archaeological assessment was carried out some details of the development had not been determined so a comprehensive assessment of effects could not have been carried out. It is noted that the report in the EIS recommends post consent testing. It is submitted that the discovery of significant material might require an area to be bypassed or avoided. It is suggested that if the application were to be considered a pre-planning programme of geophysical surveying and targeted archaeological testing may be considered as part of the assessment. It is submitted that the wind farm would have a visual impact on all monuments in the surrounding area and the impact on monuments located between the turbines would be significant.

Appeal by Dept. of Arts Heritage and the Gaeltacht:

5.20. It is stated in the appeal by the Department of Arts, Heritage and the Gaeltacht that the proposed development site is within a cluster of highly important bird sites and that disturbance, displacement and collision were major concerns. It is submitted that the EIS and Appropriate Assessment which accompany the planning application did not adequately demonstrate certainty that the development would not have a negative impact on any of the Annex I Birds Directive species which include Whooper Swans, Greenland White Fronted Geese and Golden Plover. Reference is made to the Department's letter to Roscommon County Council on 18th August, 2011 recommending that planning permission should not be granted. A copy of this letter was included with the grounds of appeal.

Appeal by Mr. Tom and Fiona Farrell:

5.21. The appeal by Tom and Fiona Farrell includes a map indicating the appellant's landholding in the vicinity of the site of the proposed development. The landholding is located on the north side of a cul-de-sac lane running eastwards from the R357. The appellants state that they had withdrawn their support for the proposed development in a letter submitted to Roscommon County Council. They request that An Bord Pleanála uphold the recommended separation distance of a minimum of 2 rotor blades, which they state is 200 metres, from turbines to non-associated landowners as set out in the Planning Guidelines for Wind Energy Development 2006. They state that Turbines 13 and 14 would be located within 200 metres of their lands and they included a map indicating the turbines with circles drawn at 200, 220 and 500 metres from the centre of the turbines in question. It is noted that Roscommon County Council had required that turbines within 500 metres of dwellings were omitted from the scheme. It is submitted that the proposed development would sterilise their lands from receiving planning permission for their

children. They also submit that the proposed development would result in no development potential for wind energy development on their lands.

Appeal by Mr. Eamonn Kelly:

5.22. The appeal by Mr. Eamonn Kelly also included a map indicating the location of his lands close to the site of the proposed development. Mr. Kelly's lands are indicated on the south side of the same access lane as serves the Farrell's land referred to in the previous paragraph. Mr. Kelly submits that he owns lands within 500 metres of the proposed development and this is the only developable land for dwellings for his family. It is the only viable site for planning permission for a dwelling for his son. He refers to the good success rate for planning permissions for single dwellings in the area. Mr. Kelly submits that he had not signed any agreement in support of the development. He also notes the omission of Turbines 7 and 12 in the Planning Authority decision in order to protect the residential amenity of dwellings within 500 metres of turbines. He submits that the proposed development would sterilise his lands from receiving planning permission for his daughters and son. A map attached to Mr. Kelly's appeal shows the majority of his landholding in the area being located within the 500 metre radius of Turbines 14 and 16.

Appeal by Ms. Marie Donnelly:

5.23. The appeal by Ms. Marie Donnelly contains a map indicating her landholding in the area. The landholding is indicated close to proposed Turbine No. 3 and between Turbines 2 and 3. It is stated that proposed Turbine No. 3 would be approximately 52 metres from her lands and she had not given consent for the distance to be reduced from the 200 metres recommended in the Guidelines on Wind Farms for Planning Authorities 2006. She also submits that allowing for micro-siting Turbine No. 9 would be less than 200 metres from the boundary of her lands. She notes that the issue of wind-take had been raised in Item 17 of the request for further information. She quoted from the response to the further information request. She considers the

response to be ambiguous and unclear. She quotes from the response where reference is made to 13 landowners and to 7 non-landowners being included and considered to be involved in the proposed development. Table 14 of the response to the request for further information sets out distances to adjoining land boundaries which are not associated with the development taking account of the 20 landowners referred to. Ms. Donnelly's appeal is accompanied by a map with circles drawn indicating radii of 200 and 220 metres from proposed Turbines 2 and 3.

Appeal by Mr. Thomas Burke:

5.24. The appeal by Mr. Thomas Burke is also accompanied by a map showing the location of his lands in the vicinity of the proposed wind farm. Lands belonging to Mr. Burke are indicated to the west and to the east of Turbines Nos. 1 and 2. The lands to the east of Turbine No. 2 adjoin those of Ms. Donnelly referred to in the previous paragraph. Mr. Burke submits that he had not entered into any written or verbal agreement with the applicant allowing a relaxation of the distances from the proposed wind turbines to his land boundary. He requests An Bord Pleanála to uphold the recommended separate distances of a minimum of two rotor blades, stated to be 200 metres, from turbines to non-associated land holdings. He also refers to confusion arising from the response to the request for further information on the issue. He submits that Turbine No. 2 would be located within 52 metres of his lands. He refers to the comment by the applicant that the guidelines are not mandatory. He submits that they offered advice to Planning Authorities to assist in determining applications. He also submits that the guidelines do not require non-associated landowners to provide evidence of proposals for wind energy developments on their lands. He also notes that the conditions require that Turbine Nos. 7 and 12 be omitted in order to protect the residential amenities of dwellings within 500 metres of turbines. He submits that the proposed development would sterilise his only suitable sites from development. He submits that his lands would have no development potential for either dwellings or wind energy as a result of the

proposed development. A map was submitted indicating the location of Mr. Burke's lands relative to distances of 200, 220 and 500 metres from proposed Turbines Nos. 1 and 2. A separate map was submitted indicating the road access from the public road system to the lands on the west side of Turbine No. 1.

Appeal by Mr. James Fallon:

5.25. The appeal by Mr. James F. Fallon is also accompanied by a map indicating his landholding in the vicinity of the turbines. The landholding in question is located to the east of proposed Turbine No. 6. Mr. Fallon clarifies that he has not entered into any agreement with the applicant allowing for a relaxation of the distances from the proposed wind turbines to his land boundary. He requests An Bord Pleanála to uphold the recommended separation distance of a minimum of two rotor blades, stated to be, 200 metres from turbines to non-associated lands. He also refers to the wording used in the response to the issue in the request for further information as being ambiguous and unclear.

Appeal by Mr. Paul Donoghue:

5.26. The appeal by Mr. Paul Donoghue indicates his lands as being located towards the southern end of the site of the proposed development with one parcel of his lands being located between proposed Turbines Nos. 14 and 15 and another parcel being located to the south-east of proposed Turbine No. 16. He submits that there are three proposed turbines within 200 metres of his lands and taking micro-siting into account a fourth turbine would be located approximately 200 metres from his property. Mr. Donoghue submits that he had originally signed a letter giving approval to the applicants to the setback distance proposed. He later, however, withdrew this consent for the proposed development after viewing the planning file and seeing the size, location and impact of the proposed turbines. He has submitted a copy of his letter to Roscommon County Council raising objections to the proposed development on the basis of inadequate consultation, implications of shadow flicker, proximity to

his property and effects on his land and livestock. He also submits that the road infrastructure would not support such a large development. The letter to Roscommon County Council contained more details of his objections on health and environmental grounds.

6.0 Summary of later Responses/Submissions:

- 6.1. In its initial response to the grounds of appeal the applicant argues that the current application and that referred to on File Ref. 20.244347 are discreet applications with two kilometres between the sites. It is submitted that the later application i.e. that referred to in File Ref. 20.244347 deals with cumulative aspects of the two developments. It is submitted that there is no advantage gained by the applicant in making applications to the Council rather than to the Board. It is submitted that when the applicant withdrew from the consultations with An Bord Pleanála the number of turbines being considered was below the threshold for strategic infrastructure development at that time. It is submitted that the two sites are separate and distinct with significant physical and environmental constraint differences between them. It is submitted that the issue of project splitting only arises when an attempt is made to circumvent the EIA Directive. This has not been done in the current case. It is noted that Roscommon County Council considered the application to be valid and determined it accordingly. It is submitted that the application is not dependent on Phase 2 for connection to the national grid.
- 6.2. It is submitted in the applicant's response to the grounds of appeal that the development complies with the Roscommon County Development Plan 2008 – 2014. It also complies with the Planning Guidelines for Wind Farms 2006. The site is located within the most favourite areas as identified in the draft Roscommon Wind Energy Strategy. The site is not located in or in a buffer zone of a Natura 2000 site.

- 6.3. In response to the appeal by the Department of Arts, Heritage and the Gaeltacht the applicant submits that in a natural system there can never be complete stated or demonstrated certainty that any development will not have a negative impact on individuals of a given species. However, having regard to the documentation submitted and the rare occurrences of small numbers of species crossing the site there is reasonable scientific certainty that the proposed development will not have a negative impact on the conservation status of these species as a whole. Reference is made to the survey work carried out in this regard. The applicant refers to a decision by An Bord Pleanála on application Ref. PL07.239118 where the nearest turbine was located 153 metres from an SAC and NHA. Reference is made to a condition requiring ornithological monitoring in that decision. It is submitted that Conditions 8 and 9 of the Roscommon decision would have a similar effect in this case. Reference is also made to the proposed Merlin Aviation Radar Monitoring System which would be of major benefit in undertaking this monitoring. It is noted that during the survey work no Greenland White Fronted Geese or Golden Plover was seen in the immediate vicinity of the site. A total of 12 Whooper Swans were observed passing through the site. There is no evidence however to indicate that Whooper Swans habitually use the site or the air space above the site.
- 6.4. It is submitted that the proposed Habitat Management Plan presented as a response to the Planning Authority's request for further information provides a set aside area of 4 hectares of grassland which in time will provide suitable habitat for ground nesting birds such as Curlews, Snipe, Lapwing and perhaps Golden Plover. It is submitted that this would improve the quality of the environment with regard to avifauna. The proposed Merlin system is an additional insurance measure which would mitigate even the rare occurrences of birds flying over the site by automatically shutting down the turbines if a potential collision event is detected.

- 6.5. In commenting on the potential groundwater impact of the development the applicant refers to the turbine bases occupying an area of .42 hectares with an overall site area of approximately 19.7 hectares. Reference is made to the suite of detailed construction, operation and decommissioning phase mitigation measures set out in the EIS. Condition 15 of the Roscommon decision also prohibits any discharge of water to any turlough. It is submitted that there will be no impact on groundwater quality or recharge patterns.
- 6.6. The applicant argues that it has followed the standard methodology in terms of making an application for a wind farm without including the grid connection which is a matter for EirGrid and a further application. It is submitted that no overhead electricity cables are proposed.
- 6.7. The applicant submits that the information submitted in relation to the flight height of Whooper Swans in the area is factual and scientific. It is noted that flight heights above 35 metres were recorded on one occasion at the proposed Phase 2 site. This is attributed to the unavailability of roosting at Lough Feacle due to it being frozen at the time.
- 6.8. The applicant submits that whilst the surveys carried out are referred to as Whooper Swan surveys, they could also have been called Whooper Swan and Greenland White Fronted Geese surveys. Greenland White Fronted Geese however were not recorded as regularly occurring in the vicinity of the site during the period of the surveys. Greenland White Fronted Geese were not observed during the surveys and are not considered under threat by the development. The mitigation measures would also mitigate any potential threats to Greenland White Fronted Geese. It is submitted that research had indicated that wind turbines in European farmland is unlikely to have a detrimental effect on farmland birds. It is further submitted that there is no habitat suitable for breeding Curlews within the immediate boundaries of the site.

Curlews may breed in the environs of Lough Croan SPA but this is over 1 kilometre from the nearest turbine.

- 6.9. The applicant submits that the planning officer's report in Roscommon County Council contained a comprehensive appropriate assessment with a detailed assessment of the EIS also. The conclusions of the planning officer are noted. This refers to the footprint of the development being small and the application site not encroaching directly upon any Natura 2000 site. It is concluded that the implementation of the mitigation measures would prevent significant adverse effects on the species and habitats identified and strategic consideration must be given to the wider environmental benefits of wind farms.
- 6.10. The applicant contents that the Habitats Management Plan referred to in the additional information will ensure that any tree lines or hedgerows removed will be remedied by enhancement of hedgerow species. Condition No. 5 of the decision to grant permission which requires compliance with all of the environmental, construction and ecological mitigation measures set out in the EIS and in the response to further information is also referred to. It is stated that the applicant would be required to retain on-going advice from an on-site ecologist in respect of bats together with on-site archaeological consultancy advice during the construction phase. It is submitted that the level of information submitted on bat activity in the area is of an adequate standard to advise on the mitigation measures required. Micro-siting would also have potential to protect bat species. Where this is not sufficient additional measures such as increased cut in speeds and bat scaring devices will be considered. Reference is made to Condition No. 10 of the decision to grant permission in relation to cut in speeds. This applies to all turbines. This requirement is in excess of that recommended.

6.11. The applicant states that it is recognised that the proposed development site is in a karst area. The EIS contains a comprehensive suite of mitigation measures which have been prepared to ensure that there will be no likely negative impact on groundwater. The issue is also covered in Condition Nos. 1, 5, 7, 8 and 15 of the decision to grant permission. It is submitted that the hardstanding areas would be a small proportion of the entire site and that drainage would be designed to result in diffusion into the adjacent ground without causing erosional gullies. It is submitted that following construction the drainage would remain essentially unaltered and accordingly there is unlikely to be any impact on groundwater. Development would not alter the amount of rainfall on the site. Water would not be removed from the catchment or alter the movement within the catchment. Clay bunds would be used at intervals of 20 metres along the cable trench to prevent the trenches becoming preferential drainage pathways. It is acknowledged that seasonal flooding is present in the area. It is submitted that no turbines will be located within the flood zone. It is stated that even if there were this would not lead to any significant increase in flooding in the area.

6.12. It is submitted that it is standard practice that detailed foundation design is undertaken post consent and is part of the micro-siting procedure as provided for in the Wind Energy Planning Guidelines. It is submitted that piling of foundations is highly unlikely. Turbine foundations would be designed to ensure the structural integrity of the turbine and to conform to the mitigation measures set out in the EIS. Reference is made to the geophysical survey carried out and to the recommendations arising therefrom. It is submitted that based on the results of the geophysical survey turbine foundations can be achieved at the locations proposed. If borehole surveys at design stage require minor adjustments this can be achieved within the 20 metre micro-siting distance. In the event of any adjustment greater than 20 metres being required the applicant would apply for permission to relocate the turbine and associated infrastructure.

- 6.13. The applicant does not question that the development of a wind farm creates substantial and notable features which would alter the character of the local landscape. The question which arises is whether the development is capable of being accommodated within the local landscape without seriously injuring the visual amenity of the area. Reference is made to the landscape and visual impact assessment in the EIS where it is concluded that the impact is considered to be moderate. The lands are not in a protected or visually sensitive landscape. There are no designated scenic routes in the vicinity. No specific presumption against wind farms applies in the immediate area. There is no dwelling within 500 metres of any proposed wind turbine. It is noted that the site is within Landscape Character Area 34 i.e. Lough Funshinagh stonewall grasslands and esker ridges in the County Roscommon Landscape Character Assessment (2008). This landscape character area is described as a landscape of moderate value which is the lowest of the four categories identified in the study. Landscape Character Area 34 has been characterised as the most favoured area in relation to wind farm development in the draft Roscommon Waste to Energy Strategy. The planning officer concluded that whilst the existing character will be changed, however having regard to the moderate landscape value attributed to the area, it is considered that the wind farm is visually tolerable in the landscape which is not of exceptional visual quality. It is submitted that the photomontages presented have been prepared according to best practice methodology and any anomalies contended by the appellants are a matter of perception due to local geography. It is submitted that the photomontages (54 in total) represent a true and accurate representation of the proposed development.
- 6.14. It is submitted that there is no recorded archaeological, architectural or cultural heritage features within the site area and that all monuments and places recorded within 750 metres of the study have been addressed in the EIS. A report by the project archaeologist was submitted in response to the archaeological objections. It is argued in the main response that the possibility of a future application and

permission after the 25-year timescale cannot be prejudged. It is accordingly concluded that the impact of the proposed development will be temporary. It is submitted that the impact on the archaeological sites would be moderate rather than significant as claimed by the appellants.

- 6.15. Responding to issues in relation to impact on adjoining lands the applicant refers to the minimum separation distance of 500 metres set out in the Wind Farm Planning Guidelines and the Draft Roscommon Wind Energy Strategy. It is noted that two turbines have been omitted in the decision of Roscommon County Council in order to achieve this setback. It is accordingly unlikely that the development would have any adverse impact on the residential amenity of dwellings in the area. It is submitted that the size of the turbines proposed is in line with the present industry norm. The comparison with smaller turbines submitted within the response to further information request included the production of photomontages. It is submitted that a reduction in height would result in a loss of energy which would require a greater density of turbines.
- 6.16. It is submitted that the proposed development complies with the Wind Energy Planning Guidelines in relation to noise and also generally in relation to shadow flicker. It is noted that one dwelling located 480 metres from the proposed development would be likely to experience above the recommended 30-hour limit of shadow flicker per annum. This dwelling is in the ownership of a landowner involved in the application and the omission of Turbines Nos. 7 and 12 results in all 51 dwellings within 1 kilometre of being outside the 500 metre buffer referred to in the Wind Energy Guidelines. Reference is made to the conditions in the Planning Authority decision in relation to noise and shadow flicker.
- 6.17. It is submitted in the response that all of the turbines are located within the involved landowners' lands and the rotor sweep would not over-sail any non-involved landowners' properties. It is stated that the development potential of lands in the

area is limited to agricultural development, rural generated one-off housing and wind farm developments. It is submitted that the lands belonging to the third party appellants' are small holdings and a number of these have limited or no road access. Reference is made to Table 14 of the response to further information which indicates that a 200 metre set back can be achieved in the majority of instances. It is submitted that there is no evidence that wind farms sterilise the development potential of nearby lands for new rural housing or farm building developments. The Wind Farm Guidelines do not provide recommendations on distances for a proposed dwelling from a wind farm. Planning applications will continue to be assessed on their merits. It is submitted that there are no firm proposals for wind energy development on the adjoining lands belonging to non-involved landowners.

- 6.18. In responding to arguments in relation to the adequacy of the road network to cater for the construction phase of the development the applicant submits that a transport management plan would be drawn up to minimise and control any minor impacts of the proposed construction traffic. This will be agreed with Roscommon County Council prior to the commencement of development. The applicant is satisfied that the local road network can accommodate the transportation of abnormal loads to the site in a safe manner. Reference is made to Condition No. 23 which requires the furnishing of a bond to be used for the possible repair of roads.
- 6.19. The applicant's response to the appeal was accompanied by reports from WaterWise Environmental on issues relating to geology and karst issues and a report by Mr Dermot Nelis, Archaeologist on archaeological Issues.
- 6.20. The WaterWise report concludes that the turbine structures would be founded on competent rock which would be confirmed by boreholes where required. It is submitted that the footprint of the hardstanding areas are small in comparison to the site size. It is submitted that whilst this may have a small effect the mitigation measures outlined would minimise any possible risk. It is submitted that once the

development is operational it is not expected to pose any great threat to groundwater as reaction with the groundwater will not arise. There will be no abstraction from or discharge to groundwater. It is stated in the report that detailed rotary core boreholes are recommended at each location to assist in the finalised foundation design. Boreholes are recommended to a depth of 25 – 30 metres below ground level. It is submitted that in most cases typical foundation design as indicated in the EIS be deemed suitable. However, a range of foundation types would be required and determined on a site by site basis. In relation to Turbine No. 6 it is stated that even if the turbine were to be located in the flood waters it would not lead to any significant increase in flooding in the area and would not be potentially injurious to public health. It is recommended that material used to construct the tracks should mimic the natural permeability of the subsoil to avoid alteration to drainage patterns.

6.21. The submission from the archaeologist on behalf of the applicant outlines the extent of the survey and investigations carried out. It is argued that indirect impacts on archaeological monuments are assessed in section 14.8 of the EIS where potential visual and noise impacts are discussed. Reference is also made to section 14.6.1 of the EIS which, it is submitted, records the distances from each turbine to the nearest monument. It is stated that this clearly establishes that archaeological sites are located between the proposed turbines contrary to the appellant's submission. It is submitted that figure 14.2 shows the proposed access road and the impact of this on heritage features is assessed in the report. It is submitted that none of the six field systems in proximity to the development are located within the land-take. There will be no direct or indirect impact on any of these field systems. It is submitted that the nearest recorded burial site is approximately 370 metres to the north-east of Turbine No. 2. Pre-development test trenching would be carried out and mitigation measures will be recommended following the results of this test trenching. Other monuments referred to in the appeal submission are located outside the land-take and the pre-

development test trenching would be carried out in areas closest to the nearest archaeological sites.

- 6.22. The archaeologist inspected the lands again following the lodgement of the third party appeals and confirms that no previously unrecorded archaeological, architectural or cultural heritage features or areas of archaeological potential were identified. It is submitted that post-planning pre-development test trenching is a common archaeological mitigation strategy. If archaeological material is uncovered as a result of testing it will be necessary to either preserve the features by report or in situ. It may also be possible through micro-siting to move any turbine impacting on archaeological features. Mr. Nelis refers to meetings with an archaeologist in the National Monuments Service where details of the photomontages to be prepared were agreed. He submits that there would be a temporary moderate visual impact and a temporary negligible noise impact of the archaeological resource. There would be no construction impact on recorded archaeological remains.
- 6.23. In a response to the first party response to the third party appeals consultants on behalf of the Wind Turbine Group South Roscommon, in a submission received on 13 December 2011, defend the submission that the visual impact on the archaeological monuments would be significant. They also again contend that the impact should be considered to be long-term as permission for the continuation of the wind farm beyond 25 years is likely once the principle has been established. It is not accepted that the decision by An Bord Pleanála on the Galway case referred to by the applicant is comparable with the current case.
- 6.24. The consultants on behalf of the appellants' note that the applicant's arguments in relation to whether or not the two phases are part of the same project now differ from their argument when they were in consultations with An Bord Pleanála. It is again submitted that the applicant should have completed consultations with An Bord

Pleanála and if required lodged an application for the entire development under the strategic infrastructure provisions.

- 6.25. It is submitted that the proposed development does not comply with various provisions of the Wind Energy Guidelines relating to location, spatial extent, height and cumulative effect. It is pointed out that the draft Roscommon Wind Energy Strategy was not adopted by the Council and accordingly this document serves no function in the consideration of the appeal.
- 6.26. On the potential impact of avifauna it is submitted that there is no basis for the comparison with the Board's decision on PL07.239118. The appellants question the amount of time spent at Vantage Point 1 in the appeal site in carrying out the bird surveys. It is submitted that the survey was not specific to the site of the current appeal. Reference is made to the Department of Arts, Heritage and the Gaeltacht's objection to the proposed development as they are not satisfied that the EIS and Appropriate Assessment have provided enough information to demonstrate that the development would not have a negative impact on Annex I Bird Species. It is submitted that there is a lack of any specific consideration of the possible impact of the development upon wintering birds at Lough Croan and that the information provided is not specific to the appeal site. Having regard to the fact that the surrounding Natura 2000 sites are hosting sites for winter population of Greenland White Fronted Geese the unforeseen impacts on the recharge serving these sites could undermine their attractiveness by way of loss of habitat or feeding and commuting grounds.
- 6.27. It is submitted by the appellants' agent that there is not enough information in the application in relation to the major civil engineering works associated with the development to assess the likely impacts of such a development in this karst area on the Natura 2000 sites. Condition No. 15 is not capable of ensuring that no drainage

or water would take place to a turlough. It is considered that Condition No. 15 could not be complied with.

- 6.28. The appellant's consultants question if the applicant has sufficient interest in the lands outlined in blue on the plans submitted to implement the removal of field boundaries. They also question whether or not an application to the Department of Agriculture, Food and the Marine would have to be made if over 500 metres of field boundaries are to be removed.
- 6.29. It is submitted that the report of Dr Michael Long submitted with the original appeal indicated that it was his expert opinion that no surface water from the scheme should percolate to soakaways at any location. He had suggested that all impermeable elements should be surfaced and sealed and a surface water drainage system which removed all surface water developed. The use of soakaways would only concentrate surface water at a particular area. It is submitted that there is a lack of a detailed design of the access tracks and the accompanying surface water drainage. The appellants note that the applicant had accepted that the filling mechanisms and catchments of the turloughs were not fully understood as tracer dye testing had not been undertaken. It is submitted that if the process was not fully understood it is impossible to know what effects the development would have on the process. Final designs would be required in order that the Planning Authority could assess the problems encountered and the engineering solutions proposed.
- 6.30. The appellants again refer to Turbines Nos. 4, 5 and 6 being located in proximity to groundwater in a 1:100-year flood situation. They submitted that permission should be refused in the absence of a flood risk assessment.
- 6.31. The appellants again quoted from the Wind Energy Planning Guidelines in relation to location, scale and design of wind farms in areas of hilly and flat farmland. The guidelines recommend that in such areas wind farms should generally be limited to small wind energy developments of medium height although tall structures may be

acceptable in some situations. It is submitted that the proposed development would visually dominate the area due to its proximity, scale and height. The tall turbines do not relate in scale to landscape elements in the area.

- 6.32. The appellants reiterate that the visual impact on the national monuments would be significant and the first party's argument related to terminology rather than impact. It is submitted that the setting of national monuments is protected as much as the monuments. It is also considered that the effect had to be classified as long-term. It would also be a negative impact.
- 6.33. The appellants submit that any adopted Wind Energy Strategy should specify that in specified areas the wind resource would be protected from unsympathetic neighbouring development. The appellants submit that the applicant's calculations of the distances from adjoining lands were based on distances from the tower rather than from the rotor blade. Without a rotor blade the tower does not become a turbine. The guidelines refer to the distance from the turbine. The appellants submit their calculated distances from the lands of Ms. Donnelly, Mr. Farrell, Mr. Burke, Mr. Fallon and Mr. Donoghue. In the case of Ms. Donnelly, Mr. Burke and Mr. Fallon Turbines Nos. 3, 2 and 6 respectively would be immediate to the boundary of the landholdings. In the case of Mr. Farrell Turbine No. 14 is approximately 80 metres from the landholding and in the case of Mr. Donoghue Turbine No. 15 is approximately 30 metres from the boundary with the lands and Turbine 16 is within 100 metres of his landholding. It is submitted that six of the turbines do not accord with the minimum distance of two rotor blades from adjoining properties of non-associated landowners as set out in the Wind Energy Guidelines. The guidelines require that account be taken of the development potential of an adjoining site for similar development. It is submitted that the applicant's argument in relation to planning permission trends in the vicinity of wind farm proposals was not supported by any study and accordingly no credence could be attached to the contention that the wind farm would not have an impact.

- 6.34. It is submitted that there is an absence of a detailed survey of the existing haul route in respect of its vertical and horizontal alignment. There is insufficient information to indicate that the road network is capable of carrying the traffic envisaged. In commenting on the WaterWise Environmental appendix to the applicant's submission the appellants point out that they are not concerned, as stated by WaterWise, that the turbines may be compromised by unstable ground. Their concern related to possible interference with significant active or dormant karst features which would interfere with established ground and surface water flows.
- 6.35. In commenting on the archaeological report of Dermot Nelis the consultants for the appellants state that the red line boundary as indicated on the plans was contrived and notional in nature. The red line also did not allow for potential micro-siting of the access route. Comments in relation to a statement that the archaeological sites would be outside the boundary of the site should be considered in the light of this. It is submitted that the consultants had not dealt with the issue of archaeological interconnectivity between the numerous national monuments identified. It is also submitted that the bat mitigation measures would involve the removal of field boundaries from the area and this had the potential to disturb the national monuments and archaeological heritage.
- 6.36. In an attachment from Burke Jenkins Consultants the lack of detail in relation to the foundations is again referred to. It is stated that the WaterWise Environmental submissions indicate competent rock at depths of up to 16 metres below ground level. The provision of foundations at this level has not been assessed and any mitigation measures proposed are not valid. The range of foundation types and the impacts they might have on the local geology and hydrogeology is not defined. Reference is also made to issues in relation to the backfilling of the boreholes. It is further submitted that the geophysical resistivity testing indicated that the resistivity of the ground in the vicinity of the proposed turbines is generally the same at a distance of 20 metres from the centre line. This indicates that same ground

conditions would be encountered at a 20 metre micro-siting distance. The section for Turbine No. 5 was submitted to indicate the point. It is submitted that no amount of further investigation would alter this fact.

6.37. It is submitted that micro-siting is not an acceptable solution to overcome an inherent lack of knowledge and understanding of this complex and varied site. It is further submitted that bases for foundations constructed at depths of up to 16 metres below ground level could block existing conduits and fractures in the karstified rock and may reactivate dormant conduits. It is submitted that the assumption of shallow foundations was invalid and the size of the works proposed was also irrelevant as in a karst landscape minor actions can have major negative consequences. It is stated that the appellants are not questioning that a solution can be achieved in the case of each turbine but they are requesting that the applicants present the construction solution in sufficient detail so that the competent authority could be satisfied that an appropriate solution could be achieved without compromising groundwater.

6.38. In relation to the construction of the access tracks it is submitted that the Geological Survey of Ireland recommends that in karst areas all surfaces should be sealed irrespective of whether the excavation is to bedrock or in layers above the bedrock. The question also remains as to where the drainage from the sealed roads would be discharged to. It is submitted that the implications of uncontrolled drainage and the impacts on groundwater had not been addressed by the applicant. Photographs were submitted to indicate the collapse of sediment from a shaft filled with sediment to a conduit partly filled by clayey glacial till which, it is submitted, related to an event which occurred in close proximity to the site in May 2011. Reference is also made to the excavation of a drain approximately 1 metre deep by 1.2 metres wide from Cuilleenirwan Turlough which it is alleged dramatically altered the movement and distribution of ground flooding in the area. It is suggested that flooding in the low-lying area around Dysart arose in this way from what appeared to be minor civil engineering works.

- 6.39. In a submission dated 21st December, 2011 responding to the applicant's response to the grounds of appeal, Mr. Eamonn Kelly refers to the submission by the applicant that a detailed analysis of planning permissions in the vicinity of wind farms indicated no evidence that the wind farm sterilised development potential of adjoining lands. Mr. Kelly states that the planning report referred to the setback distance of 500 metres having been complied with apart from Turbines Nos. 7 and 12. These two turbines were omitted by Condition No. 4. It is clear accordingly that Roscommon County Council intends to comply with the guidelines and recommendations and that consent would not be granted for lowering these standards. There is no evidence that the County Council would accept anything less. Mr. Kelly refers to his ownership of lands less than 500 metres from the turbines.
- 6.40. Mr. Kelly further submits that the applicant has not adequately identified flooding that occurred in 2009/2010. He attached an article about flooding in the area in 1995. This refers to difficulties in gaining access to the Fairhill area. Since 1995 the road had been raised on at least two occasions but it cannot be stated with certainty that the road will not flood again or that the development would not impact on the flood regime in the Fairhill area.
- 6.41. Mr. Kelly refers to the applicant's statement that it was intended to connect the Phase 1 development to the 110 kV station in the Phase 2 site. He submits that this connection between the phases is not a matter for EirGrid but that it is a matter for the applicant. It is not stated how the connection would be made. This connection is in intrinsic part of the Phase 1 application and should have been addressed in the original application. If an underground connection is proposed the flooding on the Fairhill Road and the surrounding area should be adequately addressed.
- 6.42. Ms Donnelly submitted that she was in favour of wind farms provided that they took account of the threat to wildlife, disturbance to the natural landscape, adequately consulted people in the area and endeavoured to ameliorate any negative impacts

on these people and their livelihoods. She further submitted that from living in the area she understood that Lough Croan supports large numbers of species including Curlew. She considered that there are questions over the surveys as the Curlews and Greenland White Fronted Geese existence in the area had not been verified. She considered that the proposed turbines would alter the character and landscape of the area in more than a moderate way. She questioned why the applicants went against best practice in relation to distance from adjoining landholdings. She referred to proposed Turbine No. 3 being within approximately 52 metres of her lands and she had not given written consent for a reduction in the distance from that recommended in the guidelines. She submitted that the shorter distances would give rise to problems for neighbouring landowners for any future wind energy developments and in the use of their lands by livestock. She also referred to a possible fire hazard during hurricanes due to mechanical failure and negative impacts on livestock from noise and vibrations.

- 6.43. In a response received on 22 December 2011 Mr. Thomas Burke refers to the site synopsis for Lough Croan Turlough SPA which states that it supports nationally important numbers of Greenland White Fronted Geese. He submitted that from his own observations Greenland White Fronted Geese can be seen in Lough Croan and in the adjoining area. He had observed a group of 60 to 80 rising from the lake on the 4th December, 2011. He submitted that this was a regular occurrence. He stated that Greenland White Fronted Geese can be easily recognised. He also disagreed with the statement that there is no suitable habitat for breeding Curlew on the site. He referred to the parcels of unimproved grassland in the northern border of the wind farm close to Turbine No. 1 and covering the site of Turbine No. 3. He also stated that he had observed Curlew within the boundaries of the site on the 8th and the 11th of December 2011. He also referred to landowners within 500 metres of Turbines Nos. 1 and 7 having confirmed recent and regular sightings of Curlew on their lands. Due to its distinctive call this bird is easy to recognise. Mr. Burke also referred to

references in the Phase 2 EIS to the presence of Whooper Swans in the area with up to 203 individuals recorded at Lough Feacle. It is also noted in the documentation on the Phase 2 application that the layout of turbines was altered to provide a corridor without turbines through a valley where swans were observed to fly.

6.44. Mr. Burke referred to the proposed connection between Phases 1 and 2 and submitted that this would not be a matter for EirGrid. He stated that if the connection was over ground it would involve wires between 8 and 25 metres above ground with potential impacts of Whooper Swans utilising the flight path referred to (If the connection was underground it would be along roads which had been subject to severe flooding in the past). Mr. Burke submitted that the visual impact of the wind farm would be intolerable on the character and landscape in an unimaginable way. He considered that the statement that the impact would be moderate was an understatement. Mr. Burke considered that there was a contradiction between the argument that the proposed development would not interfere with future developments of the area and Condition No. 4 requiring the omission of House Nos. 7 and 12. He considered that any potential sites for residential development would be effectively sterilised. In relation to the applicant's argument that the 200 metre setback was merely guidance Mr. Burke submitted that the applicants used the guidelines as best practice when it suited but ignored them when it did not. He considered that the fact that there are no firm proposals for wind energy developments at the moment to be irrelevant. A copy of an aerial photograph and some photographs were submitted with Mr. Burke's response. Areas of undisturbed scrub in the vicinity are indicated on the aerial photograph. The location of recorded monuments, areas of stone wall to be removed and the location and direction of the various photographs submitted are indicated on the attached photograph. Mr Burke's submission also contained a map indicating flight paths as identified in the Phase 2 development across the Phase 2 development which would be heading towards the Phase 1 development.

6.45. In a responding submission from the Department of Arts, Heritage and the Gaeltacht dated 22 December 2011 reference is made to the site being situated within a 10 kilometre radius of 10 sites of conservation importance and at a location where the possibility of impacts on several of the species of conservation interest in the Lough Croan SPA, Four Roads Turlough SPA and the River Suck SPA could not be excluded. Species included in the special conservation interests of one or more of the sites referred to include Whooper Swans, Greenland White Fronted Geese, Shoveler, Wigeon, Lapwing and Golden Plover. It is submitted that the Department remained of the view that considering all the information provided it could not be excluded that the development would be likely to impact on populations of Whooper Swans, Greenland White Fronted Geese and Golden Plover which are listed in Annex I of the Birds Directive or would be likely to disturb the feeding/roosting/commuting areas of Whooper Swans, Greenland White Fronted Geese and Golden Plover. It is submitted that impacts could be caused by increased disturbance, interference with natural flight lines/flyways and bird mortality due to collision with the turbine blades. It is submitted that it had not be demonstrated with certainty that the development would not have a negative impact on any of the Annex I Bird Directive species mentioned. It is stated that where impacts were unclear or uncertain the precautionary principle must apply and the project should not proceed.

6.46. The Department also continues to have concerns and reservations about the effectiveness of the proposed Merlin Radar System. It is noted that the system is not currently deployed in Ireland. The department did not have sufficient information to make a positive assessment of the system proposed. The department notes that the proposed Wind Energy Strategy for County Roscommon did not have any legal or statutory basis. The department had concerns in relation to the proposed Wind Energy Strategy on the same basis as their concerns in relation to the proposed development. They consider that this area of South Roscommon is unsuitable for

wind energy developments. They consider the proposed development to be in the wrong location and the likelihood of negative impacts could not be excluded.

6.47. The Department note that the applicant had failed to record the presence or activity of Greenland White Fronted Geese in the area. The Department believed that this is not the situation. They considered that because they had not been observed in the survey should not be taken as absence of the species. They confirmed the presence of the species in South Roscommon and confirmed that they used a number of nature conservation wetland sites within 10 kilometres of the proposed development. It is submitted that giving the large cluster of wetland sites of nature conservation in the South Roscommon area together with the number of migratory water birds species that use the area as part of their wintering range and the connections or flyways between the sites the department is of the view that the nature, scale and location of the development is not compatible with the protection of the natural heritage of the area. The Department also referred to the likely in- combination effects with the Phase 2 development for 19 turbines.

6.48. In a submission dated 24th January 2012, Mr. Eamonn Kelly referred to the submission from the Department of Arts, Heritage and the Gaeltacht. He stated that he owned farmland adjacent to the River Suck callows. He also owned lands adjacent to the proposed development. He stated that he had a clear view of the Thomas Street Turlough from his lands. He attached photographic evidence of Whooper Swans in Thomas Street Turlough in January, 2012. He stated that the presence of such a large number of swans in close proximity to the proposed development had gone unrecorded by the applicant. The ephemeral nature of the water bodies in the area had been noted by the applicant in the response to the further information request. Mr. Kelly also supported the Department's confirmation that Greenland White Fronted Geese are present in the area and use a number of the wetland sites within 10 kilometres of the proposed development and in particular Lough Croan. He referred to the submissions made to Roscommon County Council

confirming the siting of geese in the area. Mr. Kelly submitted that Roscommon Draft Energy Strategy had been unanimously withdrawn by the elected members until such time as it was subject to an SEA.

- 6.49. A submission from Mr. Thomas Burke dated 25th January, 2012 supports the submission from the Department of Arts, Heritage and the Gaeltacht. As a local landowner Mr. Burke confirmed the presence of Greenland White Fronted Geese, Whooper Swans, Lapwing and Curlew in the area. He submitted a photograph indicating 80 Whooper Swans approximately at Thomas Street Turlough. The photographs were taken on 15th January, 2012. A significant number of Lapwing was also observed on that occasion. Mr. Burke also questioned the effectiveness of the Merlin Radar System proposed. He also submitted that the Draft Energy Strategy had been rejected by the Councillors.
- 6.50. A submission from Mr. James Fallon was received on 27th January, 2012. Mr. Fallon stated that he farmed land and lived in the area. He submitted that in spite of several meetings and the time period involved the applicant had not satisfied the Department of Arts, Heritage and the Gaeltacht. He supported the concerns of the Department in relation to the impact on protected wildlife and on areas of conservation importance. Mr. Fallon referred to flooding in the townland of Gortaphuill in the vicinity of proposed Turbine No. 6. The groundwater movements in the local turlough could impact on the designated SPAs or SACs. Mr. Fallon also submitted that swans can be seen at Thomas Street Turlough and at Lough Croan. He attached photographs indicating swans at Lough Croan. He confirmed seeing the swans there on 22nd January, 2012. He stated that he had often seen geese fly over his house which is located south of Lough Croan or he had heard them flying early in the morning over the house. He had seen geese in the area approximately four weeks prior to his submission. Mr. Fallon concurred with the Department's view that the proposed development would be in the wrong location and the likelihood of negative impacts could not be excluded.

6.51. A submission from Mr. Donoghue received on 27th January, 2012 stated that he had visited Dysart Turlough on 22nd January, 2012 and he had seen swans on the turlough. He had returned on Monday 22nd January, 2012 and had taken photographs indicating two flocks of Whooper Swans on the turlough. He referred to flocks of 15 and 50 Whooper Swans. He also stated that he had noted Wigeon during his visit on the Sunday 22nd January, 2012. Mr. Donoghue stated that he had taken over the running of his farm in 1994 and he knew the area well. He submitted that a question arose in relation to the impact of the construction phase on the habitat of the birds. The Dysart Turlough is close to the R357 which is the access road for the construction phase. He referred to the potential for pollution of the turlough. Mr. Donoghue concurred with the opinion of the Department of Arts, Heritage and the Gaeltacht.

6.52. In a response to submissions received from the Department of Arts, Heritage and the Gaeltacht the applicant, on 30 January, submits that having regard to the field survey work carried out and the evidence gathered there was reasonable scientific certainty that the proposed development will not have an adverse impact on the conservation status of habitats and species of conservation interest. The applicant refers to the extensive amount of survey work which had been carried out over the three half years from July 2008 to January 2012. It is stated that approximately 400 hours of field work had been carried out and in excess of €70,000 had been spent by the applicant in assessing the ornithological resource and bird movement patterns in the vicinity.

6.53. The applicant submits that the site is not within any designated ecological site including European sites, NHAs or proposed NHAs. The site is also not located in a buffer zone of Lough Croan or Four Roads Turlough as indicated in the Roscommon Wind Energy Strategy Assessment of Potential Bird, Bat and Ecological Impacts Report for Roscommon County Council. It is submitted that when the original EIS and NIS were prepared neither Lough Croan nor Four Roads Turlough were

designated as an SPA. Detailed additional information was subsequently submitted with the response to the further information request to Roscommon County Council. The additional information confirmed the original conclusions that notwithstanding the additional designations there is reasonable scientific certainty that the development would not have an adverse impact on Natura 2000 sites. In order to reflect the new designations however an additional insurance measure i.e. the Merlin Avian Radar Monitoring System, is proposed.

- 6.54. The submission from the applicant stated that they are very aware of the requirements under the Habitats Directive. Reference is also made to the Planning and Development (Amendment) Act, 2010 and the European Communities (Birds and Natural Habitat) Regulations, 2011 which set out various requirements with respect to compliance with the Habitats Directive. It is submitted that in a natural system it is important to note that there can never be complete and unequivocal stated or demonstrated certainty that any proposed development will not have a negative impact on individuals of a given species. It is submitted, however, that there is reasonable scientific certainty that the proposed development would not have a negative impact on the conservation status of the protected species as a whole.
- 6.55. The submission from the applicant contained additional information in relation to the Merlin Avian Radar System and its operations. It was submitted that the scientific evidence indicates that bird collision risk is extremely low in any event. The Merlin System is proposed to address this minor residual collision risk in accordance with the precautionary principle. The applicant refers to Condition No. 9 of the notification to grant planning permission which requires that a one-year initial monitoring period should be undertaken in consultation with the department and subject to compliance assessment by Roscommon County Council. It is anticipated that prior to the commencement of development on the site all aspects of the deployment of the system would be subject to the explicit agreement of the Department and to compliance sign-off by Roscommon County Council. The suppliers of the system

would train the applicant's consultants and Departmental officials on the system's operation and support. The system will operate automatically and is designed to automatically issue curtailment instructions to the wind farm SCADA system so as to idle the turbines when high risk conditions are detected. When the risk is passed the turbines are restarted. The submission refers to a number of examples of the radar system in operation.

- 6.56. In response to the Department's request for the submission of peer reviewed scientific journals on the effectiveness of the Merlin system the applicant submits that this is innovative new technology which is in use only since 2003. As a result, there is limited academic research in the area specifically in relation to the Merlin system. The low collision risk between birds and wind farms limits the potential for academic research. It is submitted that the system is a proven and highly effective method to manage the residual collision risk arising from the proposed wind farm. The system would provide for the maximum possible protection for species of conservation interest.
- 6.57. The applicant submitted that an SEA screening report had been prepared by Roscommon County Council in relation to the Roscommon Wind Energy Strategy. It also submitted that the reference to the Galway case was merely to highlight a recent instance where suitable mitigation measures including detailed post-consent monitoring in conjunction with the Department was considered by the Board to be appropriate.
- 6.58. The applicant submits that there is no implication being made in relation to their submission that Greenland White Fronted Geese were not found in the area during the survey period. It is also submitted that in the most recent ornithological surveys carried out in December 2011 to January, 2012 no Greenland White Fronted Geese were observed. Some historical information in relation to the presence of Greenland White Fronted Geese in the area and in Ireland generally is contained in the

submission from the applicant. It is submitted that the Irish Greenland White Fronted Goose census for 2007/2008 shows a marked decline in the number of birds wintering in the country with a total recorded number of 10,095. The All Ireland wintering population in the 1990s had been 13,790. The River Suck population for the 2007/2008 census is indicated to be 150 (based on an informed estimate). This is below the international threshold which is 390 (the national threshold is 140).

6.59. The applicant's submission refers to likely contributors to the decline in the population including competitive interactions with other geese at breeding grounds in Greenland and also climatic factors. It is submitted that whilst it has been recorded that the geese do occasionally use habitats in the vicinity, giving the site fidelity of the species, the numbers of birds occurring within flocks in the vicinity of the site and the lack of records of the species passing over the site it is considered that there is no threat posed by the proposed development. In response to the argument that the in- combination impacts with the 19 turbines proposed in planning application Ref. 11/273 had not been considered the applicant submits that these are separate applications. Consideration of this matter was outside the scope of the current appeal. Application 11/273, which was then being considered by Roscommon County Council, had been the subject of a cumulative EIS and NIS which assessed the likely in- combination impacts in accordance with the requirements of the legislation.

6.60. A submission from Mr. Eamonn Kelly dated 12th February, 2012 raised objections to the applicant continuing to meet with the Department during the course of the appeal. He submitted that the NIS submitted was deficient as the applicant had failed to identify a feeding and roosting area for Whooper Swans at Thomas Street Turlough. Mr. Kelly submitted that risk assessment and mitigation proposals must be clarified prior to the granting of planning permission rather than depending on gathering information from the Merlin Radar System after the consent. Mr. Kelly submitted that the locations where Merlin Systems are in operation, which were

identified, are not comparable to the site. Information submitted did not indicate how the system would operate in the environment in question. The system also does not mitigate for the displacement of birds due to the wind farm. It was submitted that anything which threatened water bodies in the area and the ability of the species to safely access and utilise them would lead to fragmentation and loss of ecological coherence. Mr. Kelly submitted that the geese which frequented the River Suck callows do not remain there all winter but they move around the water bodies in the vicinity. If the site fidelity argument was accepted the definition of site (as given by the applicant) was not. As figures for the December 2011 to January 2012 survey period were not included they could not be commented on. He submitted that the geese use Lough Croan regularly to commute between the various water bodies in the area.

- 6.61. In response to the applicant's argument that the Phase 1 and Phase 2 developments were separate applications, Mr. Kelly stated that the applications are separate only because this was the method by which they were submitted to Roscommon County Council. He submitted that the current application was Phase 1 of the overall development and as such the cumulative effects of the overall development should be assessed.
- 6.62. A submission from the consultants on behalf of the Wind Turbine Group South Roscommon was received on 16th February, 2012. This was in response to the applicant's response to the submission from the Department of Arts, Heritage and the Gaeltacht. It is argued that the applicant is not entitled to submit any further information to the Board unless it is requested under Section 132 of the Planning and Development Act, as amended. Reference is made to meetings with the Department of Arts, Heritage and the Gaeltacht and it is submitted that all documents provided to the Department or to be provided in the future are material evidence for the purposes of determining the appeal. The consultants also refer to other reports being referred to in the response to comments from the Department of

Arts, Heritage and the Gaeltacht. It is submitted that the Board should be privy to all pertinent information in order to make its determination. When material is being exchanged between parties, if it is relevant to the appeal, such material should be provided to An Bord Pleanála in the first instance.

6.63. The consultants note that the applicant is continuing to carry out further ornithological studies on the appeal site. It is submitted that this highlights the inadequacy of both the EIS and the NIS submitted with the application and shows an acceptance of this inadequacy. It is submitted that the introduction of new survey information at this late stage in the process is highly questionable. It is submitted that the submissions made concerning the Greenland White Fronted Geese and Whooper Swans in the country as a whole are not directly relevant as the question of impact relates specifically to the impact upon the wintering populations at the sites identified by the Department as being of conservation importance in South Roscommon. The Department's comment that where impacts of proposed development are unclear or uncertain, the precautionary principle must apply and the project should not proceed, are noted. It is submitted that the information presented by the applicant in relation to the efficacy of the Merlin System is inconclusive. Examples given refer to coastal or off-shore wind farms which relate to sea bird migrations rather than wintering flocks. No information has been provided to conclude that the system is either proven or even highly effective as claimed by the applicant. The monitoring required by Condition No. 9 should have been carried out prior to the lodgement of the application. Conditions, requiring the agreement of the local authority, circumvent the right of third parties to comment on matters which are vital to the determination of the application. It is submitted that the location is unsuitable in principle for the provision of a commercial wind energy development of the scale proposed.

6.64. A review of the data lodged in relation to the Merlin System carried out by Burke Jenkins concludes that only three of the 21 wind farm sites referred to utilise the

SCADA system with the rest operating a system which provides information of bird activity around a wind farm site. Difficulties due to ground clutter, wind turbine echoes and blind spots behind the wind turbine structures are identified in one of the cases.

6.65. The consultants on behalf of the Wind Turbine Group South Roscommon point out that details of ornithological surveys carried out in December, 2011 and January, 2012 have not been provided in the response to the comments from the Department of Arts, Heritage and the Gaeltacht. The appellants support a statement by the Department with regard to the importance of this area of South Roscommon as a wintering ground for all of the conservation species including the Greenland White Fronted Geese.

6.66. The appellants submit that the in- combination effects with the development referred to on Planning Authority File Ref. 11/293 or the Phase 2 development have not been considered in the current appeal nor have they been thoroughly considered in application Ref. 11/293. It is submitted that another application should not be cited as a precedent by the applicant as each planning application must be assessed on its merits. The other development referred to would be located in an area described as mountain moorland. The application also included a land-take area of over 850 hectares and did not indicate a red line running immediately around the proposed development. This site was also heavily forested and the subsoil was peatland. In addition, the Galway Wind Energy Strategy was adopted at the time of the decision and the person assigned to assess the EIS was satisfied with its findings. The appellants support the Department's stated position that the planning permission should not be granted for the proposed development at this location. It is submitted that the applicant has failed to address the Department's and the appellants' real concerns that the area is not suitable for the type of development proposed.

6.67. The appellant's submission was accompanied by a report by Burke Jenkins including a review of the data on the Merlin System submitted on behalf of the applicants in their response to An Bord Pleanála dated 30th January, 2012. This review concludes that whilst the system has been used as a data gathering tool at various locations worldwide it has not been deployed as a mitigation measure in a comparable environment to that pertaining at the site of the proposed development. Site specific data that prove that the system would operate as an effective mitigation measure is not presented. In the use proposed by the applicant the system cannot be classified as proven or effective. It is also submitted that ground clutter and unwanted echoes from the wind turbines themselves may present technical problems in detecting birds. In the absence of evidence that the system will work on the site it should not be considered when determining the appeal.

6.68. The Burke Jenkins report refers to one assessment of the Merlin system by the Norwegian Institute for Nature Research. Quotations from this study given in the Burke Jenkins report indicate that the actual performance of the system in a particular site depends heavily on the specific environment at that particular location. It is also noted that in addition to ground clutter inside a wind park the wind turbines themselves are sources of radar interference of a quite particular kind. The particular Avian Radar System employed at the particular wind plant may provide an insight into local patterns of bird activity. It is submitted that of the 21 sites listed in the documentation submitted by the applicant only 3 include the SCADA system (this can be configured to evaluate risk and based on a pre-set target operate a shut-down system). The three in question were in use on major migration corridors as opposed to wetland sites with resident winter water fowl. The sites accordingly are not directly comparable to the site which is the subject of the current application. The submission included a copy of Natura 2000 (The European Commission Nature on Biodiversity Newsletter). An article in this newsletter referred to a key element in

future green infrastructure being the development of buffer zones around existing core nature sites where compatible land uses are maintained or reintroduced.

- 6.69. Following a request for additional information from An Bord Pleanála the applicants submitted a report detailing the results of a winter bird survey carried out between January and March 2013. This report was accompanied by an additional report outlining the suitability of the proposed development site for the deployment of the proposed Merlin System. This report was prepared by Mr. Edward Zakrajsek (manager DeTect Europe).
- 6.70. A response to the additional information was received from the Department of Arts, Heritage and the Gaeltacht on 10th July, 2013. In the response the Department stated that a representative from the National Parks and Wildlife Service also met with the developers on 23rd May, 2013. It is stated that this meeting did not allay their concerns in relation to the likely impacts of the proposed wind farm. The submission refers to the Merlin SCADA System as being new technology in relation to the particular situation in South Roscommon. The department had no sight of any data which would give any degree of certainty that the system is a proportionate or robust mitigation measure for the situation. The submission points out that the officials had been informed that in the event of their being a danger of bird strike the technology would idle rather than shut down the turbines. The Department's concerns were not allayed. The submission states that the Board could request the developer to deploy the system for an appropriate period on the site of the proposed Phase 2 development and this could be operated with traditional monitoring/survey work.
- 6.71. A submission on the additional information was received from consultants acting on behalf of the Wind Turbine Group South Roscommon on 10th July, 2013. It is submitted that the field survey work focussed solely on the site which was the subject of the current application and failed to assess the cumulative impact which would arise if Phase 2 was granted planning permission. On the information

submitted in relation to the Merlin System it is argued that whilst reference is made to independent research and findings on the system none of this independent research had been included to enable assessment of the efficacy of the system.

- 6.72. The submission from the appellant's consultants dated 10th July, 2013 stated that apart from the issues referred to in the Board's request for further information on 7th December, 2012 there are numerous other issues of consequence raised in previous submissions by the appellants which would warrant a decision to refuse permission.

Submissions made following High Court decision:

- 6.73. Following the quashing of the Board's previous decisions by the High Court parties were afforded an opportunity of making additional submissions.
- 6.74. A submission from the applicant was received by the Board on 18th May, 2015. The documentation received included supplementary EIS and NIS information on the grid infrastructure, a report on hydrogeological/geotechnical aspects of the development including the results of some additional rotary core boreholes drilled at the site of the substation and at the locations of turbine Nos. 4 and 5. The documentation also included responses to affidavits from Mr. William Cormacan, Mr. Tony Nagle and Ms. Aebhin Cauley which affidavits had been submitted as part of the High Court proceedings. Also included with the documentation was an overview of the environmental information submitted on avifauna and a report on a wintering bird survey carried out from October, 2014 to March, 2015. A report from QuadConsult Limited responding to issues raised by Dr. Michael Long, Professor Paul Johnson, Ms. Rose Burke and Ms. Aebhin Cauley and a response to affidavits and submissions by Professor Paul Johnston, Dr Michael Long and Ms. Rose Burke by Wate Wise Environmental were also submitted. The submissions are referred to in more detail where relevant in the reports of Mr. Keohane and Mr. Arnold and in my environmental impact assessment and general assessment of the application.

6.75. A submission on behalf of Mr. Ted Kelly was received on 18th May, 2015. This welcomed the decision of the High Court quashing the previous Board decisions. A report by Kavanagh Burke referring to and quoting from the decision of the High Court was attached. The report lists aspects of the development which it is submitted can affect the adjacent European sites. These include the connection from Phase 1 to the substation in Phase 2, the connection to the national grid, turbine foundations, internal roads and tracks, on-site cabling and intrusive geotechnical site investigations which are required to design the elements of the development. All aspects of the development must be assessed. It is also submitted that the appropriate assessment must not have any lacunae or gaps. This must accordingly include an assessment of changes to the turlough habitat, an assessment of the existing hydrological/hydrogeological regime and of the proposed method of disposal of surface water, an assessment of conservation and non-conservation wetlands in the vicinity of both proposed developments, an assessment of invasive technical site investigations carried out and to be carried out and an assessment of the man-made connection between Cuilleenirwan Turlough and the Ballyglass River and its negative impacts on the local hydrogeology and the probability of similar negative impacts as a result of the developments. The report lists what are described as a non-exhaustive list of the best scientific knowledge in the field as it pertains to the proposed development. This includes various articles in relation to karst hydrogeology and the Killeglan water supply scheme. It is submitted that in carrying out the appropriate assessments the competent authorities had not identified all aspects of the development likely to have an impact on the special areas of conservation, did not avail of the best scientific knowledge in the field and consequently could not have satisfied themselves that there was no reasonable scientific doubt as to the absence of adverse effects on the integrity of the European sites. It is submitted that the development represented a significant potential risk to European conservation sites as well as to groundwater.

6.76. A submission from the Department of Arts, Heritage and the Gaeltacht was received on 18th May, 2015. In this submission the Department states that its concerns regarding the proposed developments and the inadequacy of the information available to demonstrate that it will not adversely affect European sites remain. The Department draws attention to Ireland's obligations in relation to European sites as set out in the Habitats and Birds Directives. It is submitted that appropriate assessments are to be undertaken in view of the conservation objectives for the sites which may be significantly affected. It is submitted that "wetland and water birds" is included in the special conservation interest for the special protection areas in the vicinity. The conservation objective, where relevant, is generally to maintain or restore the favourable conservation condition of the wetland habitat of the various special protection areas as a resource for the regularly occurring migratory and water birds that utilise them. It is noted that for special areas of conservation the conservation objectives are generally to maintain or restore the favourable conservation condition of the habitat and species for which the site has been designated. For turloughs this requires the maintenance or restoration of groundwater and hydrological dynamics as this is an important ecological characteristic of the habitat. Turloughs are also important winter feeding grounds for water fowl and wading birds.

6.77. The Department's submission contains further guidance in carrying out an appropriate assessment. The report lists key bird species of concern i.e. Greenland White Fronted Geese, Whooper Swans, Golden Plover, Shoveler, Wigeon and Lapwing which are special conservation interests for various sites in the vicinity. The assessment must also consider the implications for the conservation objectives of all qualifying interests/species. In commenting on the adequacy of the information on which to conclude an appropriate assessment the department refers to the inspector's report on File Ref. 10/541 which references a lack of information. The submission refers to the concerns previously expressed by the Department in

relation to the development. These concerns still remain and the Department considers that uncertainty still remains as to the potential effects of the proposed development on the nearby European sites. The Department's view is that the survey work, including the additional information submitted to An Bord Pleanála, is not of sufficient duration or scope to reach reasonable scientific certainty that the proposed development will not adversely affect the conservation objectives of the European Sites in question.

6.78. The Department submits that it is necessary to understand the relationship between the proposed development sites and the European sites, how species move between the sites and across the sites and how the proposed development would affect that movement. It is submitted that the proposed development is located less than 1 kilometre from Lough Croan SPA and 3 kilometres from Four Roads Turlough SPA. It is acknowledged that the applicant has collected a body of data but it is concerned that up until 2013 the Greenland White Fronted Goose was not observed by the applicant on any occasion even though two of the vantage points were in close proximity to two SPAs which are known to support and are designated for the species. It is submitted that the winter data for 2008/2009 is of limited value due to the severe weather which would affect the use of the sites by birds. It is stated that the survey of January to March 2013 was much more informative regarding understanding the movement of the target/important bird species but it is noted that it covered only half of the wintering season. It is stated that further survey work would be required to obtain more robust information. It is stated that a two-year survey period may provide sufficient information to adequately assess the implications for the sites in question but this would need to be more closely considered in view of the level of uncertainty that still remains.

6.79. In relation to the proposed Merlin SCADA Radar System it is submitted by the Department that the technology has not been demonstrated to be effective in wintering grounds for the species in question and so it has not been demonstrated to

any degree of certainty that the deployment of this system could be considered a proportionate and guaranteed mitigation measure. The Department also considers that the investigation of the proposed development in conjunction with other plans and projects is insufficient. It is stated that consideration is given only to the interaction between the two wind farms and no other plans or projects were assessed. The cumulative effects with other pressures including wind farms and agricultural activities in the area should be considered.

6.80. Following public notices of the additional information submitted by the applicant on the 18th May, 2015 a response was received from Mr. Eamonn Kelly on 19th October, 2015. The response in this case was prepared by Kavanagh Burke. It is noted that the boreholes drilled at the substation and turbine 4 locations were not drilled at the intended locations and no reason is given for this. The borehole at Turbine No. 5 was located 8 metres away from the turbine location due to the presence of a stone wall. It is submitted that the report is primarily an investigation of the factual site investigation report and no scientific hydrogeological information or assessment is presented. It is noted that although the report concentrates on the area around T4, T5 and the substation the areas of interest i.e. culverts and cavities have been missed and further investigation is recommended.

6.81. It is noted in the submission on behalf of Mr Kelly that the water level measured on 30th April, 2015 was 15.43 metres below ground level. An aerial photograph previously submitted (18 May 2015) indicated water above ground at this location on 28th February, 2014. This indicates a change in water level of over 15 metres. There is no scientific assessment of this alteration to the water table. The report offers a design solution for Turbines Nos. 4 and 5 but not for the other turbine locations. Piled foundations, which had been previously ruled out, are again introduced as an additional mitigating measure but no details are given as to how they would result in mitigation. It is submitted that no scientific information has been presented to support

the conclusion that the proposed development would not have any impacts on European sites in terms of hydrology or hydrogeology.

6.82. In responding to the submissions in relation to the connection to the national grid the Kavanagh Burke report states that as previously pointed out the applicant will not determine the method of connection but EirGrid will do this. Reference is made to publication Grid 25 – A Strategy for the Development of Ireland’s Electricity Grid. It is stated in that document that overhead lines are the standard form of transmission throughout the world and criteria are set out as to where undergrounding of cables would be considered. It is submitted that the cumulative impacts of the connection to the grid have not been addressed. In relation to the connection of the Phase 1 and Phase 2 developments it is submitted that the route proposed would transverse an area of extensive flooding as shown on submitted photographs. It is argued that no scientific assessment of this excavation and its potential impact on the hydrogeology of the area is submitted. It is submitted that the applicant has not addressed the issue of drainage of surface water apart from a reference to SUDS principles. This issue is accepted by all karst experts to be the most difficult engineering problem on an active karst site.

6.83. In a submission dated 19th October, 2015 the applicant responded to the submissions of the Department of Arts, Heritage and the Gaeltacht and from Mr. Kelly. It is argued in the submission that the judgement of Ms. Justice Finlay Geoghegan cannot be read to infer any findings on the substantive appropriate assessment conclusions reached by the Board in its previous decision. It is submitted that the scientific evidence is fully adequate on which to base a determination that the development will not adversely affect the integrity of any relevant European Site having regard to its conservation objectives. The information has now been supplemented by that of the 18th May, 2015. It is submitted that the scheme has been carefully designed so as to ensure that it does not impact upon natural flight lines and flyways having regard to the precautionary principle. It is

argued that the very extensive analysis undertaken has given the most complete scientific understanding of the movement of key bird species in the South Roscommon area to date. It is submitted that no scientific or other empirical evidence being submitted by any third party to contest the evidence put forward by the applicant.

6.84. The applicant submits that the additional information submitted on 6th June, 2013 and the supplementary information submitted on 18th May, 2015 fully removes the concerns raised by the inspector when previously dealing with the application. It is submitted that the applicant has now completed seven years of wintering bird surveys using numerous highly qualified professionals. The unequivocal conclusions of these studies are that bird species of conservation concern cross the proposed development site very rarely and typically as a result of increased deliberate human disturbance. The development accordingly cannot act as a barrier to movement or disrupt ecological links between feeding, wintering and breeding sites. The applicants refute any doubts raised about the robustness and veracity of the bird surveys carried out. Greenland White Fronted Geese have never been recorded on or near the site and this is confirmed in the most recent survey work. The surveys indicated that the migrating flock of Greenland White Fronted Geese remain almost exclusively on the River Suck callows. With the two years of additional survey work now undertaken it is submitted that there is a complete and sufficiently robust scientific picture of regional bird movements which fully validates all previous surveys and removes any scientific uncertainty.

6.85. The applicants reject the suggestion by the Department of Arts, Heritage and the Gaeltacht that the Merlin Avian Radar System is the main mitigation measure proposed. It is proposed as a residual “belt and braces” mitigation measure. The collision risk assessment carried out in the wintering bird survey for January to March 2013 illustrated the tiny risk of collision. The proposal incorporates a suite of mitigation measures including mitigation by location and mitigation by design.

- 6.86. In commenting on the submission on behalf of Mr. Eamonn Kelly the applicants state that all of the issues raised have been previously extensively aired throughout the course of the appeal and judicial review. The Board had been satisfied that subject to normal good construction practice turbine foundations can be developed at this location without significant impacts on the hydrology or hydrogeology of the area. A further comprehensive submission was submitted on 18th May, 2015 including a technical submission from Jennings and O'Donovan, Consulting Engineers. This fully addressed the issues raised in the appellant's submission and fully removes any scientific doubt of the absence of impacts on European Sites. It is submitted that there is no reason for the Board not to reach the same conclusion as it previously did and grant planning permission for the proposed development. Reference is made in the submission to the state meeting its renewable energy and climate targets.
- 6.87. By letter dated 19th October, 2015 the Department of Arts, Heritage and the Gaeltacht made a further submission on the application. In this submission the Department submits that the duty on the Board to comply with the decision of the High Court is considerably greater than merely recording reasons for its determination as implied by the applicant. It is submitted that an assessment or analysis must be conducted in reaching precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed development on the integrity of Natura sites.
- 6.88. The Department refers to the proposed wind farm being located in an area with a relatively high occurrence of wetland sites. The site lies within 5 kilometres of three SPAs. The reasons for the designations are referred to. It is submitted that it is known that geese, swans and waders do not stay within the confines of each of the SPAs during the winter. The Greenland White Fronted Geese move between three of the four SPAs within 15 kilometres of the site. Whooper Swans and Golden Plover do not confine their feeding exclusively to the SPA network. There are gaps in the understanding of how these birds interchange with other SPAs and non-designated

areas. Knowledge of inter-seasonal movement of species which are listed for SPAs is also poor and it is known that the birds move around the area. Knowledge of migration patterns is also incomplete. It is submitted that the wetland sites in the area are subject to varying levels of disturbance and likely year to year and month to month habitat changes. The Department lists the potential impacts of the proposed development on water birds. It is stated that the primary cause for concern from a bird conservation perspective is the increased risk of bird mortality events that may occur through collisions if the proposed wind farm proceeds.

6.89. In commenting on the survey methodology and results of the 2014 – 2015 survey the Department states that reviewing the National Parks and Wildlife Greenland White Fronted Goose survey data revealed that on particular occasions some site counts were substantially higher compared to the Ecofact work e.g. The Four Roads SPA Ecofact maximum count of 21 compares to the National Parks and Wildlife Service maximum count of 131. It is also noted that the Shoveler peak count of 235 individuals equates to almost 10% of the All Ireland population estimate for Shoveler. The report does not describe movements of this duck species or other duck species. It is noted that some ducks may migrate or perform local flights during the night. Reference is made in this regard to responses to various affidavits (from the High Court case) where it is stated that the ducks stay all winter long at particular water bodies. This does not acknowledge that some ducks migrate and undertake other flights at night. It is submitted also that it cannot be stated with any degree of certainty that the Whooper Swan flocks listed for both the River Suck and Lough Ree SPAs are independent of the birds recorded flying over the proposed wind farm site. It is also noted that in the 2014 – 2015 survey swans were observed grazing in a field in close proximity to the proposed Phase 1 wind farm site. It is pointed out that when comparing the results of the 2014 – 2015 work with the 2013 findings differences are indicated. It is submitted by the Department that this supports the argument that in such a dynamic system water bird site use cannot be characterised

sufficiently by a series of limited and varying survey initiatives to allow the applicant to predict with confidence how the system would behave over the next 25-year period. (The findings from the Ecofact 2014 – 2015 study quoted by the Department indicate nine Whooper Swans from Dysart Turlough returning to Lough Croan across the proposed Phase 1 wind farm site).

6.90. It is stated in the Department's submission that it is of the view that the sophistication and effectiveness of the proposed Merlin Radar System in reducing the risk of collision to a level which would ensure that there would be no adverse effects on the integrity of the nearby European site has not being demonstrated in the submissions.

6.91. The Department, in its response, refers to the pressures on the Lough Croan site from agricultural activities such as slurry spreading etc. referred to in the Ecofact Wintering Bird Survey January to March 2013. It is submitted that the uncertainty surrounding the effects of the proposed development should be considered in conjunction with the cumulative effects arising from other pressures including wind turbines and agricultural activities. The Department is of the view that the information submitted does not give sufficient consideration to the uncertainty and lacunae which still remain as to the potential effects of the proposed development over the lifetime of the development on the conservation objectives and integrity of the nearby European Sites including in-combination effects with other pressures and activities. It is accordingly not feasible to conclude an appropriate assessment that is favourable to the proposed developments that is in keeping with the jurisprudence.

6.92. A further submission was received from the Department in a letter dated 8th December, 2015. In this submission the Department states that it does not agree that a full understanding of the movements or flight patterns of relevant bird species has been reached. Reference is made to the issues raised in the submission of the 19th October, 2015. The department submitted detailed information in relation to count data for Greenland White Fronted Geese at various sites in relatively close

proximity of the proposed wind farm. This data had informed the Department's previous observations and submissions and the data is available to the public on request. With reference to the applicant's comment on the Department's previous statement that their system is the main mitigation measure proposed, the Department refers to its October submission where it had stated that the primary cause for concern from a bird conservation perspective is the increased risk of bird mortality events that may occur through collisions. The Department is of the view that this is the case and apart from possible mitigation through re-siting or reducing the number of turbines the proposed Merlin System would be very relevant to this context.

6.93. A submission from Mr. Eamon Kelly was received on 7th December, 2015. This submission consists of a report from Kavanagh Burke. It is stated in this submission that the material which had been submitted prior to the previous Board decision did not satisfy the An Bord Pleanála inspector who had dealt with the case. There are extensive quotations from the inspector's report contained in the Kavanagh Burke submission to indicate that the inspector was of the opinion that it had not been established beyond reasonable scientific doubt that adverse effects on the integrity of Lough Croan would not occur. The submission of the 19th October, 2015 had contained a detailed analysis of the contents of the Jennings O'Donovan submission of 18th May, 2015. This analysis showed that no additional hydrogeological information had been submitted. The inadequacy of the information submitted by the applicant, as highlighted in the inspector's report, was not addressed in the Jennings O'Donovan report. The Kavanagh Burke report synthesises problems relating to groundwater flows in karst areas and the potential impact on the recharge of turloughs.

6.94. In commenting on the proposed Merlin System the Kavanagh Burk report refers to the report by the Norwegian Institute of Nature Research which noted that the performance in a particular site depends heavily on the specific environment at the

particular location. Problems in relation to interference from clutter due to the turbines and echoes from the wind turbines themselves and from the ground are referred to. It is stated that the clutter will reduce the system's detection capability of birds in the affected areas.

- 6.95. The Kavanagh Burke report concludes that the latest information submitted did not address any of the gaps in the information as identified by the Board's inspector in the previous case. Neither did the information address the scientific facts regarding the hydrogeology which supports the surrounding Natura 2000 sites. Events such as the occurrence of sink holes in the area which had previously been referred to had not been addressed. It could not accordingly be concluded that the proposed development would not adversely affect the integrity of the surrounding Natura 2000 wetland sites.
- 6.96. A submission from the applicant was received on 8th December, 2015. In this submission the applicant refers to the dismissal by the Court of Appeal of an appeal challenging the judgement of Mr. Justice Haughton on 1st May, 2015 in respect of the Board's decision to grant planning permission for the proposed Cullenagh Wind Farm in County Laois. (A copy of the High Court decision in this case was submitted at the Oral Hearing). It is submitted that this clarified three points of law of exceptional public importance. One of the points clarified is that there is no obligation imposed by the Habitats Directive on a private developer to contribute positively to the restoration and conservation objectives of a European site. It was also clarified that the obligation placed on the Board is to have access to the best scientific knowledge that is reasonably available in order to ensure that an appropriate assessment meets contemporary scientific standards. It is submitted that the Board is fully entitled to rely on the detailed environmental impact statement and Natura Impact Statement and the several volumes of additional information submitted by the applicant in the current case. No empirical evidence had been submitted by other parties including the Department of Arts, Heritage and the Gaeltacht to contradict the

weight of this scientific evidence. The decision also clarified that it was lawful and appropriate in the context of the Habitats Directive for technical aspects of post consent mitigation measures to be left over for agreement between the Planning Authority and the developer by way of a condition of consent. It is submitted that the judgement of Mr. Justice Haughton and that of the Court of Appeal vindicated the approach taken by the applicant and by An Bord Pleanála in the original decision to grant planning permission.

6.97. It is not accepted by the applicant that no scientific hydrogeological information or assessment was presented in the report by Jennings and O'Donovan Consulting Engineers which had been submitted to An Bord Pleanála on 18th May, 2015. The purpose of that report as set out in Section 1.1 is referred to. The objective of the drilling was to obtain a more extensive understanding of the underlying soil and rock conditions and to investigate some of the possible cavities or anomalies and karst features and to correlate the findings with the interpretation of the geophysical study. The submission explains why the boreholes were dug at different locations from originally intended. The borehole at proposed Turbine No. 4 would be closer to the centre and therefore more reflective of conditions at the turbine centre and it would intercept a localised low resistivity area west of the centre which would be similar to that identified 20 metres to the north-east where it had been originally proposed. For Turbine No. 5 the original intention was to drill at the centre of the borehole. As this would have impacted on a stone wall, the borehole was drilled 8 metres north-west of the centre so as to give space for the drilling rig. Similar resistivity profiles would have been expected at this location. For the substation the original intention was to drill 5 metres north of the centre. The borehole was drilled 2 metres south-west of the centre as the landowner did not want to interfere with the culvert until it could be diverted.

6.98. It is accepted that seasonal flooding is present in the area and this is a natural consequence of the interaction between the local geology, land form and rainfall. No

turbines are located within the flooded zone. Minor adjustments were made to the location of Turbine No. 6 in order to take account of a small area of land that occasionally floods. It is submitted however that even if a turbine is located within the flooded waters it would not lead to any significant issues in respect of flooding, hydrogeology or hydrology. Condition No. 15 of the Board previous decision required that construction works at Turbine No. 6 would take place between May and September. It is stated that no piled foundations are proposed as a mitigation measure at Turbines Nos. 4 and 5 or at the substation. Piled foundations have never been ruled out by the applicant as a foundation design solution. It has been stated that piling of foundations is highly unlikely and would be avoided if at all possible.

- 6.99. On the issue of grid connection it is submitted that the applicant has applied for a contestable connection to connect to the 110 kV sub-station at Monksland in Athlone. This type of application refers to a connection to the transmission system where some or all of the required connection can be supplied or built by the applicant. The applicant's intention is that the connection to the national grid will be constructed by way of underground cable under the public roadway. In a recent decision by An Bord Pleanála in respect of a proposed wind farm in County Offaly (PL 19 244903) a similar underground connection has been permitted. The submission by the applicants on 18th May, 2015 fully addresses the cumulative environmental impacts of the proposed grid connection. It is stated that the likely impact of the proposed underground cables have been addressed in detail in the EIS. It is stated that it is proposed to use clay bunds at intervals of approximately 20 metres along the cable trenches to prevent the trenches from potentially becoming preferential water pathways. It is stated that cables should be laid in shallow ducts and with the implementation of all mitigation measures proposed it will have no impact on flooding or surface water drainage. (At the Oral Hearing the representatives on behalf of the applicants stated, in response to a question, that it was not intended to use clay bunds at intervals of approximately 20 metres along the

public road where the connection to the sub-station in Phase 2 is proposed. It was clarified that this proposal related to cable trenches within the site).

6.100. In responding to the latest submission from the Department of Arts, Heritage and the Gaeltacht the applicant submitted that the High Court judgement quashing the previous decision was concerned with the quality of An Bord Pleanála's decision from the perspective of process and not with the quality of the application itself. The Court made no finding of any absence of scientific knowledge which would prohibit the Board from granting planning permission. It is submitted that all of the information which has been submitted to the Board and now supplemented with substantial further information represents the best scientific evidence and knowledge in the field. None of this information has been contradicted by evidence. No reasonable scientific doubt remains to the effect that the proposed development would by itself or in combination with other projects adversely affect the integrity of any relevant European Site. The Board reached this conclusion previously but simply failed to properly and clearly record the assessment and the reasons for that determination.

6.101. It was submitted that all of the Department's submissions to date are confined to highlighting the innate uncertainty of natural ecosystems and critically commenting on the evidence put forward by the applicant but it had not submitted any cogent environmental or scientific evidence. It is submitted that this placed the applicant in an impossible position. The applicant submitted that the Department's approach in other cases e.g. the case referred to on file PL19.244903 was different. The Department accepted, in that case that the EIS recorded no flight activity across the proposed development site.

6.102. The applicant submits that the Department was misrepresenting the comment in the applicant's previous submission in relation to the Court judgement. It is submitted that the judgement in the Kelly versus An Bord Pleanála case is not a novel core

conclusion and the Board would have been well aware of its responsibilities in regard to conducting its original appropriate assessment. In the High Court case there was an absence of evidence before the Court that the Board had properly carried out a lawful appropriate assessment but there was no evidence of any absence of scientific knowledge that would enable the Board to reach a lawful determination and to grant planning permission.

6.103. The applicant also referred to the judgement of Justice Haughton in the case of Cullenagh Wind Farm. The Court of Appeal had also given judgement in relation to this case. The Court of Appeal ruled that the Board is entitled to rely on scientific knowledge submitted during the course of the appeal and reasonably available in reaching its determination. It is submitted that the applicant had made every effort to address the concerns expressed by the Department. The unequivocal conclusion of the studies carried out is that bird species of conservation concern cross the proposed development site very seldom (typically as a result of increased human disturbance).

6.104. It is submitted that the Scottish National Heritage guidance allows for an adaptive approach and when doing surveys it is entirely appropriate to change survey locations in the light of new information. The vantage point surveys again confirm that flocks of swans rarely cross the site and geese and ducks were never recorded crossing the site. Lough Funshinagh was ruled out of the survey because of its distance from the site and not because of access issues. Lough Funshinagh is also no longer an important location for Greenland White Fronted Geese. The Ecofact report did not suggest that the total population of Greenland White Fronted Geese in the area is 21 (in comparison to the National Parks and Wildlife figure of 131 at the Four Roads Special Protection Area). It is accepted that the Greenland White Fronted Geese move between the River Suck callows and Four Roads Turlough. They would not however cross the site of the proposed development in these movements. The important issue is the pattern of use of Lough Croan by Greenland

White Fronted Geese and they were not recorded at Lough Croan during the 2014/2015 survey. It is submitted that the extensive survey work indicates that flocks of birds, including ducks, rarely cross the site of the proposed development.

6.105. The applicant submits that the surveys of the Whooper Swans indicated that the total number of Whooper Swans in the lakes is usually consistent and there is no evidence of an influx from Lough Ree SPA or the River Suck SPA. The likelihood of occasional flocks of Whooper Swans crossing the site at the peak of the winter bird season was identified and this can happen when Whooper Swans move from Thomas Street Turlough to Lough Croan. This however is an occasional event and not a regular flight path. There is no evidence of Whooper Swans moving between the water bodies at night. It is accepted that some displacement of grazing fields used by the swans may be likely when the wind farm is constructed. Having regard to the extent of other nearby potential grazing areas this would not be considered to be a significant impact. Whooper Swans are not a key conservation interest of Lough Croan SPA. It is submitted that it is unfair to visit the consequences of the agricultural disturbance on the applicant.

6.106. The applicant reasserts that the Merlin System is a residual “belt and braces” mitigation measure which, following the results of the collision risk modelling would mitigate the very small risk of a bird colliding with the wind turbines. It is intended to mitigate the collision risk in relation to the rare over flight events by a small number of birds. It is submitted that the Merlin System represents the state of the art avian safety and bird control measure and it is the most advanced system available. The system is being provided in accordance with the precautionary principle and based on the applicant’s collision risk modelling would reduce these events to an entirely insignificant level. It is noted that in its original decision the Board was of the view that the system may be of value as an aid in minimising impacts. The Board was however satisfied that, independent of the Merlin System, there is reasonable

scientific certainty as to the absence of impacts on any designated European Site or species of conservation concern. The additional information confirms this conclusion.

7.0 Development Plan Considerations:

- 7.1. The current Roscommon County Development Plan is the 2014 – 2020 Plan. This plan came into effect on 12th May, 2014. The current plan accordingly was not in effect when the Roscommon County Council made its decision or when An Bord Pleanála previously determined the case.
- 7.2. In the current plan the nearest Tier 2, 3 or 4 settlements identified in the Plan are Ballyforan identified as a Tier 4 settlement, Monksland/Bellanamullia identified as a Tier 2 settlement, Hodson Bay on the edge of Lough Ree identified as a Tier 3 settlement and Creagh (Ballinasloe Environs) identified as a Tier 4 settlement. It is stated in the Plan that apart from the settlements referred to as Tiers 1 to 3 a significant cohort of the projected population allocation for the county for the relevant period will be directed towards smaller settlements and the countryside to what is referred to as one-off housing. It is stated that development of this kind would be assessed for consideration on a case by case basis within the context of the Sustainable Rural Housing Guidelines and other relevant policies of the development plan.
- 7.3. Part 2.5 of the Plan deals with the issue of landscape, natural heritage and built heritage. Reference is made to the rich, varied and diverse landscape of the county and to the landscape character assessment contained in the 2008 – 2014 Plan. (This appears to have been carried forward into the 2014 plan). It is noted that many features of the landscape are afforded European and National protection. Natura 2000 sites are referred to in this regard. It is stated that the Council is aware of the significance of maintaining the integrity of sensitive areas and will seek to limit development to that appropriate and considered sustainable in these areas.

- 7.4. Part 3.4.1 of the Plan deals with the issue of agriculture and diversification of agricultural activity. It is stated that the Council seeks to ensure the continuity of agriculture for reasons that are not solely economic. It is stated that the sector has important cultural significance, is the predominant land use in the county and has essentially shaped the landscape and settlement pattern of the county. The Council's rural settlement policy is centred on facilitating the continuity of agriculture and maintaining the integrity of viable farming areas. The Council recognises the need for a large proportion of farms to diversify into other areas and seeks to provide for other vibrant, environmentally sustainable and well managed enterprises including horticulture, forestry, energy and the bloodstock/equestrian sectors. The Council supports the diversification of farm business into areas which do not militate against landscape or environmental protection policy and objectives of the plan. One of the objectives in relation to agricultural diversification is to ensure that the development does not have a negative impact on the scenic amenity of the countryside, in particular, in specified areas including those directly impacting upon scenic views or routes as identified in the County Roscommon Landscape Character Assessment.
- 7.5. Part 3.4.3 of the Plan deals with wind and other natural resource energy technologies. It is stated that the atlas of wind speeds indicates that large areas of Roscommon meet technical requirements for the development of wind turbine sites. It is stated that Roscommon County has a very dispersed settlement pattern and there are a few appropriate sites which are more than 400 metres from a dwelling. The total developed wind farm capacity in 2013 was 29 megawatts or about 1.4% of the national total. The plan refers to the energy white paper of March, 2007 which had a target of 33% of energy supply to be met by renewable energy sources by 2020. Wind energy is a significant component of this target. It is stated in the Plan that it is important that a balance is achieved between responding to government policy on renewable energy and enabling the county's energy resources to be harnessed in a manner that is consistent with proper planning and sustainable

development. Roscommon County Council will be guided by the Wind Energy Development Guidelines 2006 in relation to the location of large wind turbines.

- 7.6. It is stated in the Development Plan that the Landscape Character Assessment of 2014 is one of the main policy areas which will inform the issue of suitability for wind farms in the county. In this assessment each of the landscape character areas are classified into four categories ranging from exceptional value to moderate value. The Development Plan refers to section 4 of the Landscape Character Assessment which gives examples of where potentially appropriate locations might be found. The areas referred to are Arigna Mountains, Brokagh Hill and surrounds, upland near Garranlahan, Braywood Hill uplands, Slieve Bawn and the high ground to the east of Lough Funshinagh.
- 7.7. Policies 3.47 to 3.52 of the development plan refer to wind and other natural resource energy technologies. These policies include compliance with the Wind Energy Planning Guidelines 2006 and to the Landscape Character Assessment for the county. Particular attention is drawn to the immediate visual impact and long distance views, scenic routes and scenic views set out in the Landscape Character Assessment report and sites of special value which have been identified as of particular importance for their sense of isolation and tranquillity. The two areas referred to in regard to the latter are Landscape Character Areas 27 and 6. Reference is also made in Policy 3.50 to compliance with the County Roscommon Renewable Energy Strategy 2013 – 2020. It is stated that all wind turbine proposals, irrespective of their size, shall be subject to a full environmental assessment (EIA). Policy 3.52 states that no wind energy development will be considered in any Natura 2000 site or their surrounding buffer areas. Only proposals which will not adversely affect the integrity of any Natura 2000 sites will be permitted.
- 7.8. Part 4.2.4 of the Development Plan deals with the issue of groundwater protection. This part of the Plan refers to the inherent ecological and economic value of

groundwater and identifies it as a major resource that needs to be protected. The Roscommon Groundwater Protection Scheme (2003) indicates that a large portion of the county is classified as being of extreme or of high vulnerability, in terms of risk of contamination. It is noted that areas in the north of the county where rock is generally at or close to the surface are extremely vulnerable. The Planning Authority will consider groundwater vulnerability in assessing development proposals.

Objective 4.41 of the Plan is to control development within existing source protection areas in accordance with the recommendations of existing source protection plans and only allow development in these areas where no reasonable alternative exists.

7.9. Part 4.4 of the development plan sets out the planning authority's policies in relation to "flood risk and protection". The Council support the view that the precautionary approach should be adopted in carrying out flood risk assessments and it lists guiding principles which should be followed including the avoidance of development in areas at risk of flooding unless there are proven wider sustainability grounds that justify appropriate development and where the flood risk can be reduced and managed to an acceptable level without increasing flood risk elsewhere. Reference is also made to the sequential approach to flood risk management and the incorporation of flood risk assessment into the process of development management. Areas in the general area of the site of the proposed development are identified as flood points on the OPW flood information on Map 10 (flood risk) contained in the Development Plan.

7.10. Section 4.6 of the plan refers to the issues of energy generation and demand. The plan sets out government commitments to sustainable development and reducing energy demand. Reference is made to Ireland's target for electricity generated from renewable sources being 40% of gross electricity production by 2020. It is stated in Part 4.6.2 that wind energy has the potential to be an important sector of the economy of Roscommon assisting in job creation and rural development whilst also reducing dependence on fossil fuels. It is stated that large areas of North County

Roscommon are ideal for the development of wind energy. It is stated that the siting of wind turbines requires careful consideration.

7.11. In considering planning applications regard will be had to the criteria set out in the Wind Energy Guidelines 2006 and in the county's Renewable Energy Strategy which had been adopted as part of the development plan. No wind energy developments will be considered on Natura 2000 sites or their surrounding buffer areas. Proposals will also generally be discouraged in or close to proposed Natural Heritage Areas, scenic routes and protected views and highly sensitive rural landscapes. The Landscape Character Assessment adopted as part of the Development Plan provides recommendations that should be taken into consideration.

7.12. Part 5.11 of the development plan deals with the issue of housing in the countryside. It is noted that Roscommon is a rural county with a long tradition of people working and living in rural areas. Reference is made to people living in the rural area travelling considerable distances to work and consideration must be given to how this movement of people in the countryside affects towns and villages as well as the landscape of the countryside and the environment. It is stated that the rural landscape, which is the vital tourist asset of the county, has been altered by the amount of one-off housing that has occurred. It is stated that it is the aim of the Rural Housing Strategy to facilitate those with close economic and/or familial links to the countryside in residing in rural areas where they were raised and work. It is the aim to direct new rural housing into towns and villages. Reference is made to the Sustainable Rural Housing Guidelines for Planning Authorities 2005 as a response to the sustained pressure for rural housing which has prevailed.

7.13. Chapter 6 of the Development Plan deals with the issue of built heritage and archaeology. It is noted that there are over 4,000 monuments on the Record of Monuments and Places in County Roscommon. Policy 6.9 is to protect the archaeological heritage from damage. Objective 6.21 is to secure the preservation

i.e. preservation in situ or at a minimum preservation by record of archaeological monuments included in the Record of Monuments and Places. Objective 6.22 is to ensure that any development either above or below ground within the vicinity of a site of archaeological interest will not be detrimental to the character of the archaeological site or its setting. Objective 6.24 supports the conservation of archaeological landscapes in conjunction with the National Monuments Service of the Department of Arts, Heritage and the Gaeltacht.

- 7.14. Chapter 7 of the Development Plan deals with natural heritage and landscape character assessment. It is the strategic aim of the Plan to protect, conserve and enhance the biodiversity and natural heritage of designated sites in County Roscommon. Policy 7.1 is to protect, propose and designate Natural Heritage Areas, Special Protection Areas and Special Areas of Conservation. Policy 7.2 is to protect geological Natural Heritage Areas. It is stated in Part 7.3 of the Plan that areas of conservation concern must not be considered in isolation and that linkages and wildlife corridors between designated sites and important habitats must be given consideration. In a discussion on turloughs it is stated that it is important to identify turloughs of local conservation importance and to be aware of the hydrological impacts of developments on turloughs. Objective 7.9 of the Plan is to retain where feasible and enhance important landscape features such as lakes, rivers, wetlands, stone walls, hedgerows etc. Objective 7.22 is to seek hydrological reports for significant developments within or close to turloughs so as to assess the impacts on the integrity of the turlough system and associated groundwater levels.
- 7.15. Part 7.6 of the Plan deals with landscape character assessment. It is stated that landscape character assessment of the county was carried out in 2008. Landscapes in the county were divided into four categories i.e. exceptional value, very high value, high value and moderate value. Objective 7.37 is to seek to minimise visual impacts on all landscape character areas. Objective 7.40 is to seek to protect important views and prospects in the rural landscape.

7.16. Chapter 9 of the Development Plan sets out development management guidelines and standards. Part 9.30 deals with renewable energy. It is stated that the Council is committed to assisting in the development of alternative energy sources for environmental as well as energy policy reasons. The section references the Wind Energy Development Guidelines 2006 and the Renewable Energy Strategy for County Roscommon. Table 2 of Chapter 9 sets out standards and considerations in relation to key environmental factors for renewable energy developments. Applications must demonstrate, inter alia, that there will be no significant adverse effects on human health arising from noise, shadow flicker or odour. Ecological monitoring at sensitive sites during construction and the use of sensitive construction techniques are also referred to. The removal of bat commuting and foraging habitats shall be avoided where possible during both the construction and operational phases of the development. Where such removal cannot be avoided alternative habitats should be established prior to the removal. The table includes provisions for protection of bats present in trees scheduled for felling. In relation to soils and geology it is stated that site investigations are to be undertaken to anticipate, avoid or minimise construction impacts arising from the disturbance of subsurface conditions. Where the development is in close proximity to archaeological sites the working area shall be kept to a minimum. Where relevant pre-construction archaeological investigations shall be carried out and where necessary archaeological plans shall be implemented including pre-construction works, watching briefs and excavations.

7.17. The Renewable Energy Strategy which is part of the County Development Plan is also effective from the 12th May, 2014. Part 1 of this document sets out the international, national, regional and local policies in relation to renewable energy. The policies and objectives of the strategy are set out in Part 1.4. The renewable energy strategy was supported by a strategic environment assessment and a

Habitats Directive Assessment. It is stated that the appropriate assessment concluded that the integrity of Natura 2000 sites could be adversely affected by wind energy developments within or adjacent to the designated sites. It was accordingly determined that all Natura 2000 sites and their surrounding buffers would be designated as areas not favoured for wind energy development. Additional mitigation measures were also recommended to preclude indirect effects on any Natura 2000 site. It is an objective of the strategy to encourage and facilitate the various forms of renewable energy considered in the strategy provided that they are in accordance with the principles of proper planning and sustainable development. Policy No. 2 is to ensure that renewable energy developments do not undermine the preservation and conservation of the natural and built environment and that an appropriate balance is achieved between development and the preservation of the natural environment.

- 7.18. Map No. 5 of the Renewable Energy Strategy indicates landscape values, scenic views and routes. The site of the proposed development would be located in an area indicated to be of moderate landscape value. The closest scenic views are indicated as being to the north-east of the site of the proposed development. The views in question are V20, R8 and V22. (V20 is a view eastwards from a minor county road over Lough Ree from a location approximately 10.5 kilometres to the north-east of the site. R8 is indicated a road from which there is a view towards the south-east towards Lough Ree from approximately 7 kilometres to the north-east of the site of the proposed development and a V22 is a view indicated to be in a north-westerly direction across Lough Funshinagh from a minor road on the east side of Lough Funshinagh. This viewpoint is approximately 6 kilometres from the site of the proposed development. (The views and scenic road referred to are also indicated in the Landscape Character Assessment for County Roscommon 2014-2020 which forms part of the development plan.)

- 7.19. Map No. 6 of the Roscommon Renewable Energy Strategy divides the county into most favoured, less favoured and not favoured areas of renewable energy development potential. The site of the proposed development is within one of the areas identified as being most favoured.
- 7.20. Chapter 5 of the Renewable Energy Strategy sets out development management standards for renewable energy developments. It is stated in this chapter than any wind energy development proposal which would be likely to affect the future growth and development of an existing settlement will not be permitted.
- 7.21. Part 5.2.2 refers to the distance of wind turbines from adjoining boundaries. It is stated that the impact of a proposed wind farm on the development potential of adjacent sites would be a material consideration. Where permission for wind energy development has been granted on an adjacent site the principle or the minimum separate distances between turbines set out in the Wind Energy Guidelines 2006 “may be applied “. (It is stated that the minimum distance between wind turbines will generally be three times the rotor diameter crosswind and seven times the rotor diameter in the prevailing downwind direction.)
- 7.22. Part 5.2.3 deals with shadow flicker. It is noted that the guidelines state that shadow flicker is generally not a critical issue. A condition requiring the non-operation of turbines at times when predicted shadow flicker may adversely impact on an inhabited dwelling within 500 metres may be appropriate. Assessments of the theoretical shadow flicker impacting on dwellings within 500 metres of any turbine shall be submitted. If deemed necessary mitigation measures shall be proposed.
- 7.23. It is stated in paragraph 5.2.4 that cumulative effect will be a material consideration in assessing applications and it is noted that Roscommon’s elevated areas tend to be open to view from considerable distances and the cumulative effect is more pronounced.

- 7.24. Part 5.2.5 requires the submission of an archaeological assessment for all sites in close proximity to areas of archaeological influence.
- 7.25. Part 5.2.6 states that the potential impact of a development on all birds including migratory patterns, flight paths etc. will need to be assessed in all wind farm applications. Where flight paths of wild birds or bats are identified mitigation measures such as relocation of wind turbines or reduction in the number of turbines will be required.
- 7.26. Part 5.2.8 of the renewable energy strategy deals with the issue of noise. It is stated that the Wind Energy Development Guidelines sets out parameters for acceptable noise limits “which are as follows”. The next paragraph, however, refers to the difference of approximately 10 dB(A) between the outside and inside noise in a building. It is stated “consequently an outdoor limit set at this level would generally result in a noise level of 30 dB(A) or less inside a dwelling”. The next paragraph states that a noise limit of 40 dB(A) attributable to one or more wind turbines should be applied in order to restrict noise from wind turbines at noise sensitive properties from 0.1 Hz to 20,000 Hz. It is stated that this limit is an outdoor limit which should not be exceeded at noise sensitive properties at any wind speed within the operational range of any turbine. It is also stated that the limit applies to the combined sound limit of all turbines in the area irrespective of which wind farm they may be associated with. The limit will apply irrespective of time of day or night. (This part of the strategy was discussed in some detail at the Oral Hearing and this will be referred to later in my assessment).
- 7.27. Part 5.2.10 of the strategy refers to issues which would need to be addressed in relation to the construction phase of the development. This relates, inter alia, to hours of construction, use of on-site borrow pits, drainage issues relating to the development etc.

- 7.28. Part 5.2.11 deals with the issue of access roads and tracks which are necessary ancillary developments. It is stated that it is important that the impact of these is minimised from both environmental and visual perspectives. The material used will be sourced locally and ideally should be crushed local stone which will minimise the visual contrast between the road and the surrounding land cover.
- 7.29. It is stated in Part 5.2.12 that the protection of all watercourses and aquifers is of paramount importance and that hydrological impacts should be fully considered.
- 7.30. Part 5.2.15 deals with the issue of the grid connection. It is stated that it is recognised that due to circumstances beyond the control of the developer it may not be possible to provide precise information about the grid connection at the pre-planning or planning stage. It is recommended, however, that the applicant provides indicative grid connection information and/or feasible connections for the assessment of the planning authority. It may be necessary to apply separately for planning permission for works to facilitate connection to the grid.
- 7.31. Parts 5.2.16, 5.2.17 and 5.2.18 deal with electromagnetic interference, aeronautical safety and development contributions respectively.
- 7.32. Part 5.2.19 deals with safety considerations. It is stated that a minimum setback equal to the height of the turbine and the blades would be required from all public roads and railways. Due consideration must also be given to overhead power lines. The section states that a management agreement to ensure that turbines and ancillary equipment do not deteriorate to a degree where they pose a hazard to the public shall be agreed with the local authority. Part 5.2.20 deals with decommissioning.
- 7.33. Part 5.3 of Chapter 5 set out the various criteria against which planning applications will be considered. This includes impact on, flora and fauna, designated sites, sites of ecological significance and on the built heritage. Ground conditions and the

protection of waters, visual and landscape issues, the local environment and telecommunications, access to the site and transportation of materials, the site access and site facilities are all referred to.

- 7.34. Table 1 of Chapter 5 sets out minimum survey requirements for proposals potentially affecting important features using best practice approaches. This sets out the principle methodologies to be used in surveys for various species and the timing and duration of surveys. The survey methods for birds are referenced to the Scottish National Heritage Recommendations of 2006.
- 7.35. Table 2 contains a summary of recommendations for Natura 2000 site features. The recommendations for Greenland White Fronted Geese and Whooper Swans are to exclude areas up to 600 metres outside SPAs designated for the species from the most favoured areas for wind energy development. In relation to Golden Plover the recommendation is to exclude areas up to 1 kilometre outside any SPA designated for the species from the most favoured areas.
- 7.36. The Development Plan for 2014-2020 contains a Landscape Character Assessment document for County Roscommon. This is stated to be effective from the 12th May, 2014. This appears to be based on an earlier document dating from 2008. The site falls within Landscape Character Area No. 34 which is described as Lough Funshinagh, stone walls, grasslands and esker ridges. This is stated to be one of the largest landscape character areas in the county. This is an area of low-lying dry grassland with some eskers in the southern part of the area. It is stated in the character assessment that stone walls evolved as the system of enclosure throughout this area and in places that field sizes are small contributing significantly to the landscape character and sense of place. The overall image is stated to be of a rolling stone walled grassland landscape with a distinctive esker area to the south.
- 7.37. The landscape in Landscape Character Area 34 is stated to be of moderate value. Lough Funshinagh located approximately 6 kilometres to the north-east is identified

as an area over which there are good views. It is stated that the other feature of value in this landscape character area are the eskers. Moderate is the lowest of the four values given to landscape character areas in the plan. The values given are exceptional value, very high value, high value and moderate value. The scenic views and roads referred to in paragraph 7.17 above are identified in the Landscape Character Assessment document.

8.0 National Policy Considerations (Most recent considerations):

Planning Policy Statement 2015:

- 8.1. It is stated in this document that the Government has prepared this non-statutory planning policy statement to set out key principles that it expects planning authorities and other public bodies to observe and to set out high level priorities for the continued enhancement of the planning system in Ireland.
- 8.2. The policy statement contains 10 key principles which include that planning must be plan led and evidence based, pro-actively drive and support sustainable development in creating communities and further developing existing communities in a sustainable manner.
- 8.3. Principle No. 4 is that planning must support the transition to a low carbon future and adapt to a changing climate.
- 8.4. Principle No. 8 is that planning will conserve and enhance the rich qualities of the natural and cultural heritage of Ireland in a manner appropriate to their significance, from statutorily designated sites to sites of local importance, including the conservation and management of landscape quality to the maximum extent possible.
- 8.5. Principle No. 9 is that planning will support the protection and enhancement of environmental quality in a manner consistent with the requirements of relevant national and European standards by guiding development towards optimum

locations with the prospect of ensuring high standards of water and air quality, biodiversity and the minimisation of pollution risk.

- 8.6. Under the heading of emergent employment sectors it is stated that planning policies for the development of renewable energy and energy infrastructure will be updated to support the transition to a low carbon economy and community acceptance. In discussing the quality of planning outcomes in Part 4 it is stated that the planning process plays a very significant role in promoting patterns of development which help Ireland to meet international obligations by tackling sources of climate change by reducing Ireland's carbon footprint, facilitating the generation of energy from low carbon sources and adapting to the effects of climate change.

Adapting to Climate Change and Low Carbon Act 2015:

- 8.7. The Adapting to Climate Change and Low Carbon Act was passed in 2015. This Act sets a statutory framework for the adoption of plans to ensure compliance with Ireland's commitments to European and international agreements on climate change.

White Paper on Energy 2015-2030:

- 8.8. The aim of this document is to set out strategies for the state to adapt to a low carbon future and to provide for Ireland meeting its international and E.U. commitments on greenhouse gas reductions. The White Paper does not set new targets but it re-iterates existing ones.
- 8.9. It is stated in the White Paper that a radical transformation of Ireland's energy sector is required to meet climate policy objectives. It is stated that a low carbon future will involve, inter alia, greater use of electricity from renewable sources of which the country has a plentiful supply and greater use of electricity for heating and as a fuel for transport. The White paper repeats the target of generating 40% of the country's electricity from renewable sources by 2020. It is stated that in the longer term fossil

fuels will be largely replaced by renewable energy sources. Renewable energy and increased energy efficiency will play vital roles in reducing greenhouse gas emissions.

8.10. The White Paper contains a commitment to introduce a new support scheme for a range of renewables. There is also a commitment to ensure that grid connection policies have due regard to current and future renewable energy policy.

8.11. The 2015 energy White Paper envisages on-shore wind driven plants continuing to be the main contributor to renewable electricity. It is stated in Chapter 4 that to achieve the target in relation to renewable energy the average rate of build of on-shore wind generation will need to increase up to 260MW per year from the current rate of about 170MW. A total of 3500-4000MW of on-shore renewable electricity generation is required in comparison to the December 2015 figure of 2500MW.

9.0 Environmental Impact Assessment:

9.1. This assessment forms part of my assessment of the implications of the proposed development having regard to the proper planning and sustainable development of the area. This part of the assessment deals with likely effects on the environment. Such an assessment is required in order to comply with the European Union EIA Directive and Irish Legislation transposing this Directive in Irish Law. The assessment has regard to the receiving environment, the characteristics of the proposed development, likely significant impacts of the proposal on the environment and mitigation measures proposed in order to eliminate, reduce or control effects on the environment. The assessment must contain an examination, analysis and evaluation of the development's direct and indirect effects on the various environmental factors referred to in Article 3 of the E.U. EIA Directive.

9.2. In order to facilitate the assessment by the competent body the proposed developer is required to submit certain specified information. This has been done in this case

by the submission of an environmental impact statement with the planning application. This has been elaborated on and expanded in various documents and in particular the response to the further information request from the Planning Authority. There was also a submission of additional information following a request from An Bord Pleanála in December 2011 and further information was submitted to and received by An Bord Pleanála on 18th May, 2015. In addition, information was submitted with various responses both to Roscommon County Council and to An Bord Pleanála. In addition to the submissions made by the applicant information and relevant material was submitted at various stages by others, including those making observations on the application and the appellants. In my assessment I will take account of all the submissions made. My overall assessment of the planning application does not repeat the assessment on all of the various issues covered in the environmental impact assessment in this section of the report but the conclusions from this assessment are carried forward into my overall assessment.

- 9.3. Details of the application and a broad description of the site and of the site location have been outlined at the beginning of this report. I do not intend to repeat those in this assessment. The assessment carried out by the applicant for the purposes of completing the environmental impact statement is based on a grouped format with individual topics being discussed having regard to the receiving environment and the characteristic of the proposed development. In my assessment I will refer to the various topics which have been covered in the environmental impact statement, giving particular emphasis to the areas where there are most likely to be any significant effects on the environment. I note that no formal scoping of the information to be contained in the environmental impact statement was carried out prior to the submission of the application. The information submitted and the topics covered are accordingly considered having due regard to the requirements of the Directive and the Irish legislation transposing same into Irish law. Article 94 of the

Planning and Development Regulations 2001, as amended, and Schedule 6 of the regulations are relevant in this regard.

- 9.4. The EIS as submitted consisted of three volumes i.e. Volume 1 – Environmental Statement Main Report, Volume 2 – Environmental Statement Photomontages and Accompanying Drawings, Volume 3 – Environmental Statement Non-Technical Summary. It should be noted that a number of additional photomontages were submitted to the Planning Authority with the response for the request for further information.
- 9.5. Table 1.5.3 of the EIS sets out the names of the various consultants and professionals involved in the preparation of the EIS and the particular chapters for which these were responsible.
- 9.6. Chapter 2 and Chapter 3 of the EIS deal essentially with the site location and context and details of the proposed development. I have already set these out briefly in the first part of this report. Chapter 5 deals with the policy context. This has altered somewhat since the preparation of the environmental impact statement and the decision of Roscommon County Council on the application. It is also altered since the previous decision of An Bord Pleanála due to the adoption of the Roscommon County Development Plan 2014 – 2020 which came into effect on 14th May, 2014. I have already outlined the various policy provisions contained in the relevant County Development Plan and the Renewable Energy Strategy which was adopted as part of the Plan. I have also referred to some national policy issues arising since the previous decisions. I will deal with compliance with the policy context in my overall assessment of the application rather than in the environmental impact assessment. The remainder of this part of the assessment will be done under headings generally corresponding to those set out in the EIS with some additional commentary particularly on the grid connection and the supplementary information in relation to this submitted to the Board on 18th May, 2015.

Impact on Human Beings:

- 9.7. The likely impact on human beings is dealt with essentially in Chapter 6 of the EIS although specific topics which would impact on people living in the area such as noise, shadow flicker, landscape and visual amenity and traffic are dealt with in separate chapters of the EIS. For convenience I will deal with these issues under separate headings. The issues dealt with in Chapter 6 are essentially population, employment, community and tourism.
- 9.8. The documentation submitted indicates that 60 people would be employed in the construction phase of the development for approximately 9 to 12 months. It is indicated that the number of people employed would vary depending on the particular construction activity being carried out at a particular time. It is submitted that following construction approximately 1 to 2 people would be employed in the operational phase of the development. It is estimated that the construction would involve an investment of €72 million to €80 million.
- 9.9. Having regard to the short nature of the construction phase and the long-term employment projections I consider that it is reasonable to conclude that the proposed development would not have any significant long-term direct effect on the population level in the area. The short-term investment would be of some benefit to the local economy and to local service providers in the area.
- 9.10. The site of the proposed development is owned by 13 landowners. (The other involved local landowners may also gain from the development although this is unclear) The landowners will receive rent payments on an annual basis over the lifetime of the project. In the context of increased pressure on farming in marginal areas and the development plan policies in relation to the diversification of the rural economy the additional income to the landowners will be beneficial to the local community and will help to maintain incomes and spending power in the local area. This will be beneficial to the various commercial outlets and service providers in the

area. The development would accordingly make some indirect contribution to retaining the population level and services in the area.

- 9.11. The applicant proposes the establishment of a community fund to support local community groups. The legal basis on which such a fund might be operated was discussed to some extent at the Oral Hearing. There is no clear cut legal basis for such a fund in the circumstances pertaining. This issue is discussed in more detail in my general assessment and is not considered further in relation to community impacts in terms of impacts on human beings.
- 9.12. The proposed development would interfere with existing farming activities on the lands during the period of construction. This however would be a relatively short-term period and following commissioning of the wind farm there is no substantive evidence to support the contention that farming activities of the nature which currently exist in the area could not continue to operate.
- 9.13. It is submitted that the proposed development would result in the devaluation of existing properties in the vicinity as the proposed wind farm would be visually dominant in the local area. The development could possibly result in a reduced demand for houses at least in the short term. In the long term it is likely that with a greater demand for and focus on the production of energy from renewable sources wind farms will become a more common and accepted form of development in rural areas if current government policies continue. The submissions made both by the developer and the objectors to the wind farm are not conclusive in relation to the impact and in particular the long term impact on property values. If property values are not to be adversely affected it is necessary to ensure that noise and shadow flicker levels are controlled in order to protect residential amenities. These issues are discussed later.
- 9.14. The area where the development is proposed is not a significant tourism destination. Whilst there are some recreational facilities such as angling on nearby waterways

overall I do not consider that there would be a significant impact on tourism arising from the proposed development. I consider that there is not conclusive evidence that wind farms significantly interfere with the tourism in locations such as that in question. By acting as a focal point of interest they can, at least in the initial stage, become a tourist attraction in their own right. The long term impact on tourism is unlikely to be significant either way. I do not consider that any interference with tourism, arising from the development, would have any significant impact on the economy of the local area. (Issues in relation to impact on the landscape and visual amenity are discussed later).

- 9.15. Wind farms can interfere with telecommunications signals and affect television reception etc. The results of the consultations however do not indicate any particular problem in this regard arising from the proposed development. It appears in the circumstances that any problems which may arise can be overcome (the documentation indicates a protocol agreement between the developer and RTE in relation to interference with television transmission).
- 9.16. The construction phase of the development would clearly give rise to additional traffic and in particular abnormal loads on the road network in the vicinity. This would have some impact on local residents and give rise to some inconvenience. Similarly, issues such as dust generated during this phase of the development would have short-term impacts. The construction phase however is a short-term phase and I do not consider that the development would generate such inconvenience for local people on the basis of traffic or dust as to justify a refusal of permission on these grounds. (The adequacy of the road network etc. to cater for the construction phase of the development is discussed later). Normal good construction codes of practice in relation to dust control would limit any short-term problems arising from the construction works. (The dust issue is dealt with under the heading Impact on air and climate).

Impact on Flora and Fauna:

- 9.17. This issue is dealt with in greater detail in the reports of Mr. Richard Arnold and aspects of it are also referred to in the report of Mr. Keohane in his assessment of hydrological and hydrogeological issues. This section accordingly only contains a brief overview and the issue is also dealt with in more detail in the Appropriate Assessment in so far as concerns arising from the EU. Habitats Directive are relevant. My Appropriate Assessment is contained in part 10 of this report.
- 9.18. Figure 6.2 (Appendix 7.1 of Chapter 7) indicates the different habitats within the overall lands in which the turbines and access tracks would be located. The bulk of the lands are improved grasslands. There is a small area of un-improved calcareous grasslands located near the centre of the site to the north of proposed Turbine No. 9. Turbines Nos. 8 and 3 would be located within scrub areas. Part of the access road e.g. sections between Turbine Nos. 7 and 8 and between 8 and 9 would cut through some scrub areas also. None of the lands are designated as being of particular ecological significance. Table 7.4.1 of the EIS indicates the nearest designated areas. The nearest i.e. Lough Croan which is now both an SAC and an SPA is stated to be approximately 1.1 kilometres away to the north-east. The nearest turbine to this designated area is Turbine No. 6.
- 9.19. It is noted in the EIS that the dry calcareous grassland section near the centre of the site corresponds to the EU Annex I Habitat of semi-natural dry grasslands (Type 6210). Mr Arnold states that a reasonable case could be made to the effect that it is Annex 1 category 6210 although it was submitted on behalf of the applicant, at the oral hearing, that it is not. This grassland habitat also contains moderate numbers of orchids. Important orchid sites are priority habitats in the EU designations. The dry calcareous grassland area, near the centre of the lands involved, which is located to the north of proposed Turbine No. 9, would not be directly impacted upon by the

proposed development as stated in the EIS. These lands have not been included in any SAC or proposed NHA.

- 9.20. Figure 6.3 indicates some tree lines towards the western end of the site. There would be some impact on the tree lines in question due to the construction of the proposed access road. The bulk of the field boundaries are defined by stone walls. There would be some disruption to the field boundary wall system due to the proposed development. The access roads and many of the turbines are indicated in close proximity to stone walls and field boundaries. These features are common in the area.
- 9.21. It is noted in the EIS that the majority of the habitat to be affected by the proposed development is improved agricultural grassland land which is of limited ecological importance and is a habitat type which is widespread throughout the locality. It is noted that although stone walls, hedgerows and tree lined habitats are also widespread throughout the locality these habitats are important to the ecological integrity of farmland eco-system functioning. It is stated that the impact due to habitat loss and disturbance would be very low to low and it is possible to provide mitigation against these impacts. The impacts should be minimised by avoiding the removal of habitats such as scrub, woodland, hedgerows and tree lined habitats and where removal cannot be avoided it is recommended that a similar area of habitat be planted. No plans indicating such planting have been submitted.
- 9.22. Mr Arnold's attached report notes the most significant loss of flora being the loss of approximately 0.6 Ha of un-improved calcareous grassland. He indicates that this habitat is somewhat more extensive than indicated and may be the EU Habitat Directive Annex 1 category 6210 grassland habitat even if not the orchid rich priority type. The Habitat Management Plan indicates an additional 4 Ha of this habitat being available in the future if the management plan is implemented and is successful. There would, accordingly, be some gain of habitat of conservation value from the

development proposed in the current application when account is taken of mitigation measures including the Habitat Management Plan. (The plans for Phase 2-20.244347- indicate a loss of 3.2 Ha (Net 2.4 Ha) with no replacement. There would accordingly be little cumulative gain if both schemes are permitted).

- 9.23. I consider that there would be no significant loss of unique or rare flora within the lands where the access roads and turbines are proposed. Direct impacts on the existing habitats would not result in any significant ecological damage and the habitats in the site are common in the area.
- 9.24. Item No. 6 of the request for further information from the Planning Authority requested further information in relation to the management of habitats within the site and the protection of the identified dry calcareous grassland. The response indicated that the area of dry calcareous grassland near the centre of the lands would not be affected by the proposed development. A Habitat Management Plan was submitted as part of the response to the request for further information. In the response the area of dry calcareous grassland and an adjoining area of approx. 4 Ha are indicated as a grassland management zone. It is stated that the existing calcareous grassland will be protected and maintained. An adjacent 4 hectare site would be set aside to become meadow. It is submitted that with management it was likely that this grassland will revert to calcareous grassland in a period of time. The EIS refers to regular cutting of the new area. (It was stated at the oral hearing that management would be by grazing). This would provide an area of habitat suitable for ground nesting birds and improve the ecological value of the habitats for all flora and fauna in the environs. It is stated that the area in question would be agreed between the project operator and the landowner prior to the construction of the wind farm. It is submitted that the Habitat Management Plan would be audited and reviewed on an on-going basis. The response to the request for additional information also sets out the general mitigation measures designed to protect the flora and fauna of the area. This includes mitigation by remedy whereby hedgerows and tree lines lost would be

replaced by native species. It also includes timing of works in order to protect birds and bats. The mitigation measures referred to in the Habitat Management Plan would help to protect existing flora and fauna in the lands which are the subject matter of the application.

- 9.25. Potential indirect impact of the proposed development on flora and fauna off- site and avifauna possibly occasionally crossing the site is dealt with in more detail in the Appropriate Assessment in so far as the development may impact on European Sites. The issue is also dealt with in more detail in the report of Mr. Ger Keohane insofar as impacts on the flora of turloughs in the vicinity is concerned and in the reports of Mr. Richard Arnold from an ornithological point of view. My conclusions in relation to those issues, in so far as they may impact on European Sites, are contained in the Appropriate Assessment contained in part 10 of this report.
- 9.26. Ornithology is dealt with in Chapter 8 of the EIS. Mr. Richard Arnold's reports assess the proposed development from ecological and ornithological points of view. Mr. Arnold's reports deal separately with issues arising from an ecological perspective and the assessment of the development as required under the Habitats Directive.
- 9.27. The EIS provides details of the various bird species recorded during the initial survey. Red and amber listed birds are identified in the various tables. Red and amber listed species recorded included Black Headed Gull, Swallow, Starling, Linnet, Snipe, Curlew, House Sparrow, Golden Plover, Starling and Lapwing. Mr Arnold's report indicates that robin, greenfinch and meadow pipit have been added to the endangered lists since the EIS was prepared. Flights of Whooper Swan across the site (12 in total) were recorded. It is noted that four red listed species that are of global conservation concern were recorded i.e. Black Headed Gull, Curlew, Golden Plover and Lapwing.
- 9.28. Mr. Arnold has referred to inadequacies in the initial surveys carried out. He has referred to the absence of reference to the nearby turloughs at Thomas Street and

Cuilleenirwan/Coolagarry. The presence of areas prone to flooding close to some of the proposed turbines also was not referred to. Mr Arnold states at paragraph 3.8.12 of his report that the value of the site for wintering Golden Plover and perhaps Lapwing has not been fully established. The development has potential to cause some disturbance to winter birds using the local waterbodies and foraging in nearby fields. In so far as this may impact on the conservation interests of the European Sites in the area it is taken into account in Mr Arnold's report on AA issues (Appendix No. 4) and in part 10 of this report. I consider that this is the major ornithological issue which arises.

9.29. I do not consider that the impact of the development would be significant in so far as it may disturb nesting or foraging of normal song birds and birds associated with farmland areas such as that in question here. There is an abundance of such bird habitat in the area. The proposal to provide an additional 4 Ha area of un-improved grassland would also help to compensate for any loss although there would be some loss of scrub-land. Mr Arnold has referred to possible displacement, barrier and collision risks for wintering birds using Thomas Street Turlough and travelling between there and Lough Croan. He has also referred to some possible displacement of birds such as Berwicks Swan, Snipe and Curlew from using lands close to Thomas Street Turlough where they have been recorded. (Paragraph 5.8.8 of his ecology report) These are not listed as qualifying interests of the SPAs in the vicinity. I consider, however, that the main issue arising in relation to ornithology and impacts on bird life relates to potential impacts on the qualifying bird species for which the SPAs in the vicinity have been designated. This issue is dealt with, in detail, in my Appropriate Assessment (Part 10 of this report) and in Mr. Arnold's AA report attached as Appendix 4 to this report. My conclusions in relation to potential impact on European Sites having regard to the provisions of the Habitats Directive are set out in the Appropriate Assessment part of this report.

- 9.30. The original EIS contained very little information in relation to the use of the lands by bats and potential impact on bats. The only survey appeared to have been a one-night survey carried out near the groups of trees at the western end of the site. The only bats identified were Leisler's Bat. A more detailed survey was carried out and the results of that were submitted following the request for further information. Dr Tina Aughney who carried out the survey and made recommendations gave evidence at the Oral Hearing. In response to questions Dr Aughney referred to particular turbines which she considered it important that they should be a minimum distance from linear features. (50 metres). She referenced Nos. 3, 4, 6, 8, 9, 10, 11, 12, 13, 14 and 16 in this regard. She recommended that the turbines should be relocated. She also recommended that the cut-in speed for the turbines should be increased from 30 minutes prior to dusk to 30 minutes after dawn (in response to questions she indicated that the reference should be to sunset and sunrise rather than dusk and dawn).
- 9.31. I consider that there is a lack of clarity in relation to the proposal insofar as the mitigation measures proposed by Dr. Aughney are concerned. No plans or drawings have been submitted to indicate the relocation of turbines or the relocation of fences or walls which she recommended as a last resort. It is not clear from the documentation whether or not it is possible to relocate the turbines the minimum distance referred to. (I consider it unlikely due to the general size of fields in the area). In response to questions Dr Aughney accepted that the minimum distance recommended relates to distance from the tip of the blade of the turbine. Applying the formula given in the Natural England guidance, to which Dr Aughney refers in her reports, gives a required set back distance of about 58 metres from the centre of the turbines to linear features 4 metres in height. As indicated in Mr Arnold's report the distance from 1.5 metre high linear features such as the stone walls would be about 55 metres. (Ms. Burke on behalf of the appellants stated that the minimum distance in her calculations was 58/59 metres in accordance with the Natural England

guidelines being used). I note that in the bat report submitted in response to the request for further information Dr. Aughney stated that the increased cut in speed was recommended if the minimum distances were not possible. She further stated that this last recommendation was not suitable for a number of turbines including 6, 9, 10, 12 and 14 due to the presence of Leisler's Bat in the vicinity of those turbines. (In the report on bats contained in the EIS for the Phase 2 development (File 20.244347) Dr Aughney, however, indicates that the relocation of turbines is not a suitable mitigation measure for Leisler's bat as this species flies in the open rather than following linear features. This corresponds with Mr. Arnold's view as set out in Appendix No 1 of his report on ecological issues. -Appendix No 3 to this report-). She further recommended in the report that bat scaring radar devices should be employed at Turbines Nos. 9, 10 and 12 along with increased cut in speeds. She stated however at the Oral Hearing that this technique, which was being researched at Bristol University, had not been proven to be effective.

- 9.32. Having checked the location of a number of the turbines relative to nearby walls and boundaries it appears that the distances given in Table 5.8.1 of the bat survey submitted with the additional information reflect distances from the turbine towers rather than distances from the tip of the blades. The required set back from the centre of the towers is approximately 55/58 metres rather than 50 metres (which is the required set back from the linear feature to the tip of the blades.) according to the guidelines being used. In the circumstances it appears that significant relocation of turbines would be required. Even accepting the figures given in Table 5.8.1, as being the appropriate ones, relocation within the micro-siting of 20 metres would not, in several cases, give the minimum distances recommended by Dr. Aughney. (I also note that one of the turbines recommended for relocation is No. 4. This is one of the turbines in the vicinity of which details of core boreholes were submitted by the applicant on 18 May 2015. If the turbine is relocated the results of the drilling may not be relevant. Such extensive relocation of the turbines would also appear to

require that the geophysical survey or significant parts of it would have to be re-done.)

9.33. I consider that there is confusion in relation to the implementation of mitigation measures relating to the protection of bats. It is also not clear what mitigation measures are required by the planning authority's decision. Condition No. 10 requires that the increased cut-in speed shall apply to all turbines but condition no. 5 requires that all ecological mitigation measures set out in the EIS and in the further information shall be implemented. Having regard to the evidence given by Dr Aughney in response to questions at the Oral Hearing to the effect that the area is not of any particular significance or importance in terms of bat habitats or bat populations and to Mr. Arnolds assessment I do not consider that this issue per se would be sufficient to justify a refusal of planning permission for the proposed development. In the event of permission being granted I consider a condition requiring increased cut-in speeds during times and periods of the year when bats are likely to be flying in the area would be adequate mitigation. The impact with such mitigation would be of no more than local significance. Mr Arnold has pointed out in his report that the cut-in speed may need to be increased to higher levels than contained in the planning authority's decision to take account of the presence of Leisler's bat which fly in higher wind speeds.

9.34. Having regard to the nature of the habitats which exist in the area and to the survey work carried out, although of limited extent as pointed out by Mr. Arnold, I consider that the impact on terrestrial invertebrates and mammals such as foxes, hares, etc. would be of local significance only. I agree with Mr Arnolds conclusions on the extent and significance of any such impacts.

Impact on Geology, Hydrogeology and Hydrology:

9.35. These issues are dealt with in detail in the attached report from Mr. Jer Keohane (Appendix no. 2). Mr. Keohane's report refers to the various submissions made and

sets out his conclusions in relation to the submissions and the adequacy of the information submitted. In my report on the Appropriate Assessment for the purposes of the Habitats Directive I deal in more detail with issues relating to hydrology and hydrogeology and the adequacy of the information submitted in order to allow for conclusive findings in relation to the potential impact on the groundwater regime and consequently the ecology of turloughs in European Sites in the vicinity. These issues have been assessed in Mr. Keohane's report and on the basis of the evidence and arguments submitted I concur with Mr. Keohane's findings.

- 9.36. The fact that the landscape hosts a number of karst features i.e. dolines was recognised in the EIS. The karst nature of the area is the major issue arising in relation to attempting to predict the impacts of the development and in particular its potential impacts on the groundwater regime and what impacts, if any, it may have on turloughs and flooding in the area.
- 9.37. Table 9.6.2.1 of the EIS indicates the results of the excavation of 21 trial pits at various locations on the site. The depths to bedrock are indicated on the table to vary from 0.25 metres at the location of proposed Turbine No. 9 to 2.1 metres at the location of proposed Turbine No. 4. This is referred to in Section 9.6.3 of the EIS. Subsequent investigations cast serious doubts on the accuracy of these findings. The most recent investigations carried out and referred to in the report on hydrogeology/geotechnical aspects of the Phase 1 development dated May, 2015 included boreholes drilled in Phase 1 in late April, 2015. Boreholes were drilled in the locations of Turbines Nos. 4, 5 and the substation. The results indicated dense overburden in the vicinity of Turbine No. 4 to a depth of 12.3 metres. In the vicinity of Turbine No. 5 overburden was encountered to about 20 metres. The depth of overburden at the vicinity of the substation is indicated to be at least 15 metres. These results could be interpreted favourably from the applicant's perspective but they also indicate inadequacies in the original interpretation of the soil and rock profile of the area. The results of the latest boreholes also cast doubts on the

interpretation of the geophysics which were submitted with the response of further information. This is indicated in Mr. Keohane's report. The report of May, 2015 recommends further investigations at the locations of Turbines 2, 13, 14, 15, and 16. This is based on the identification of potential karst features arising from the geophysical investigations. It is concluded, in the report, that there are no obvious concerns relating to any of the proposed turbines locations but the additional investigations are recommended. A detailed geotechnical survey is also recommended. Additional recommendations include the installation of stand pipes at selected boreholes (not identified) and the carrying out of in-situ permeability testing at selected boreholes. A significant amount of additional investigations are recommended. Additional geotechnical investigations and topographic surveys are also recommended for the hardstands, access tracks and spoil management.

9.38. At the Oral Hearing Mr. Kenny on behalf of the applicant recommended a further condition, which it was suggested would further remove the possibility of interference with the groundwater flow pattern. It was recommended that no turbine would be constructed above any karst feature. As stated by Professor Johnston at the Oral Hearing this would be an extremely difficult condition to interpret and with which to ensure compliance. There is also still confusion in relation to the design of foundations for the turbines e.g. statements in the NIS to the effect that turbines would be omitted in the event of a cavity or fissure being identified at the location of the turbine but piled foundations are also recommended in the Jennings O'Donovan report of May, 2015.

9.39. I am in agreement with the findings in Mr. Keohane's report to the effect that adequate investigations on the hydrology and hydrogeology of the site has not been carried out having regard to the level of certainty required in order to allow for permission to be granted having regard to the requirements of the Habitats Directive. Post consent additional investigations and surveys are common in engineering works and are often required by planning conditions. I do not consider, however, that

the level of certainty required pre-consent under the Habitats Directive exists at present in this case for the reasons given in Mr Keohane report where he references the additional investigations which would be best practice in this situation. I accept that foundations can be designed to ensure the stability of the turbines. I consider however that the impact of such designs and of the proposed access tracks etc. on the groundwater flow pattern and on connectivity with the turloughs in the area has not been adequately investigated. The table contained in Mr. Keohane's report indicates potential connectivity between the site of the proposed development and the Four Roads Turlough, Lough Croan Turlough, Thomas Street Turlough, Cuilleenirwan and low lying areas along the Ballyglass Canal/River. Of these Four Roads Turlough and Lough Croan are both SPAs and SACs. Whilst Thomas Street and Cuilleenirwan have not been designated as SACs or SPAs there could be a potential impact on the European Sites in the area due to interference with the ecology of these areas and consequently with bird species for which the European Sites in the vicinity generally have been designated. In the circumstances I consider that due to the absence of the investigations referred to by Mr. Keohane in his report there cannot be adequate certainty that the proposed development would not adversely affect the integrity of European Sites in the vicinity having regard to the requirements of the Habitats Directive.

9.40. I accept Mr. Keohane's conclusion that the investigations carried out by the applicant would generally be adequate and acceptable in the absence of the necessity for the heightened level of certainty required under the provisions of the Habitats Directive. I consider that the development, carried out in compliance with all recommended mitigation measures, would be unlikely to have significant effects on the ground water regime in the area but the investigations carried out do not give the level of certainty required. The additional investigations referred to by Mr Keohane would also help to clarify what, if any, effects the development would have on flooding in

the area as they would lead to a better understanding of the existing hydrological regime.

- 9.41. The site of the development proposed in the current case is not within the source protection area of the Killeglan water supply scheme which is referred to in the submissions and at the Oral Hearing. The proposed development would be unlikely to have any significant effect on the water supply scheme in question. Normal mitigation measures as contained in the EIS and in the additional information submitted would also be adequate to ensure against pollution of any private water supplies outside the site boundaries.
- 9.42. The documentation including the evidence at the Oral Hearing indicates that Turbine No. 6 would be located in or close to the area which was subject to flooding in the early part of 2016. Condition No. 15 of the Planning Authority decision states that construction work on Turbine No. 6 shall take place during the period of May to September only. The condition also states that no discharge of water shall take place into any turlough. It would clearly be possible to construct a turbine at the location of Turbine No. 6. Constructing such in an area prone to flooding might, however, result in the turbine being located very close to wintering water birds which might be attracted to the flooded area. The requirement that no discharge of water shall take place into any turlough is imprecise as it is not clear whether or not the intention is that no direct discharge should take place. Water discharged to ground waters, in parts of the site at least, is likely to end up in one of the turloughs. I would not, however, consider this to be significant if the ground-water recharge of the turloughs is not interfered with to an extent adequate to impact on the integrity of the turlough habitat.

Impacts due to Noise Emissions:

- 9.43. Wind farms by their nature generate noise. The main concern in this case relates to the impact of such noise on residential or other noise sensitive properties in the

vicinity. The documentation indicates that there are 51 habitable houses, either occupied or unoccupied or sites with planning permission for houses, within 1 kilometre of the proposed development.

9.44. The daytime and night-time prevailing background noise levels as indicated on Tables 12.5.1 and 12.5.2 indicate low noise levels particularly during periods of low wind speeds. Prevailing night-time background noise levels at the measured locations are less than 35 dB(A) for wind speeds up to 7 metres per second. There are few measurements over 40 dB(A) at wind speeds up to and including 7 metres per second during the day. The noise assessment carried out for the purposes of the EIS is based on the recommendations contained in the Wind Energy Planning Guidelines of 2006. This states that in general a lower fixed limit of 45 dB(A) or a maximum increase of 5 dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours. It is noted however that in quiet areas use of a margin of 5 dB(A) above background levels at noise sensitive properties is not necessary to offer a reasonable level of protection and may duly restrict wind energy developments. In low noise environments, where background noise is less than 30 dB(A), it is recommended that the daytime level of noise should be limited to an absolute limit within the range of 35 to 40 dB(A). It is also stated in the guidelines that separate limits should apply at night-time and in this regard it is stated that a fixed limit of 43 dB(A) will protect sleep inside properties during the night.

9.45. Tables 12.8.2.1 and 12.8.2.2 contain predictions of the noise levels at the properties where background noise levels were measured at various wind speeds. As the tables contain predictions of the noise from the turbines the tables are identical for day and night. In the assessment it is stated that at all of the five locations the daytime level of 45 dB(A) L_{a90} would not be exceeded but it is noted that there will be some exceedances of the night-time level of 43 dB(A) at houses A and E. As these houses are occupied by landowners in the development it is considered that the

night-time fixed lower level can be increased to 45 dB(A). Comparing table 12.8.2.1 with table 12.5.1, however, indicates background noise levels being increased by more than 5dB(A) at some houses at some wind speeds. Table 12.8.2.3 sets out predicted noise levels for all of the 51 houses within the 1 kilometre distance for wind speed of 7 metres per second. (It is not clear why 7 metres per second was considered to be the critical wind speed as taken account of both day and night the critical wind speed i.e. the wind speed at which the turbine noise differed greatest from the background appears to be 6 metres per second although Table 5 of the technical appendix to Chapter 12 indicates that the critical speed during the day is 7 metres per second). It is concluded on the basis of the predicted noise levels contained in Table 12.8.2.3 that a lower fixed noise level of 43 dB(A) for non-involved houses (based on the night-time criteria set out in the guidelines) and a lower fixed noise level for involved houses of 45 dB(A) are achieved. It is noted that at the house identified as H1 on the noise contour map contained in Chapter 12 that the predicted noise level is in excess of 43 dB(A). The predicted noise levels at Houses H14, H15 and H16 are also in excess of 43 dB(A). All of these houses belong to landowners involved in the development. The Planning Authority's decision would result in the removal of Turbine Nos. 7 and 12 from the development. (These houses were removed on the basis of being less than 500 metres from existing houses). Compliance with this condition would be likely to reduce noise levels at H1, H15 and H16 and probably H14 although the closest turbine to H14 is Turbine 16.

- 9.46. The discussion at the Oral Hearing in relation to whether or not the condition in relation to noise contained in the Roscommon County Council decision could be complied with having regard to the requirement that noise levels should not exceed 45 dB(A) or 5 dB(A) above background noise level was responded to by the applicant's representatives by stating that the standard condition was that the criteria applied was whichever of the two was the greater. Reference was made to the previous Board decision in this regard where such a provision was included. (I note

that the Board's previous decision impose a limit of 43 dB(A) (not 45 dB(A)) or 5 dB(A) above background, whichever is the higher. I would point out that the 2006 Guidelines do not contain a provision that the applicable limit is whichever is the greater. (My reading of the guidelines suggest that the intention was whichever is the lower) There is a separate provision as referred to earlier in relation to low noise environments where background noise is less than 30 dB(A). The circumstances do not arguably apply in the current case where the background noise levels at least during the day are generally above 30 as indicated in Tables 12.5.1 and 12.5.2 although at low night-time wind speeds background levels are below 30. If however one compares the background noise levels given on Table 12.5.1 at a wind speed of 7 metres per second with the predictions given in Table 12.8.2.3 it would appear that in three of the five residences referred to the predicted noise level would be more than 5 dB(A) above the background level (an exceedance of 7.5 dB(A) in two cases and 8.2 dB(A) in another). (The additional information submitted to the planning authority indicates that houses A, B, C, D and E referred to on table 12.5.1 correspond to houses 16, 45, 33, 1 and 14 on table 12.8.2.3 respectively.) The three dwellings in question are indicated to be occupied by involved landowners.

9.47. There was a discussion at the Oral Hearing in relation to the apparent requirement contained in the Renewable Energy Strategy for County Roscommon, which is part of the current development plan, restricting noise levels, at noise sensitive properties in the vicinity of a wind farm, to 40 dB(A). It was argued on behalf of the applicant that this was a mistake or alternatively that the Planning Authority would not be entitled to include such a requirement having regard to the criteria set out in the 2006 Guidelines. It was however stated on behalf of the applicant that if required the wind farm could comply with the level of 40 dB(A) as stated in the Renewable Energy Strategy.

9.48. My overall conclusion in relation to the noise issue is that the development would not significantly infringe on the guidelines although there may be some exceedances

particularly in the case of involved landowners' dwellings. The resultant noise levels would be close to the upper limits acceptable. I also consider that it would be reasonable for the Board to use the departmental guidelines rather than the lower figure set out in the Roscommon Renewable Energy Strategy. (Roscommon County Council was not represented at the Oral Hearing in order to provide comment on the basis for the figure contained in the Renewable Energy Strategy). I consider that the omission of the houses within 500 metres of any dwelling house would also result in reduced noise levels at some noise sensitive properties. (The table contained in Appendix 6.1 of the EIS indicates 3 houses within 500 metres of a turbine). It was argued by the applicant's agent at the Oral Hearing that the requirement to omit the 2 turbines derived from the previous Roscommon County Development Plan. There is however a statement in the Wind Energy Guidelines that 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. This provision is referenced by the planner in his report on the application and appears to form the basis for his recommendation that the two turbines in question i.e. Nos. 7 and 12 be omitted. I do not accordingly concur with the submission on behalf of the applicant that the reason for this condition no longer applies due to the adoption of a new development plan.

- 9.49. The Wind Energy Development Guidelines suggest to me that the lower of 45 dB(A) or a maximum increase of 5 dB(A) above background noise levels should be applied for daytime and a maximum of 43 dB(A) applied for night time. The applicant's submissions at the oral hearing indicate that these noise levels could be complied with. If permission is granted I consider that a condition requiring compliance with the guidelines should be imposed.

Impacts Arising from Shadow Flicker:

- 9.50. The Wind Energy Planning Guidelines 2006 recommend that shadow flicker from wind turbines at neighbouring offices and dwellings within 500 metres should not

exceed 30 hours per year or 30 minutes per day. It is also stated in the guidelines that the potential for shadow flicker is very low at distances greater than 10 times the rotor diameter from a turbine.

9.51. In the assessment carried out by the applicant's consultant contained in the EIS it is stated that one house i.e. H1 would exceed the recommended maximum of 30 hours per year of shadow flicker after a de-rating factor had been applied. It is stated that this house is in the ownership of a landowner involved in the project and that this landowner had provided a letter of consent. (I note that there is reference in the documentation to the omission of turbine No.7 reducing the extent of shadow flicker. Turbine No.7 would be that closest to house No.1 but I do not consider that its omission would be of significant benefit to house No.1 from the perspective of shadow flicker due to its location to the north-east of the house) The calculations indicated that 45 receptors would have less than 15 hours of potential shadow flicker per annum and 6 receptors are predicted to exceed 15 hours per annum (this includes house No.1).

9.52. The shadow flicker assessment has been referred to as a worst case scenario. It is noted however that a de-rating factor was applied in order to exclude parts of the year when there is insufficient sunlight for shadow flicker to occur and downtime for the turbines. In response to a question at the Oral Hearing it was stated that if the de-rating factors referred to in the EIS had not been factored into the calculations the number of houses in the current development i.e. the Phase 1 of the development where the 30 hours per year shadow flicker restriction set out in the guidelines would be exceeded would be 32. It was stated however that monitors can be built into the turbines in order to ensure compliance with Condition 13 of the Roscommon County Council decision which required compliance with the figures set out in the 2006 Guidelines. It was stated that both the hourly and daily restriction figures given can be monitored and complied with.

9.53. In the event of the development being otherwise acceptable I consider that the issue of shadow flicker can be adequately controlled by a condition such as Condition No. 13 of the decision of Roscommon County Council. I do not consider that a refusal of planning permission would be warranted on the basis of loss of residential amenity arising from shadow flicker.

Impact on Archaeological, Architectural and Cultural Heritage:

9.54. This issue is dealt with in Chapter 14 of the EIS.

9.55. The main issue arising relates to the impact of the development on sites of archaeological interest located both within the overall landholdings identified on the application and in close proximity to these lands. There are a number of archaeological sites within the landholding and in close proximity of the proposed turbines. These sites have been identified in the Record of Monuments and Places and are identified and referred to in Chapter 18. The sites in close proximity to the proposed turbines are generally ringforts or cashels. The documentation indicates that there are some souterrains associated with some of the ringforts although none of these were evident on inspection. The ringforts within the lands and in close proximity to the proposed turbines are generally quite low in height with external banks approximately 1 metre to 1.5 metres in height. The banks are generally of earth with some stone intermingled within the earth banks. The ringfort at Cronin identified in the documentation as a ringfort (site 047-009) which is shown on the photomontage from viewpoint AV1 is one of the higher of the archaeological features. There are very good views available outwards from this feature and the site of the development proposed on File Ref. PL20.244347 can be clearly seen from this location. The ringforts are not prominent features in the landscape and cannot generally be seen from public vantage points. There is no public access to the ringforts. The documentation also indicates a number of field systems which have been identified in the Record of Monuments and Places within the overall land

holding. These are generally located in partly overgrown scrubland in the vicinity of the proposed Turbine Nos. 8 and 9.

- 9.56. Seven photomontages have been presented to indicate the potential impact of some turbines on the setting of the sites of archaeological interest and in particular on the ringforts. My inspection and the photomontages indicate that there would be a significant impact on the setting of the archaeological sites. I consider that the impact would be greater than an initial viewing of the photomontages would indicate due to the fact that on the photomontages some of the wind turbines in close proximity to the features are only partially visible. For example, on viewpoint AV2 the photomontage indicates the base of Turbine No. 14 which would be in relative close proximity to a ringfort (0447-01401). In views from the ringfort this turbine would be very dominant. Similarly, I consider that in viewpoint AV3 Turbine No. 8 located close to the extreme right of the photomontage would be a very dominant feature. On viewpoint AV4 the nearby Turbine No. 9 located in the centre of the photomontage would be very dominant.
- 9.57. None of the actual archaeological monuments are located within the land-take of the proposed development. This arises because the land-take is confined to the immediate location of the access roads and the turbines. The monuments however would be in very close proximity to the turbines, access road etc. (The proximity of turbines to archaeological sites and the abundance of such sites in close proximity can best be seen on the aerial photograph submitted by Mr. Thomas Burke on 22 December 2011). Having regard to the visual impact of the turbines on the sites of archaeological interest I consider that the statement that there will be a temporary and moderate visual impact on these archaeological sites contained in the EIS is an understatement of the impact. I consider that it would be more reasonable to refer to a long term significant visual impact on the archaeological sites in close proximity. I also consider that due to the close proximity of the monuments to the turbines the

noise impact would be significant in that there would be quite a significant noise level in the vicinity of some of the archaeological remains.

9.58. I consider that there will be a significant impact on the setting of the archaeological monuments. Considering however that the monuments in question do not impact on the general landscape of the area, that such features are quite common in the wider area and that there is no public access currently available to any of the monuments, I do not consider that planning permission should necessarily be refused because of the impact on the archaeological monuments.

9.59. It is noted in the current County Roscommon Development Plan that to date over 4,400 recorded monuments have been identified in County Roscommon. It is noted that perhaps the most frequently occurring monument found throughout the county is the ringfort. Policy 6.9 of the Plan is to protect the archaeological heritage of the county from damage. Objective 6.21 is to secure the preservation i.e. preservation in situ or at a minimum preservation by record of all archaeological monuments included in the Record of Monuments and Places. Objective 6.22 is to ensure that any development either above or below ground within the vicinity of a site of archaeological interest shall not be detrimental to the character of the archaeological site or its setting. Having regard to the number of sites contained in the Record of Monuments and Places in the county and to the relatively large area over which any wind farm would be spread I consider that it is almost inevitable that any wind farm development in the county would have some impact on the setting of sites of archaeological interest. Having regard to the nature of the sites in the vicinity of the development proposed in the current case, the lack of public access and the fact that the sites in question are not significant features in the landscape and do not contribute significantly or at all to the local economy I consider that the impact of the proposed development on the setting of the archaeological sites would not of itself justify refusal of planning permission having regard to other material considerations. I consider however that if permission is granted conditions would be required in

relation to additional pre-construction archaeological investigations and archaeological supervision of all construction works.

- 9.60. The applicant proposes an archaeological walkway through the wind farm. There would be notice boards on which information would be available in relation to the archaeological sites. It was clarified at the Oral Hearing that the walkway is not intended to provide access to the sites themselves but would be confined to the wind farm access track. This would provide some measure of compensation for damage to the setting of the archaeological monuments and may result in some additional economic benefit to the area although I consider that having regard to the noise generated by the turbines and the visual impact when walking beneath or in very close proximity to the turbines the archaeological walkway is unlikely to be a very attractive recreational or educational experience.
- 9.61. There are no protected structures in the immediate vicinity of the site to the proposed development. Table 14.6.1 of the EIS lists 12 protected structures within a 5 kilometre radius of the site. Only two of these are located within 2.5 kilometres of the site. The two in question are a church at Thomas Street/ Dysart approximately 1.5 kilometres away and a vernacular house at Cornalee Curraghboy approximately 1 kilometre from the site. Having regard to the distances of the proposed development from the protected structures I consider that any impact on the setting of protected structures would be minor to negligible.
- 9.62. I note that on page 40 of Chapter 15 dealing with the issue of landscape and visual assessment it is stated that in relation to the archaeological features any sense of heritage which currently exists is likely to be significantly reduced. I accept that this relates to an assessment of the overall visual impact of the development and the relevant paragraph goes on to state that the archaeological features do not contribute significantly to the existing landscape character other than perhaps to the occasional discerning viewer. I also accept there are not any apparent physical

connections or visual links between the various archaeological monuments which would be interrupted by the proposed wind farm or its associated infrastructure. I would however consider the collective aesthetic impact on the archaeological sites to be major adverse rather than moderate adverse as stated in the consideration of aesthetic impact in the landscape and visual assessment (Chapter 15).

9.63. It has been argued strongly in submissions that the proposed development would be injurious to the setting of the national monument and proposed UNESCO Heritage Site at Clonmacnoise Monastery. That site is located at a distance of approximately 23 kilometres from the wind farm. Views northwards from this location are over almost flat lands with no prominent high points or hills. The tops of the turbines would be visible in distant views. I do not consider, however, having regard to the distance and the nature of the landscape, that the proposed wind farm would have any significant effect on the setting of this national monument. The photomontage KV1 illustrates the view and the location of the wind farm in that view. I consider that it would have been better if a photomontage had been prepared from a location where the existing building did not obstruct the view of part of the wind farm. I do not consider, however, that there would be any significant impact on the setting of Clonmannoise monastic settlement.

Impact on Landscape and on Visual Amenity:

9.64. The issue of impact on landscape and visual amenity is dealt with in Chapter 15 of the EIS. A number of photomontages were submitted with the EIS to illustrate views from various locations with the wind farm in place. In addition to the photomontages submitted with the EIS additional photomontages including photomontages from houses within 700 metres of the wind farm were submitted with the response to the request for additional information. Additional photomontages indicating cumulative effects between the development proposed in the current application and that proposed in application Appeal Ref. 20.244347 were submitted with that application.

The parties have been informed that the Board would have regard to the entirety of the documentation insofar as it is relevant to considering cumulative impacts.

- 9.65. The landform in the area as described in part 15.5.2.1 of the EIS is generally flat to mildly undulating with occasional isolated hills or clusters of hills. The immediate area is relatively flat with a ridge at the location where the wind farm is proposed. The ground level dips down relatively gently from this ridgeline towards the R363 to the south-west and towards Lough Croan to the north-east. There is some higher ground to the north, close to the R357 north of Four Roads, and the nearest high ground towards the south-east is the site of the development proposed on the application referred to on File Ref. 20.244347. The Ballyglass Canal/River drains a low-lying area between the ridge where the current proposal would be located and the site of the development referred to on File Ref. 20.244347. The predominant land use in the area is farming with the bulk of the lands being in grassland. There is very little tillage in the area at present.
- 9.66. The landscape in the area is not designated of any particular or special scenic amenity value either nationally or in the County Development Plan. It is indicated to be of moderate value in the County Roscommon Landscape Character Assessment and Renewable Energy Spatial Strategy. The area is indicated as falling within the most favoured areas for wind farms in the Renewable Energy Strategy although it is not within any of the 6 areas identified with particular potential for wind farms in the county development plan. In the Landscape Character Assessment for County Roscommon, which forms part of the development plan the area is indicated within Landscape Character Area 34 i.e. Lough Funshinagh stone wall grasslands and esker ridges. There is a large area of South Roscommon in this landscape character area. The EIS notes that this landscape character area is described as “rolling stonewalled grassland landscape with a distinctive esker area to the south”.

- 9.67. In the EIS comparison is made between the landscape of the area and that described as “hilly and flat farmland” in the Wind Energy Development Guidelines 2006. The recommendations for these areas in the guidelines state that a location on ridges and plateaus is preferred and elevated locations are more likely to achieve optimum aesthetic effect. The optimum spacing pattern is likely to be regular respecting the field pattern. The optimum layout is indicated to be linear. In relation to height it is stated that turbines will tend not to be tall but the more undulating the topography the greater the acceptability of an uneven profile. In relation to cumulative effects it is stated that the visibility of two or more wind energy developments is usually acceptable.
- 9.68. Apart from the siting and design criteria referred to above, which are listed in the EIS, the Wind Energy Guidelines also state that in hilly and flat farmland it is important that wind energy development is never perceived to visually dominate. It is also stated that sufficient distance should be maintained from farmsteads, houses and centres of population in order to ensure that wind energy developments do not visually dominate them. It is also stated that the spatial extent can be expected to be quite limited in response to the scale of fields and topographical features such as hills and knolls.
- 9.69. Having regard to the landscape character of the area and to the lack of any specific designation I consider that the development proposed with its fairly regular three rows of parallel turbines running along the ridge would not significantly detract from the landscape character of the area although I have reservations about the visual impact due to the extent to which the turbines would be dominant features in the landscape particularly when viewed from local houses and settlements.
- 9.70. I consider that the area of greatest concern in relation to visual dominance relates to areas within a 5 kilometre radius of the site of the proposed development. Due to the nature of the landscape and topography I do not consider that the wind farm will be

dominant in views outside this area. I consider that this is borne out by the photomontages submitted. On the approach from the west the wind farm will become visually significant on leaving Ballyforan as indicated in the photomontage from Point CP4. The wind farm is also becoming a significant element in the landscape on the approach from the south from just outside the 5 kilometre radius as indicated in the photomontage from Point LC7. From closer in and in particular from the viewpoints on the road network which surrounds the site e.g. LC3, 4, 5 and 6 the wind farm would be a dominant element in the landscape. These viewpoints are however in very close proximity to the wind farm. The viewpoints are at distances of close to 1 kilometre from the wind farm. In those views the wind farm is probably more dominant in LC6 i.e. from close to the crossroads at Dysart than from LC4 although LC4 is closer to the wind farm due to the fact that wind farm is at a higher level than LC6. (LC4 is a view from the R357 from just north of the junction of the proposed access off the R357). It is clear that the wind farm will have very significant impact on the landscape in the views from the surrounding road network. It would also have a significant impact on views from local residential properties as indicated in the additional photomontages submitted in response to the request for further information. These photomontages indicate that the precise impact and the extent of visual dominance of the wind turbines depends on the precise location from which the wind farm is viewed and the extent of local screening or vegetation. The impact of the layout on the visual appearance of the wind farm is also dependant on the angle of view as the fairly regular layout is not apparent on many of the photomontages due to the angle of view.

- 9.71. I consider that the wind farm would have a significant impact on views from the local road network and residential properties located on this road network and in many cases the wind farm would be the dominant element in the landscape and in the views available. I consider, however, that on balance the impact would not be such as to justify a refusal of planning permission. In this regard I consider that having

regard to the density of development in the rural areas of County Roscommon, it would be extremely difficult to find a location for a wind farm where the wind farm would not be a dominant element in the landscape or in views from particular locations and residential properties. It is noted in the Renewable Energy Strategy that there are few locations in the county where there would not be a house within 400 metres. In the circumstances I consider that although it is marginally balanced judgement the wind farm proposed would be acceptable from the point of view of impact on the landscape and impact on visual amenity.

- 9.72. I note the photomontages of the two alternative forms of development submitted as Figure 1 alternative layouts photomontage in the response to the request for further information. The photomontage in this case reflects the view from the same location as LC6 of the original figures presented with the EIS. I consider that the arrangement proposed with the higher turbines with a lesser number of turbines is more acceptable from a visual perspective.
- 9.73. In my visual assessment I have had regard to the fact that whilst the turbines proposed are tall the scale of the landscape is also large with broad open views being available across the landscape. I consider that this compensates in scale terms for the fact that individual elements within the landscape e.g. the size of fields may be relatively small although as previously referred to they are not exceptionally small in this case and are relatively large by west of Ireland standards. The view from vantage point LC6 previously referred to demonstrates this. This view is similar to that which is available from the R363 northwards towards the site of the proposed development as one travels from Ballyforan past Dysart Crossroads towards Brideswell and Athlone.
- 9.74. I have previously commented on the fact that some of the photomontages are based on photographs taken at locations and indicating views where local screening in the form of buildings or vegetation is available. I accept that the screening helps to

minimise the overall visual impact and dominance of the turbines. Overall however I consider that the photomontages give a reasonable representation of the proposed development bearing in mind that more open views are available from other locations. It must also be borne in mind that there is screening and restriction on views from some locations and that photomontages all based on open views towards the site would also be somewhat misleading. They would, however, give a better impression of the worst case dominant effect of the proposed development.

9.75. The current County Roscommon Development Plan does not contain any revisions or changes to scenic routes or designated scenic views from the plan which was current when Roscommon County Council made its decision. These are shown in the landscape character assessment document which forms part of the plan. The most relevant views and scenic route are V20 and V22 and Scenic Route R8 located some distance away to the north-east. The main views from V20 and R8 are views towards Lough Ree to the east. The view from V20 is a view across Lough Funshinagh. Whilst the wind turbines would be visible in the distance from this viewpoint they would not significantly interfere with the view although the turbines would be visible as can be seen on photomontage from view-point DR4 (Figure 7 of the photomontages). The viewing point is at a distance of almost 8 kilometres from the nearest turbine. The view in question is also only available from a short section of a minor county road.

9.76. Cumulative impacts of the proposed development when seen in conjunction with the development proposed in the application and the appeal referred to on File Ref. PL20.244347 can be assessed to some extent from the photomontages submitted with the application on the latter file. Some of the viewpoints used for the two applications are similar. When travelling along the R363 the cumulative effect would generally be a consecutive one with the length of road on which turbines are visible on either side being extended. The 2 wind farms would be visible on different sides of the road in views from the R363. When travelling along the R357 the wind farms

would be visible on the same side i.e. the east side of the road and again the impact of the two schemes would be through consecutively extending the length of road on which wind turbines would be significant elements in the views to the east. Both wind farms would also be visible from many locations. By occupying the higher lands on each side of the R363 the wind farms would dominate the landscape in the local area. In the circumstances I consider that whilst one of the two developments might be acceptable on its own both schemes together would be unacceptable as the area would become a landscape dominated by turbines. From a landscape perspective I consider that the application referred to on File Ref. PL20.244347 is the more acceptable. I consider that if permission is granted for that development permission should be refused for the development referred to on File Ref. 20.244346 (The application referred to in this report) although the development on its own could be permitted on landscape and visual amenity grounds.

- 9.77. Some of the photomontages presented with the two applications are from similar locations. For example, photomontage from location LC1 on File Ref. PL20.244346 is similar to the location of the photomontage from vantage point MR3 on File Ref. PL20.244347. The latter photomontage shows the two wind farms with one located to the rear of the other. (The view is from a location to the north of both sites) I consider that the additional clutter and extent of the turbines resulting from the two wind farms cumulatively would have a significant adverse visual impact. On approaching the site from the south the photomontage from point CP6 (Figure 13) on the current application indicates the view from the vicinity of Taghmaconnell. The view from point CP7 (Figure 14) on the application referred to on File Ref. 20.244347 indicates the view from the same location with the two wind farms indicated in the photomontage. Whilst the turbines proposed in the current application are at longer distance and look relatively small scale on the photomontage they add to the clutter of wind turbines in the overall area. These 2 examples give an indication of the overall impact of the two developments from various locations in the vicinity (I noted

on inspection that the viewpoints CP6 (File 20.244346) and CP7 (File 20.244347) are on a side road rather than on the main road leading from Ballinasloe to Taghmaconnell). Photomontage DR4 previously referred to in relation to the current application which is a view from the designated scenic viewpoint east of Lough Funshinagh can be compared with the view on photomontage from viewpoint DR4 (similar number) on File Ref. 20.244347. I consider that the presence of a second wind farm in such close proximity would have a significant effect on the landscape. I note, in this regard, that Objective 7.37 of the County Roscommon Development Plan is to seek to minimise the visual impact of development on all landscape character areas irrespective of the assigned landscape value. If permission is being granted I consider that only one of the wind farms should be permitted on landscape and visual amenity grounds.

Impact on Air Quality and Climate Change:

- 9.78. This issue is dealt with in Chapter 16 of the EIS.
- 9.79. The proposed development would be located in a relatively remote rural area. There is no reason to suspect that the air quality in the area is not good or that there are any exceedances of specified air quality standards. The only emissions into the atmosphere likely to arise from the proposed development would be dust emissions during the construction phase of the development. A dust minimisation plan is contained in Appendix 16.2 of the EIS. The minimisation plan in question contains standard mitigation measures to suppress dust during a construction project of this nature. I do not consider that the proposed development would give rise to any significant problems in terms of local air quality or emissions to the atmosphere.
- 9.80. By generating electricity from renewable source such as wind the proposed development would reduce the requirement to generate electricity from fossil fuels and so would contribute to a reduction of the emission of greenhouse gases into the atmosphere. This would be a positive impact of the proposed development. The

greenhouse gas benefits from the proposed development are set out in Table 16.9.2 of the EIS. The total annual savings in tonnes CO₂ equivalent given in Table 16.9.2 is 58,301. It is stated however on page 121 of the response to the request for additional information that the saving would be the equivalent of 69,957 tonnes per annum of CO₂. It was stated in response to questions at the Oral Hearing that the difference arises from employing different methods of calculation in terms of the fossil fuel mix used for electricity generation. The proposed development would, in either calculation, have a positive impact in terms of reducing CO₂ emissions into the atmosphere. I have reservations however about the equivalent carbon emission savings referred to in Table 26 of the response to the request for additional information. It is stated that the saving would be equivalent to not using 12,813 cars or light trucks per annum. This is multiplied by 25 to give the equivalent savings over the 25-year life span of the proposed development. I consider that there is no logical reason for multiplying the number of cars and light trucks not used per annum by 25 because the saving would be equal to a similar number of cars and light trucks used during the 25 years. The calculations for the acreage of forest absorbing carbon also multiplies the per annum acreage by 25. Whilst there is a positive impact in the terms of carbon emissions I consider that these have been overstated in the documentation.

Impact on Telecommunications and Aviation Radar Systems:

9.81. This issue is dealt with in Chapter 17 of the EIS. The documentation indicates that the applicant has signed or is willing to sign a protocol agreement with RTE in relation to any potential interference with television reception in the area. It would appear that this issue is now not as significant having regard to the transfer of television transmission to a digital rather than an analogue system. The documentation and consultations indicate that there are no particular problems likely to arise due to interference with telecommunications. Any problems likely to arise are amenable to technical solutions. The Irish Aviation Authority has not raised any

objection in principle to the proposed development from the point of view of air traffic safety.

Transport and Road Access Issues:

- 9.82. The haul route for abnormal loads which would arise during the construction phase of the development would be from the M6 along Regional Road 362, Regional Road 363 to the junction with Regional Road 357 at Dysart. Traffic would turn right at the junction and travel along the Regional Road 357 as far as the access proposed. Details of the junction of the proposed access road with the Regional Road 357 have been submitted and clarified in the additional information. These details are acceptable to the Planning Authority. Condition no. 19 of the planning authority's decision requires the payment of 4000 euro per pole for setting back any utility poles at the location of the proposed junction. I noted on inspection that there are no utility poles on the east side of the R357 at this location.
- 9.83. Subject to the agreement of a Transport Management Plan for the construction phase of the development and particularly for the transport of abnormal loads with the Road Authority and compliance with the agreed plan I consider that the access arrangements proposed are reasonable and acceptable. Some damage could be caused to the road network but I consider that this can be adequately covered by conditions such as those imposed in the Planning Authority decision. There would also be some inconvenience to local traffic during the construction phase of the development. This phase however would be short term and there should be no long term adverse impact on the road network. The necessity for a Transport Management Plan for abnormal loads is a common requirement for developments of this nature and it would be particular required in this case where, at one location it will be necessary for traffic to travel on the right hand side of the road and in an anti-clockwise direction on one of the roundabouts. This manoeuvre is indicated on Figure 7 of Chapter 18 of the EIS.

Impact of Connection to the National Grid:

- 9.84. It is stated in the EIS that the wind farm would be connected to the national grid from the switch-room proposed in the townland of Tullyneeny. It is stated that there are a number of potential grid connection points but it is anticipated that the proposed connection will be to the existing 110kV substation at Monksland in Athlone via a 38kV connection. An application for a grid connection was made in 2008 and an offer from EirGrid is awaited. It was confirmed at the Oral Hearing that this remains the situation. It is stated in the EIS that the connection to the national grid will be carried out by EirGrid and will be subject to a separate planning application. It is stated in the documentation that a contestable connection agreement would be applied for. This would allow the applicant to construct a connection to the national grid. It is stated that it is the applicant's intention that the connection to the national grid would be by underground cable.
- 9.85. On 18th May, 2015 the applicant submitted supplementary EIS and NIS information to the Board in relation to the grid infrastructure and the connection thereto. Reference is made in this submission to the High Court judgement in the O'Grianna versus An Bord Pleanála case where it was held that the grid connection could not be separated from the remainder of a project and that the cumulative effects of the wind farm and the grid connection must be assessed in order to comply with the EIA Directive.
- 9.86. The details submitted on 18th May, 2015 indicate a connection from the switch room at the eastern end of the site along County Road L7602, Regional Road R363 and Regional Road R362 to the 110kV substation at Monksland in Athlone. The cable would be laid in a duct along the public road. The road would be backfilled and reinstated. The cable trench would be approximately 1 metre deep and 500 millimetres wide. It is stated that the duct would be constructed in agreement with the

local authority including a bond for reinstatement works. The construction phase of this development would be 9 to 12 months.

- 9.87. In response to questions from the inspector the representatives of the applicant stated at the Oral Hearing that in the event of both Phase 1 and Phase 2 of the overall development being granted planning permission i.e. the current application and that referred to in File Ref. 20.244347, the switch-room in Phase 1 would connect to the substation in Phase 2 via a 38kV underground cable. If only Phase 1 is granted it would connect directly to the national grid along the public road to Monksland by means of a 38kV underground cable. It was also stated at the Oral Hearing that the connection to the national grid would not be along the section of the R362 distributor road where the roundabouts are located close to the M6. The route would follow the old road (L2047) to access the 110kV substation at Monksland. An enlarged map of the route within the built-up area was submitted at the oral hearing.
- 9.88. The route of the proposed cable connection along the public road does not adjoin any designated European Site of conservation interest. The Action Area Plan for Bellinamullia/Monksland, the relevant built up area, does not indicate any protected structure or site listed on the Record of Monuments and Places in close proximity to the road. The area plan does indicate some buildings and features of interest close to the road in Bellinamullia. I do not consider that the works proposed would interfere with these buildings and features. The construction works involved, including excavations, laying of cables and backfilling would give rise to some inconvenience for traffic and would have to be carried out in conjunction with the agreement of the local authority. I do not consider however that the connection, as proposed, would give rise to any significant effects on the environment.
- 9.89. In Part 3 of the supplementary information submitted in May, 2015 the applicants indicate that three options for connection to the national grid were considered. One of the options considered was an overhead connection to Monksland substation by

means of a 38kV/100kV powerline. It was considered not possible to follow this alternative for various reasons including that the line would be required to pass close to a number of designated European Sites and may have impacts on the environment including in respect of landscape and visual impact. Presumably it was envisaged that such an overhead line would take a more direct route to Athlone rather than following the line of the public road. I agree with the conclusion that the underground cable indicated would have less impact on the environment. I consider that the most significant impacts would arise during the construction phase.

9.90. Opponents of the development have questioned the excavation of a trench and laying of a cable particularly along the L7602. This road has been subject to flooding on a number of occasions in the past and its level has been raised on a number of occasions by the local authority. I accept that having regard to the raised nature of the road it could be difficult to lay the cable as proposed. This would obviously have to be done in conjunction with the local authority. I do not however consider that this would be either impossible or impractical and I do not consider that it would give rise to any particular problems in relation to flooding or change in the hydrology of the area. No response to the supplementary information has been received from the Planning Authority and unfortunately there was no representative of the Planning Authority present at the Oral Hearing in order to give their views on the proposal. The applicant in a response dated 8th December, 2015 to the appellants' observations that the grid connection linking the proposed development with the proposed Seven Hills Phase 2 development had not carried out a scientific assessment of the excavation and its potential impact on hydrogeology stated that it is proposed to use clay bunds at intervals of approximately 20 metres along the cable trench to prevent the trenches potentially becoming preferential drainage pathways. It was clarified at the Oral Hearing that this was a reference to cable trenches within the site and that it is not intended to provide such clay bunds along the public road. I consider that it would be necessary for the details of the

construction particularly on this elevated narrow road to be agreed with the local authority.

9.91. The opponents of the development have argued that it is likely that the connection to the national grid would be by means of overhead lines and pylons. The proposal as submitted for assessment as part of the EIS is for an underground connection. In the event of a modification or alternative to this being proposed the developer would have to ensure that there is no breach of the requirements of the E.U.EIA Directive. There are also instances of underground cables connecting wind farms to the national grid over longer distances than the approximate 15 kilometres proposed in the current case.

Interaction of Impacts:

9.92. This issue is dealt with in Chapter 9 of the EIS.

9.93. The major interactions arise from the various issues which might impact on human beings. These are identified in Chapter 19 as noise, shadow flicker, landscape and visual impact, electromagnetic interference and traffic impacts. Table 19.1.1 contains a matrix of interactions. The chapter also sets out the major conclusions of the EIS in relation to the issues covered.

9.94. I consider that the second major interaction likely to arise relates to the impacts on flora and fauna due to impacts on hydrology. This issue is dealt with in more detail in the reports of Mr. Keohane and Mr. Arnold and in my Appropriate Assessment. As stated in Mr. Keohane's report, with which I agree, there is still inadequate investigation and information in relation to hydrogeology and hydrology to fully assess the impacts on the flora of the turloughs in the vicinity. It is noted in the EIS that the filling mechanisms and catchments of these turloughs are not fully understood as tracer testing had not been undertaken but it was assumed that water enters the topographic depressions via both rainfall and groundwater. It is submitted

that the distances between the proposed turbine locations and the turloughs are such as to eliminate the risk of any interaction or impact. The consultant's report indicates that adequate investigations have not been carried out in order to scientifically state that the risk is eliminated.

- 9.95. The interaction between landscape and visual impact and archaeology is addressed in Part 19.8 of the EIS. The conclusion in the EIS is that the significance of landscape impact in relation to the archaeological features is moderate. From my assessment above it is clear that I consider the impact to be greater than this.

Consideration of Alternatives:

- 9.96. This issue is dealt with in Chapter 4 of the EIS. Some alternatives in relation to the grid connection were also considered as previously noted.
- 9.97. Part 4.4 of the EIS indicates that alternative locations, uses and designs were considered. There is reference in the EIS to sites in the vicinity including that referred to in the appeal on File Ref. 20.244347 being considered. A site north of Roscommon and another further south from the current proposals near Corkip Lake were considered. Sites were discounted on the basis of closeness to European Sites or bog-lands and distance from Athlone. The EIS contains brief reasons for discounting sites within the six areas referred to in the landscape character assessment for Roscommon as being potentially appropriate locations. The highland area on the east side of Lough Funshinagh was deemed to be unsuitable due to the proximity to Lough Funshinagh SAC and to the landscape value of the area. (This is the closest of the six locations referred to in the landscape character assessment). Lough Funshinagh and Lough Ree are both European sites. Lands along the west side of Lough Ree are indicated as not being suitable for wind farms in the Roscommon Renewable Energy Strategy and Scenic Route R8 and Viewpoint V22 are located to the east of Lough Funshinagh. In the circumstances I can appreciate the applicant's reluctance to pursue a site in the high ground to the east of Lough

Funshinagh, which is indicated to be a potentially appropriate location in the landscape character assessment. The applicant's consideration of alternative uses as referred to in 4.4.2 of the EIS is somewhat vague as it seems to be suggesting that any alternative use other than agriculture is unlikely and that a wind farm could co-exist with agricultural developments. While this, in itself, is reasonable it does not appear to comprise of a realistic alternative considered in terms of the application. The EIS indicates that some alternative turbine types were considered and alternative layouts were considered during the course of developing the application in order to provide greater distances from sites of archaeological interest. Figure 1 of the photomontages submitted with the response to the request for further information also indicates an alternative turbine height with increased number of turbines in order to have the same energy output.

- 9.98. The Directive is somewhat vague in relation to the requirement to consider alternatives although such a requirement is contained therein. A formal scoping of the EIS might have given greater guidance in relation to what alternatives should have been considered. Such a formal scoping was not carried out in this case. In the absence of such and in the absence of any specific requests from the Planning Authority I consider that the EIS contains a reasonable and adequate consideration of alternatives for the purposes of complying with the Directive.

Compliance of EIS with Legal Requirements:

- 9.99. The requirement to submit an environmental impact statement with an application such as that proposed results from Ireland's transposition of the European Union Directive on EIA. The Directive sets out a requirement that a developer should submit specified information with an application. I consider that it is reasonable to interpret the requirement as including the original EIS, the response to the request for further information and all subsequent submissions containing additional information in relation to the environment and potential impacts of the development

on the environment. The relevant Directive as applying to this application is Directive 2011/92/EU which was a codification of the directive as of the 13th December, 2011. Article 5 of that directive requires Member States to adopt the necessary measures to ensure that the developer provides in an appropriate form the information specified in Annex IV insofar as the Member State considers the information is relevant to a given stage in the consent procedure, to the specific characteristics of the particular project and to the environmental features likely to be affected. The information to be submitted must also be that which the Member State considers a developer may reasonably be required to supply having regard, inter alia, to current knowledge and methods of assessment.

9.100. In general, I consider that the applicant has complied with the requirements of the European Directive on environmental impact assessment and the Irish Regulations implementing same (Articles 94 and Schedule 6 of the regulations) in that the EIS and subsequent submissions supply the relevant information and assesses the likely impact of the development on the various relevant environmental factors. The EIS does not refer specifically to material assets which are referenced in Annex IV of the Directive. It does, however, refer to impact on architectural and archaeological heritage which are included in material assets in Annex IV of the Directive. It also refers to impacts on other material assets such as roads, telecommunication facilities and houses. I consider that the relevant environmental factors are adequately covered. With the exception of issues relating to the need for Appropriate Assessment arising under the Habitats Directive and the level of information and certainty required in order to allow for consent to be granted as set out in Article 6(3) of that Directive the EIS and the subsequent information submitted is adequate for determining the application.

9.101. The Appropriate Assessment requirement is considered separately. In this particular case I consider that the level of information and investigation submitted is not adequate to give the certainty necessary to allow consent to be granted. The issues

on which there is uncertainty and on which further investigations would be necessary are set out in detail in the reports of Mr. Keohane and Mr. Arnold. They are also referred to in summary in my Appropriate Assessment which is contained in part 10 of this report.

10.0 Appropriate Assessment:

- 10.1. This section of the report should be read in conjunction with Mr. Keohane's report attached as Appendix no.2 and Mr Arnold's AA report attached as Appendix no. 4. My comments and conclusions are, to a large extent, based on the expert opinions of Mr. Keohane and Mr. Arnold.
- 10.2. Article 6(3) of the EU Habitat's Directive requires that any project not directly connected to or necessary for the management of a European Site but which is likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site's conservation objectives. The paragraph states that (subject to the provisions of paragraph 4) the competent authority shall agree to the project only having ascertained that it will not adversely the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.
- 10.3. Table 1 of the Natura Impact Statement and Appropriate Assessment submitted as Appendix 7.2 of the EIS identifies 11 Natura 2000 sites within 15 KM of the site (9 SACs and 2 SPAs) This information has been updated and the Report to inform the Appropriate Assessment process submitted to Roscommon Co. Council on 8th June 2012 identifies 9 SACs and 4 SPAs i.e. a total of 13 sites in the 15KM radius. (2 sites were designated as SPAs in the period between the lodgement of the application and the 8th June 2012). 3 of the European Sites in question are both SACs and SPAs. The location of the sites in question is indicated on Figures 2 and 3 of the June 2012 report. The sites, apart from the most recently designated SPAs are also

indicated on drawing no. CMP/E/5203-1/002 to scale 1:75000 submitted with the planning application. A number of Natural Heritage Areas and proposed Natural Heritage Areas are also indicated on that drawing. These include a number of bogs in County Galway on the west side of the River Suck.

- 10.4. The proposed development is clearly not necessary or required for the management of the European Sites. A screening for a full Appropriate Assessment is accordingly necessary.
- 10.5. The closest European Site to the site of the proposed development is Lough Croan SAC and SPA. This site is stated to be 1.1 kilometres from the nearest turbine. The next closest European Site is Four Roads Turlough at a distance of 2.5 kilometres approximately from the nearest turbine. The closest proposed Natural Heritage Area, which is not a European Site, is Feacle Turlough located approximately 5 kilometres to the south-east of the site. In addition to the sites referred to above there are a number of non-designated turloughs in close proximity to the proposed development. The closest of these is Thomas Street or Dysart Turlough located approximately 900 metres to the south of the nearest turbine. Cuilleenirwan Turlough/Coolagarry Lough is located about 1.5 kilometres to the east of the nearest turbine. Some of the areas within the landholdings involved in the application and in close proximity to turbines 5 and 6 are also prone to periodic flooding as referred to in Mr. Arnold's report. I refer to the non Natura 2000 Sites as these could be of some significance in terms of use by the bird species associated with and which are qualifying interests of the Natura 2000 sites.
- 10.6. Mr. Keohane's report indicates that the site of the proposed development is potentially hydrologically connected to Lough Croan SAC, Four Roads Turlough SAC and possibly Lisduff Turlough SAC although the latter is unclear. Mr Keohane also indicates connectivity with Thomas Street Turlough, Cuilleenirwan Turlough, with the callows of the Ballyglass River and with the River Suck Callows (an SPA).

- 10.7. Having regard to the interconnectivity referred to above and to the excavations and other works required to construct the wind farm I consider that it cannot be excluded that the proposed development would have a significant effect on the nearby ground water dependent turloughs which are qualifying interests for the Lough Croan, Four Roads and Lisduff Turloughs. I accordingly consider that an Appropriate Assessment as referred to in Article 6(3) of the Habitats Directive is necessary to determine if the development would adversely affect the integrity of the turlough habitat qualifying interest of the SACs referred to.
- 10.8. The site of the proposed development is in close proximity to a number of SPAs which have qualifying interest bird species identified in the vicinity of the site. The site is also within the foraging distance of a number of the Natura 2000 sites for a number of the qualifying interest bird species as referred to in Mr. Arnold's report. I consider accordingly that it cannot be excluded that the proposed development would have a significant effect on the qualifying bird species interests due to displacement, disturbance, barrier effect or collision impacts. I consider that a full Appropriate Assessment is required to assess the likely effects on the qualifying interest bird species of the relevant SPAs.
- 10.9. Mr. Arnold in his report agrees with the findings in the applicant's report to inform the Appropriate Assessment process (June 2012) that a full Appropriate Assessment as referred to in Article 6 (3) of the Directive is required to assess the impact on the following Natura 2000 sites Lough Croan SPA and SAC, Four Roads Turlough SPA and SAC and the River Suck SPA. He considers that the potential impact on two additional SPAs should also be assessed i.e. Lough Ree SPA (based to some extent, at least, on the submission from the Department of Arts Heritage and the Gaeltacht dated 19th October) and the Middle Shannon Callows SPA (which is within 15 kilometres of the phase 2 development (file20.244347)).

10.10. Having regard to the potential impact mechanisms summarised by Mr. Arnold in paragraph 3.6.3 of his AA report, attached as Appendix 4 to this report and to the qualifying interests of the sites in question, I consider that it is reasonable to conclude at screening stage that the development could potentially have a significant effect on the sites referred to, including the ones added, by Mr. Arnold.

10.11. Mr. Keohane has concluded in his report on hydrological and hydrogeological issues that the investigation process undertaken by the applicant has not addressed the onerous requirements and constraints which apply when carrying out an Appropriate Assessment of impact on a turlough habitat. Mr Keohane refers to the Department's submission of 18th May 2015 where it is stated that for habitats such as turloughs the maintenance or restoration of habitat requires the maintenance or restoration of ground-water and hydrological dynamics. He refers to other submissions to like effect and to Professor Johnston's submissions at the oral hearing in relation to the type of investigations required. Mr Keohane refers to the need for definitive positive findings following a rigorous analysis and assessment to the effect that the integrity of the European Sites would not be adversely affected. Mr Keohane notes that it was acknowledged at the oral hearing by the applicant's experts that the initial ground model was at variance with the findings from the bore-holes drilled in 2015 and that the results of the latest bore-holes suggested the need to re-interpret the geophysical profiles which would be done, it was stated, as part of the post-consent investigations. (I also note that the report of Jennings O'Donovan of May 2015 at 3.7 recommends a suite of further geotechnical investigations including rotary coring at the centre of each turbine)

10.12. Mr Keohane has concluded that the nature and extent of the investigations which have been carried out in respect of the proposed development do not meet the standard and certainty required to arrive at complete, precise and definitive findings in relation to the protection of the turlough habitats. In the final paragraph of his

report Mr. Keohane outlines the nature of additional investigations required and the key deficiencies in the investigations carried out to date.

- 10.13. I consider that Mr. Keohane's reasoning and conclusions are reasonable and I concur with his finding to the effect that the investigations carried out to date do not give the degree of certainty to definitively conclude that the development would not adversely impact the turlough habitats of, at least, the two closest European Sites i.e. Lough Croan and Four Roads Turloughs. It is also possible that the development could impact on the nearby non designated turloughs at Thomas Street, Cuilleenirwan and in the Ballyglass River callows, which could have some impact on the birds which are qualifying interests of the nearby SPAs.
- 10.14. It has been argued on behalf of the applicant that whilst further investigations post-consent are required in order to design foundations etc. there is adequate information available in order to conclude with certainty that the proposed development would not adversely impact on the integrity of the European Sites in question. I do not accept this conclusion for the reasons set out in Mr. Keohane's report.
- 10.15. The applicants have referred to the High Court and Court of Appeal decisions in relation to the Cullenagh Wind Farm in County Offaly and have argued that this has established that it is appropriate to leave some details of a development to be agreed with the planning authority post-consent even where European Sites and Appropriate Assessment are involved. I fully accept that in some situations this is appropriate and the court case in question gives a legal basis for this. I agree that it would be impractical and unreasonable to require that all details of a development must be worked out in full prior to consent being granted. I consider however that the current case differs from the situation referred to in the Cullenagh Wind Farm case in that conditions imposed in that case had specified the required standards to be achieved in the waters discharging from the site in order to prohibit any deterioration

in the water quality in the relevant European Site. The details left over for agreement were essentially details in relation to how the specified standards are to be achieved. I consider that the additional investigations required in the current case are much more significant in that these investigations are required to ascertain whether or not the proposed development would adversely impact on the integrity of the European sites and could also result in the necessity for some turbines to be omitted or re-located. I consider that the additional investigations required as referred to in Mr. Keohane's report are required in order to establish prior to consent whether or not there would be an adverse impact on the integrity of the European Sites. This was clearly not the case in the situation referred to in the High Court and Court of Appeal judgements referenced by the applicant. The analogy with the People over Wind legal case (relating to the Cullenagh Wind Farm) is dealt with in more detail in part 11 of this report under the heading Scope of Conditions.

10.16. Mr. Arnold's report on the AA requirement contains an in-depth assessment of the potential effects of the proposed development on each of the European Sites which he has identified as requiring assessment in his screening exercise. The assessment has been carried out having regard to the qualifying interests of each of the relevant European Sites. The assessment compares the current conservation condition of each of the qualifying interests with the favourable reference value which is related to the condition at the time of designation. This reference value is explained in Appendix no. 3 of Mr. Arnold's report. This helps clarify the conservation objective relevant to each qualifying interest. It is noted that in a number of instances the conservation condition is unfavourable. The conservation objective in such cases is to restore the favourable conservation condition of the relevant interest. This applies to Greenland White Fronted Geese and Golden Plover at Lough Croan and Four Roads Turlough SPAs.

10.17. Mr. Arnold's Tables in section 4.5 of his report i.e. Tables 8 to 12 set out his overall conclusions in relation to the level of risk that would exist that a few individuals of the

qualifying species would experience an effect during construction or from time to time during the 25 year operational period. The level of risk is based on a 5 point scale from negligible to high. The consequences of this for the population and conservation objectives are addressed in section 4.6 of his report. The tables indicate the levels of risk due to disturbance, displacement, barrier effect and collision for each of the qualifying species.

10.18. It is noted that the highest level of risk indicated in any of the tables is medium. (This is the second highest on the 5 point scale). This level applies in the case of assessed risk for all potential impacts on Golden Plover species at Lough Croan and for barrier and collision risks to Greenland White Fronted Goose also at Lough Croan.(Table 8). Table 9 indicates medium risks for Golden Plover for all 4 effects at Four Roads Turlough and also for barrier and collision risks for Greenland White Fronted Goose. Table 10 indicates medium risk for all 4 effects for Whooper Swan, Golden Plover and Lapwing at the River Suck Callows site. Medium barrier and collision risks for Wigeon and Greenland White Fronted Goose are also indicated at the River Suck Callows. Tables 11 and 12 which relate to the Lough Ree SPA and the Middle Shannon Callows respectively do not indicate any medium risks to the qualifying species. Some low level risks are indicated for Whooper Swan, Golden Plover, Wigeon, Lapwing and Black Headed Gull.

10.19. In section 4.6 of his report Mr. Arnold also considers in- combination effects likely to arise if both the current development and that referred to on file 20.244347 are permitted. He concludes that the most at risk species would be the qualifying species for the River Suck Callows which have been recorded at Thomas Street Turlough and at Lough Feacle. These are Whooper Swan, Wigeon, Golden Plover and Lapwing.

10.20. Section 4.7 of Mr Arnold's report contains his assessment of whether or not the conservation objectives of each qualifying species in each of the European Sites

would be contravened. This assessment is done without regard to the mitigation measures referred to in section 4.8. Mr. Arnold concludes that there is a medium risk that the development would contravene the conservation objectives for Golden Plover at Lough Croan and at Four Roads Turlough with a medium risk also for Greenland White Fronted Goose at Lough Croan. There is also a medium risk of the conservation objective for Lapwing at Four Roads Turlough being contravened. There are medium risks of the conservation objectives for Golden Plover, Lapwing and Greenland White Fronted Goose being contravened at the River Suck Callows site. There is uncertainty as to whether or not the conservation objective for Whooper Swan at the River Suck Callows would be contravened. The only conservation risks identified for Lough Ree SPA are low risks for Golden Plover and Lapwing. The assessment for the Middle Shannon Callows SPA indicates low risks of contravention for Golden Plover, Lapwing and Black Headed Gull.

10.21. Mr. Arnold's conclusions on the impact of the proposed development on the integrity of the European Sites assessed are contained in part 4.9 of his report. This takes account of the mitigation measures referred to in part 4.8. He considers that it cannot be concluded that the proposed development would contravene the conservation objectives for the relevant sites. This conclusion also applies in relation to in-combination effects. He has also concluded, however, that it cannot be concluded that the development would not, either on its own or in-combination with other developments, contravene the conservation objectives and so have an adverse effect on the integrity of the Natura 2000 sites. This is the relevant test set out in Article 6(3) of the Directive.

10.22. Mr. Arnold considers that the overall risk of adversely impacting on the integrity of the Natura 2000 sites is low to medium. The populations at most risk are the Greenland White Fronted Goose (at Lough Croan and other sites), Golden Plover (at Lough Croan and other sites) and Lapwing at the River Suck Callows site and Black Headed Gull at the Middle Shannon Callows. These are at particular risk due to the

relevant population being in un-favourable conservation condition. He also considers that there is a very low risk of contravening the conservation objective for Whooper Swan at the River Suck Callows as a result of the phase 1 development on its own and also due to in- combination effects arising from phases 1 and 2. (The in combination issue would not arise if the application referred to on file 20.244347 is refused).

10.23. Mr. Arnold, at paragraph 4.9.6, of his report sets out some measures which he suggests the applicant could undertake, including some additional surveys etc. and the re-location or omission of some turbines which could help to resolve problems and may remove the uncertainty which exists. The suggestions involve carrying out day and night surveys of foraging Golden Plover and Lapwing. This issue was discussed at the oral hearing and I consider that there is a deficiency in the information and investigations having regard to the fact that one of the 3 bird species for which Lough Croan (the nearest European Site) is designated is the Golden Plover which may forage at night. The Golden Plover is also one of the 2 qualifying bird species interests for which Four Roads Turlough is designated and it is a qualifying interest for the River Suck Callows SPA.

10.24. Mr Arnold's 6th bullet point in paragraph 4.9.6 refers to the applicant committing to the provision of refuge areas close to the wetland sites and providing high quality foraging habitats in these areas. There is, however, no evidence that the applicant is in a position to make such a commitment. The documents submitted indicate that there are other lands, including lands belonging to some of the appellants, located between the landholdings involved in the application and Thomas Street Turlough to the south. One of the appellants also owns some lands to the east between the site of the proposed development and Coolagarry Lough. There is also no evidence of the applicant being in a position to commit to measures to improve the conservation condition of the qualifying species at the Natura 2000 sites as referred to in the 7th bullet point of part 4.9.6 of Mr. Arnold's report.

10.25. Having regard to the time period which has elapsed since the application was initially lodged and when the original survey work was carried out I consider that it would not be appropriate at this stage to supplement the information on file by requesting additional information and requiring additional surveys to be carried out. I consider that the application should be determined on the basis of the information currently available.

10.26. I consider that the information submitted does not prove with reasonable scientific certainty that the proposed development would not adversely affect the integrity of the European Sites in the vicinity having regard to the conservation objectives for the qualifying interests for which the sites have been designated. I agree with the expert opinions of Mr. Keohane and Mr. Arnold that it has not been shown beyond reasonable scientific doubt that the development would not adversely impact on the turlough habitats and on bird species, particularly Golden Plover, Lapwing and Greenland White Fronted Goose, which are qualifying interests of some of the European Sites in the vicinity including Lough Croan, Four Roads Turlough and the River Suck Callows. There is also doubt about the impact of the development on the conservation objectives for Whooper Swan at the River Suck Callows and Black Headed Gull at the Middle Shannon Callows.

10.27. Having regard to my conclusions, as set out above. I consider that planning permission may not be granted in this case as such is precluded by Article 6(3) of the European Union Habitats Directive and by section 177V(3) of the Planning and Development Act 2000, as amended.

11.0 Assessment of issues not assessed under headings Environmental Impact Assessment or Appropriate Assessment:

National Policy Issues:

- 11.1. International, European and National energy policy Protocols, Directives, White Papers and legislation support the change to a low carbon economy and to greater use of renewable energy sources. No argument to the contrary has been submitted although some of the arguments submitted are fundamental objections to wind farms and in particular on-shore wind farms.
- 11.2. It is a government objective to generate 40% of Ireland's electricity needs from renewable energy by 2020. Without significant development of wind resources this objective will not be achieved. Off-shore wind energy development is likely to contribute very little to the requirement in the time-scale in question.
- 11.3. The Guidelines for Planning Authorities on Wind Energy Development were issued in 2006 under Section 28 of the Planning and Development Act, 2000. Planning Authorities and An Bord Pleanála are required to have regard to these in the performance of their functions. It is stated in those guidelines that the need to fulfil Ireland's national and international commitments to renewable energy and the acknowledged quality of the Irish wind energy resources is expected to lead to continued growth in wind energy development. The guidelines require 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 planning authority's area to be harnessed in a manner that is consistent with proper planning and sustainable development. In considering planning applications planning authorities should have regard to national policy regarding the development of alternative and indigenous energy sources and the minimisation of emissions of greenhouse gases. More detailed guidance is contained in relation to individual

aspects of wind energy development. These guidelines have been taken into account in my environmental impact assessment.

- 11.4. The National Planning Policy 2015, the White Paper on Energy 2015-2030 and the Climate Action and Low Carbon Development Act 2015 all support government policy towards a low carbon economy and the generation of energy from renewable resources including wind.
- 11.5. I consider that the proposed development of a 40 MW wind farm with an output of approximately 120.9 gigawatt hours of electricity per annum which would involve the displacement of approximately 60 to 70,000 tonnes of CO₂ emissions per annum would assist in achieving Ireland's 40% target for renewable electricity by 2020 and would be in compliance with government energy policies.

Compliance with County Roscommon Development Plan Policies:

- 11.6. Policy 3.50 is to encourage the development of wind energy in suitable locations in an environmentally sensitive way in accordance with the Wind Energy Planning Guidelines and the County Roscommon Renewable Energy Strategy 2014 – 2020 and the land use policies of the County Development Plan. It is a requirement of Policy 3.47 that all applications for wind farm developments shall have regard to the Wind Energy Planning Guidelines 2006 regarding landscape impacts. Policy 3.52 states that no wind energy development will be considered in any Natura 2000 site or in their surrounding buffer areas.
- 11.7. I consider that the general support for wind energy development contained in the Wind Energy Development Guidelines is contained in the Development Plan. There is a positive support for such developments subject to compliance with detailed landscape, ecological and cultural heritage requirements contained in the development plan. The requirements of the Wind Energy Development Guidelines

and the other policies of the development plan have been factored into my assessment of the impact of the proposed development.

- 11.8. It could plausibly be argued that the development would be in conflict with some policy or objective of the development plan if that policy or objective is considered in isolation e.g. Objective 6.22 which is to ensure that any development either above or below ground within the vicinity of a site of archaeological interest will not be detrimental to the character of the archaeological site or its setting. It is necessary however to consider the development plan in its entirety and to arrive at a balanced view of the various policies and objectives. When this is done I do not consider that the development can be considered to be significantly in conflict with the provisions of the development plan.

Impact on Development Potential of Adjoining Lands:

- 11.9. It has been argued in submissions and in a number of the appeals that the proposed development would adversely impact on the development potential of adjoining lands mainly due to turbines being located within 500 metres of lands belonging to landowners not involved in the proposal. Reference is also made to potential wind energy developments on adjoining lands.
- 11.10. A number of the individual appellants have indicated that they own lands in the immediate vicinity of the proposed wind farm and that the development, if permitted and constructed, would result in difficulties in obtaining planning permission for houses on these lands including planning permission for family members. Six of the individual appellants state that they have no written agreement with the applicant or have withdrawn their consent. A number of the parcels of land in question do not appear to have any frontage onto a public road and no details of access to some of the lands have been indicated. There is access to other parcels of the lands by means of narrow laneways. The area has not been indicated in the development plan as an area for future development although applications for one-off houses in

the countryside could be positively considered. I consider that it would be an unrealistic expectation to consider that every field or parcel of land in the countryside is a potential development site. If this presumption was adopted no development such as a wind farm would be allowed in any part of the country. In the event of any future applications being made for planning permission a number of issues such as access, landscape impacts, suitability for servicing by means of septic tank or otherwise, potential impact on sites of cultural heritage etc. would have to be considered. I do not consider that a grant of planning permission for the proposed wind farm would automatically rule out the potential for planning permission to be granted although I would accept that landowners or future occupants of houses may be reluctant to build in very close proximity to a wind turbine.

11.11. Mr. Fallon's land to the east of the proposed development is approximately 50 metres from Turbine No. 6. In response to the request for further information the applicant states that Turbine No. 6 is 52 metres from the lands of non-involved landowners. Mr. Burke has two parcels of land close to Turbines Nos. 1 and 2 and also relatively close to Turbine No. 3. It is stated that Turbine No. 2 would be 52 metres from his land. The applicant in the response to the request for further information gives the distance from Turbine No. 2 to non-involved lands as 52 metres. Ms. Donnelly's land is located in close proximity to Turbine No. 3. The distance from Turbine No. 3 is given as 52 metres.

11.12. Mr. Eamonn Kelly's lands are located to the south of a laneway which itself is located some distance south of the site of the proposed development. The nearest turbines would be Nos. 13 and 14. Proposed Turbine No. 13 appears to be approximately 350 metres and Turbine No. 14 approximately 340 metres from Mr. Kelly's lands. In the response to the request for further information the applicant states that Turbine No. 13 would be 349 and Turbine No. 14 would be 338 metres from any non-associated landholding. Mr. Tom and Fiona Farrell's land is however located between Mr. Kelly's lands and Turbines Nos. 13 and 14. The distances to the Farrell

lands from Turbines Nos. 13 and 14 respectively appear to be in the order of 110 and 105 metres. The applicant's figures in response to the request for further information do not seem to take account of the Fallon lands or it may be that consent was subsequently withdrawn. Mr. Paul Donoghue's lands are in two parcels with one parcel being located between Turbines Nos. 14 and 15 and the other parcel being located to the south-east of Turbine No. 16. The distance from Turbines Nos. 14, 15 and 16 respectively to Mr. Donoghue's lands appear to be 145 metres, 70 metres and 115 metres respectively. The distances from Turbines Nos. 14, 15 and 16 to non-associated lands given by the applicant in the response to the request for further information are 338, 268 and 379 metres respectively. Mr. Donoghue stated in the grounds of appeal that he had withdrawn his consent.

11.13. The measurements given above indicate that the recommendation contained in Part 5.13 of the Guidelines in relation to wind-take i.e. that a distance of not less than two rotor blades from adjoining property boundaries will generally be acceptable, is not being complied with in some cases at least. There is some confusion over the definition of two rotor blades as each blade is 50 metres and accordingly the guidelines could be interpreted as recommending a separation distance of 100 metres rather than the 200 referred to by the appellants. The guidelines do however state that where permission for wind energy development has been granted on an adjacent site the principle of the minimum separation distances between turbines in crosswind and downwind directions should be respected. The distances referred to are three and seven times the rotor diameter which would be distances of 300 and 700 metres between turbines. This would indicate that wind turbines would not be appropriate in the adjoining lands without a significant setback. Having regard to the small parcels of land in question however and the absence of any planning permission or proposal for wind farm on the lands I consider that the objection on the basis of non-compliance with Part 5.13 of the guidelines is not a significant one.

11.14. I would point that a micro-siting distance of 20 metres would result in the possible over-sailing of adjoining properties in the event of turbines which are less than 70 metres from adjoining non-associated landholdings being re-sited the full 20 metres. If permission is being granted I consider that a condition should be imposed prohibiting any micro-siting which would result in over-sailing of the lands of non-associated landholders.

Safety Issues:

11.15. Submissions have been made to the effect that safety issues arise due to the possibility of ice throw, blade damage or lightning strike. The Planning Guidelines for Planning Authority state in Section 5.7 that there are no specific safety considerations in relation to the operation of wind turbines and that people or animals can safely walk up to the base of the turbines. Modern turbines are also designed to mitigate the issues referred to. Part 6.7.7 of the EIS refers to the issue of ice-throw. This indicates that the risk of ice throw was taken in account during the project design having regard to the standard calculation in the industry which would indicate a maximum distance of 277.5 metres. There are no residential properties located within this distance of a proposed turbine. I do not consider that there are safety issues arising which would justify a refusal of planning permission.

Proposed Septic Tank to service offices at location where house is to be converted to office use:

11.16. An assessment of the suitability of the site for a septic tank is contained in the response to the request for further information. This indicated a T-value of approximately 20. This indicates the suitability of the site for a septic tank and percolation area. In any event the documentation indicates that planning permission was granted for a septic tank and percolation area at the location subsequent to the lodgement of the current application.

Setback from Roads and Driver Distraction:

11.17. The response to the request for further information deals with this issue in part 24.0 of the response to item 22. It is indicated that the proposed setback of turbines from any public road exceeds 600 metres. The setback distance is far more than the total height of the structures proposed. I consider that the setbacks from the public roads are adequate. I also consider that none of the turbines is so located as to cause significant driver distraction and that the proposed development would not result in traffic hazard due to a driver distraction on the surrounding road network.

Proposed Merlin Avian Radar System:

11.18. This issue is dealt with in more detail in Mr. Arnold's reports. (Appendices 3 and 4). I consider that the system proposed may be of benefit and may be a useful mitigation measure in order to avoid collision risk for birds with the turbines in a wind farm. The evidence submitted however including the evidence at the Oral Hearing indicates that the system is not currently in use as a mitigating measure in any wind farm in Ireland or in the United Kingdom. There is no evidence of the success of the system as a mitigating measure in similar circumstances to those which apply at the site of the proposed development. I consider this to be unproven technology which may have some potential but which should not be factored into the Appropriate Assessment in terms of determining in the light of the best scientific knowledge in the field and providing complete, precise and definitive findings and conclusions to allow for a determination that the proposed development will not adversely affect the integrity of the European sites in the area. I consider that it would be necessary for such definitive findings and conclusions to be made without reliance on the proposed Merlin Radar System. If permission is being granted I consider that it would be reasonable and desirable to include a condition requiring that such a system be put in place. There are, however, significant doubts about the efficacy of such a system particularly in a wind farm site where the wind turbines themselves are known to give

rise to problems for radar systems and to add to clutter and interference with radar systems provided to ensure the safety of aircraft. Due to the unproven nature of the mitigation measure in question I consider that it should not be factored into the Appropriate Assessment although it could be included as an additional “belt and braces” mitigation measure, as referred to by the applicant, if permission is granted. The system would also not provide mitigation for risks other than collision risks e.g. displacement, disturbance and barrier effects. It is clear from Mr Arnold’s report that risks other than collision risks exist although the Department of Arts Heritage and the Gaeltacht stated in its submission on 19 October 2015 that the primary cause for concern from a bird conservation perspective is the increased risk of bird mortality that may occur through collisions.

Scope of Conditions:

11.19. The applicant has strongly argued that there is adequate information available currently to the Board to allow it to grant permission for the development and to rely on further details to be agreed and further investigations to be carried out in order to determine some issues including issues relating to the design of foundations. The applicant refers to the High Court decision relating to an 18 turbine wind farm at Culleenagh, County Laois. (People over Wind, Environmental Action Alliance Ireland versus An Bord Pleanála). The applicant submitted a copy of the High Court decision in that case at the Oral Hearing. The High Court decision in the case has been upheld by the Court of Appeal.

11.20. The applicant submits that it was determined by the Court that the Board was entitled to determine that it had adequate information before it to carry out an appropriate assessment and that there was no significant lacuna in the information. It was also held that the suite of mitigation measures contained within the development proposals and the conditions formed an integral part of the proposed development. It was held that the mitigating measures and conditions were sufficiently specific for

the Board to carry out an appropriate assessment and that there was ample evidence before the Board that the mitigating measures would protect the integrity of the relevant SAC. It was also held that the Board was entitled to leave over to subsequent agreement between the applicant and the local authority, in consultation as required with other State Agencies, technical matters or matters of detail including the details of mitigation measures. It was held that the matters left over in the conditions related to details or technical matters and that these were properly left over for agreement.

11.21. In terms of the extent to which issues could be left over for agreement the Court relied to a large extent on the judgement in the case of Boland versus An Bord Pleanála. It was noted that the Boland case did not involve an Appropriate Assessment requirement and compliance with the provisions of 6(3) of the EU Directive. The Court held however, that similar to the point made by the Supreme Court in the Boland case that in complex enterprises there will be technical matters and matters of detail which can be left to subsequent agreement between the developer and the local authority and that this also applies to a development that requires an Appropriate Assessment. It is noted that, in paragraph 257 of the judgement, it is stated that the general finding in relation to the appropriateness of leaving details of technical matters and matters of detail to be agreed at a later stage should not be taken as applying to all appropriate assessments carried out by Planning Authorities or the Board. It was held, however, in the particular case that in carrying out the appropriate assessment the Board was entitled to approve the development once it was satisfied that it would not adversely affect the integrity of the European Site in question. It is held, in paragraph 261, that the suite of mitigating measures contained within the development proposal and the conditions form an integral part of the proposed development. It was further held that these were sufficiently specific for the Board to carry out the appropriate assessment and that they were properly considered by the Board as part of the appropriate assessment.

11.22. The further investigations proposed in the current case relate essentially to hydrological and hydrogeological issues and include the detailed design of foundations and drainage works etc. The expert consultant appointed by the Board in the current case has examined the proposal and the investigations carried out to date and has concluded, having examined and evaluated the information submitted, that it cannot be concluded with certainty that the proposed development would not adversely impact on the integrity of the turloughs in the designated European Sites in the vicinity. In the concluding part of his report Mr. Keohane sets out the deficiencies in the investigations and the additional investigations which would be required including those referred to in the Jennings O'Donovan Report dated May, 2015. I consider that the consultant's findings in this regard are reasonable. I consider accordingly that planning permission may not be granted having regard to Article 6(3) of the European Union Directive and Section 177V (3) of the Planning and Development Act, 2000, as amended. The report of Mr. Richard Arnold and the appropriate assessment contained in this report also conclude that the evidence submitted, when analysed and evaluated, does not give adequate certainty to support the contention that the proposed development would not adversely affect the integrity of a number of European sites in the vicinity. Mr Arnold also refers to additional surveys which would be required to remove uncertainty about the effects of the development.

11.23. I consider that the additional investigations and information required on hydrological and hydrogeological matters in the current case as referred to in Mr Keohane's report results in the analogy with the issues left over for agreement in the People over Wind case not being appropriate. The details left for agreement in that case related to facilities to be provided in order to achieve water quality standards set out in the decision. The standards were determined and the details left over for agreement related to how these would be achieved. In the current case the additional investigations are required to determine some aspects of the development

and may result in some parts of the development being omitted e.g. some turbines. The additional investigations are fundamental in determining the likely impact on the designated turloughs in the vicinity. In my opinion leaving these issues for agreement with the planning authority would not be supported by the People over Wind legal decisions referred to.

Mr. Sweetman's submission:

11.24. A submission was made at the Oral Hearing by Mr. Peter Sweetman. Mr. Sweetman had requested to be allowed to make submissions at an earlier stage in the process but a submission was not accepted at that time as submissions were canvassed only from parties to the appeal. (The applicant's legal representative questioned why Mr. Sweetman wished to make a submission at the oral hearing stage having not done so at an earlier stage). Mr. Sweetman stated that he had not noted the public notice of 2 2nd September 2015 allowing submissions from the general public or any interested parties.

11.25. Mr. Sweetman's submission consisted of a quotation of paragraphs 40 and 41 of the European Court decision on Case C-258-EU. An Bord Pleanála was a respondent in that case and will be aware of the judgement. Mr. Sweetman made no specific reference to the appropriateness or otherwise of the specific development proposed in the current case and his submission did not indicate any particular interest in the matter which is the subject matter of the appeal.

Community Fund Issue:

11.26. One of the community benefits being put forward by the applicants for the proposed development relates to the provision of a community fund which would be of benefit to local communities, sports organisations etc. In response to a question at the Oral Hearing as to whether or not any such fund could be required by way of condition in a decision to grant planning permission for a development on appeal the barrister on

behalf of the applicant referred to situations in which a community fund had been required by way of condition. The cases referred to, however, are all Strategic Infrastructure Development cases where the applications were made directly to An Bord Pleanála. The applicant's barrister submitted that such a condition could be imposed under the general provisions of Section 34 of the 2000 Act relating to conditions. I do not consider that a condition requiring the payment of a contribution towards a community fund would be in accordance with the legal provisions of Section 34. Such a condition would not appear to comply with the normal legal requirements for conditions to be valid and special provision is made in the legislation for conditions requiring the payment of contributions towards the provision of services under Sections 48 and 49 of the Planning and Development Act 2000. Whilst a community fund might be beneficial to local organisations I do not consider that there is any provision in planning legislation for requiring payment by the applicant to such a fund except under the Strategic Infrastructure Development provisions where the application is made directly to An Bord Pleanála. The applicant in this case however has stated that such a payment would be considered to be an integral part of the development if permission is granted. This is a matter for the applicant and possibly the planning authority as an enforcement authority. The Board has no function in determining whether or not payments to such a fund would be required if permission is granted.

Project Splitting issues:

11.27. It is submitted by the appellants that the development is part of a larger development comprising of the current proposal, the development proposed in the application referred to on file reference 20.244347, the connection to the national grid and possibly other turbines in the vicinity. It is submitted that the entirety should have been subject to an application directly to An Bord Pleanála or at least pre-application discussions to determine if the entirety comprised one development and if it qualified as Strategic Infrastructure Development as defined in Irish planning legislation.

11.28. The application was accepted as a valid application by the planning authority and appeals against the planning authority's decision were previously determined by An Bord Pleanála although that decision has been quashed by the High Court. The High Court decision was to remit the application to the Board for determination. The validity of the planning authority's decision and of the appeals has not been questioned. The application should accordingly be determined on its planning merits.

11.29. The development proposed in the current application does not depend on the application proposed on file 20.244347 being permitted or being constructed. The development could be carried out independently of any other wind farm in the area. The documentation refers to cumulative impacts and such impacts can be assessed. In my assessment I have referred to cumulative impacts and have had regard to documentation including photomontages on file reference 20.244347. In the circumstances I consider that the application should be determined on its merits irrespective of the legal basis for doing so as set out in the previous paragraph.

12.0 Overall Conclusions on Planning Application Arising from Assessment:

12.1. The proposed development would make a useful contribution to Ireland's commitments to reducing greenhouse gas emissions and would be in accordance with government policy in relation to generation of energy from renewable sources. It would also be in accordance with the County Development Plan and the Wind Energy Development Guidelines policies in relation to these issues.

12.2. The most obvious and openly apparent impact of the development on the environment would be its visual impact. I consider that the proposed wind turbines would have a significant visual impact in the landscape. On balance however I consider that the wind farm proposed, on its own, would be acceptable. I consider however that if the wind farm proposed in the appeal referred to on File Ref.

PL20.244347 is permitted the cumulative impact of the two wind farms would result in such visual dominance of wind farms in the local landscape as to render the development unacceptable in terms of impact on the landscape and on visual amenity.

- 12.3. There are a significant number of residential properties in the vicinity of the proposed wind farm. The noise predictions indicate that noise levels at some residential properties would be close to the maximum recommended standards on occasion. I consider however that if the development was otherwise acceptable noise and shadow flicker issues could be adequately controlled by means of conditions.
- 12.4. The karst landscape in the area poses a number of difficulties in relation to the development of a wind farm. These difficulties are compounded in the current case by the fact that there are a number of groundwater dependent designated sites of ecological interest in close proximity. I consider that it has not been demonstrated with the best scientific evidence to a reasonable degree of certainty that the proposed development would not have significant adverse impacts on the integrity of the designated Special Areas of Conservation in the vicinity.
- 12.5. The lakes, turloughs and river systems in the area are significant sites from the perspective of wintering water birds. The interconnectivity and interchangeable use of these wetland areas by wintering birds are difficult to predict with any degree of certainty. The Appropriate Assessment carried out and Mr Arnold's report on AA issues indicate that the surveys and information provided do not adequately demonstrate beyond reasonable scientific doubt that the wind farm will not adversely impact on the habitats and species of conservation interest for which the European Sites in the vicinity have been designated. The efficacy of the Merlin Avian Radar System proposed has not been demonstrated to be an adequate mitigation measure, at locations similar to the site of the proposed development, in order to overcome the

scientific doubt which remains in relation to the proposed development adversely impacting on the integrity of the European Sites in the vicinity.

- 12.6. The connection to the national grid does not form part of the application. The proposed connection however has been adequately addressed for the purposes of ensuring that the environmental impacts of the entire project can be adequately considered. The grid connection as proposed would not of itself give rise to significant effects on the environment or be likely to have any significant effect on any of the European Sites in the vicinity. It would also not add to cumulative adverse effects on the environment or in-combination effects on designated European Sites.
- 12.7. There are a number of archaeological sites located in close proximity to the proposed turbines and access road. The proposed development would have significant visual and noise impacts on the archaeological sites in question. Due to the nature of the sites, the lack of any apparent interconnectivity between them, the low level of impact of the sites on the landscape in the area, the in-accessibility of the sites at present to the general public and the density of such sites in the local and general area I do not consider that the impact on the archaeological sites would justify a refusal of planning permission. Conditions in relation to preconstruction testing and archaeological monitoring during the construction phase would be required if permission is granted.
- 12.8. As the lands in the area are not designated for residential or other development in the development plan I do not consider that any impediment to future development potential of lands in the area would be an adequate reason for considering that the proposed development would be contrary to the proper planning and sustainable development of the area.

13.0 Recommendation:

I recommend that planning permission be refused for reason number 1 set out below. In the event of the Board granting permission for the development referred to on file no. 20 244347 I recommend that reason number 2 set out below should also apply in the current case (File Ref 20.244346)

1. On the basis of the information provided with the application, including the EIS and the Natura Impact Statement (NIS) contained therein (Appendix 7.2) and subsequent revisions to the NIS submitted to the planning authority with additional information on 10th August 2011 and the later revision of June 2012 and also including the additional information submitted to An Bord Pleanála on 6th June 2013 and on 18th May 2015 the Board is not satisfied, having regard to the precautionary principle, that there is reasonable scientific certainty that the proposed development would not adversely affect the integrity of European Sites in the vicinity having regard to the purposes for which these sites were designated.

In particular it is considered that the hydrogeological and geotechnical investigations carried out do not demonstrate to a reasonable level of scientific certainty that the excavations and construction works required to carry out the development would not adversely impact on the turloughs which are qualifying interests of the Lough Croan, Four Roads Turlough and Lisduff Turlough SACs.

It is also considered that it has not been demonstrated beyond reasonable scientific doubt that the development would not contravene the conservation objectives for some of the qualifying interests of the nearby Special Protection Areas (SPAs). In particular, it is considered that there is a danger of contravening the conservation objectives for Greenland White Fronted Goose at Lough Croan and other SPAs, Golden Plover at Lough Croan and other SPAs and Lapwing at the River Suck Callows and other SPAs. There is also uncertainty in relation to the impact on the conservation objectives for Whooper Swans at the River Suck Callows SPA and

Black Headed Gulls at the Middle Shannon Callows. It is considered that inadequate surveys and investigations have been carried out in relation to day and night movements, flight lines and foraging activities of Golden Plover and Lapwing.

Having regard to the uncertainty which exists, in relation to the impact of the development on the qualifying interests and consequently the integrity of the European Sites in the area, the granting of planning permission is precluded by Article 6(3) of the EU Habitats Directive and by section 177V (3) of the Planning and Development Act 2000, as amended.

2. Having regard to nature of the landscape in the area, the visual relationship of the development to that permitted a short distance away to the south-east (File Ref 20-244347), the visual prominence of the site from public roads and from existing settlements and to the large area in which the 2 wind farms would be very dominant visual features it is considered that the cumulative effect of the 2 wind farms would result in the area being visually dominated by wind turbines. Such development would be out of character in the landscape and would seriously detract from the visual amenities of the area. The development would, accordingly, be contrary to the proper planning and sustainable development of the area.

Padraic Thornton

25th November, 2016.

File Reference number 20.244346

List of Appendices:

- 1. Synopsis of Oral Hearing submissions**
- 2. Report of Mr. Jerome Keohane on Hydrological/Hydrogeological issues**
- 3. Report of Mr. Richard Arnold on Ecological issues**
- 4. Report of Mr. Richard Arnold on Appropriate Assessment issues**