An Bord Pleanála

Inspector's Report

Reference No. 17. PA0038

DEVELOPMENT:	A wind farm comprised of 46 turbines each up to 169m in height, with 33km of new access tracks, upgrades to 8km of existing tracks, 55km of underground cabling from the turbines to a new 110kV substation, substation, and 15km of underground cabling from that sub-station to the grid at Gorman sub-station
ADDRESS:	North and east of Kells, Meath
APPLICATION TYPE:	Application to the board for permission under section 37E of the Planning and Development Act 2000-2015
APPLICANT:	North Meath Wind Farm Ltd, c/o Element Power Ltd.
PLANNING AUTHORITY:	Meath County Council
ORAL HEARING:	At Kells, Meath on the 16th, 17th, 18th, 23rd, 24th, 25th & 30th June and the 1st, 2nd, 8th, 9th, 14th, 15th, 16th & 21st July, 2015

DATES OF SITE INSPECTION:	12th December 2014, 2nd March, 23rd April and 5th November 2015
INSPECTOR:	Stephen J. O'Sullivan
OBSERVERS:	*Prescribed bodies* - Minister for Arts, Heritage and the Gaeltacht Inland Fisheries Ireland National Roads Authority Fáilte Ireland Heritage Council An Taisce Health Service Executive Geological Survey of Ireland Irish Water *Other persons* - As set out in Appendix I of this report

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 This report deals with an application for permission under section 37E of the Planning and Development Act 2000-2015 for a windfarm that would consist of 46 turbines, each up to 169m high, at locations to the north and east of the town of Kells in county Meath, and various ancillary features including 70km of underground cable. The application site includes land in the vicinity of the proposed turbines and the access tracks to them, as well as parts of various public roads. The site therefore has an extensive, elongated shape. The applicant described the proposal as the "Emlagh" windfarm after the name of a townland that lies near the middle of the proposed turbines, although several observers disputed the suitability of that description on the grounds that other placenames in the area are much better known. The settlements at Moynalty and Lobinstown lie just to the west and east respectively of the area upon which turbines would stand. The settlements at Carlanstown and Castletown lie between proposed turbines.

1.2 The board issued a notice under Ref. No. PC0178 on 11th September 2014 to Element Power Ireland Ltd. giving its opinion that the proposed development falls within the scope of section 37A(2)(a) and (b) of the act. The notice was given under section 37B of the act following consultation between Element Power Ireland Ltd. and the board. The applicant submitted that notice with the current application. A judicial review of the board's decision to issue that notice was sought by Mr John Callaghan, one of the observers on this application. Ms Justice Costello refused leave to seek judicial review in the High Court on 11th June 2015, although leave to appeal that refusal has been given. The judgement stated that the notice of the board's opinion did not predetermine the application for permission, and that the issue of the proposed development's strategic importance in social or economic terms could be revisited in the course of the application with proper participation by observers.

.1.2 This application was submitted to the board by North Meath Wind Farm Ltd. on 6th October 2014 accompanied by an environmental impact statement and a natura impact statement. The planning authority submitted its report on the application on the 17th December 2014. Observations on the application were received from nine prescribed bodies within the first consultation period: the Minister for Arts, Heritage and the Gaeltacht; Inland Fisheries Ireland; the National Roads Authority; Failte Ireland; the Heritage Council; An Taisce; the Health Service Executive; the Geological Survey of Ireland; and Irish Water.

Valid observations were made in the course of the application by 361 other persons.

1.3 On 25th February 2015 the board requested the applicant, under section 37F(1)(c) of the act, to submit its response to the report of the planning authority and the other observations. The applicant did so on 25th March 2015. The board concluded that this response, hereinafter referred to as the further information, did not constitute significant additional information on the effect of the proposed development on the environment. Nonetheless, in the interests of justice, the board made the further information available for inspection and invited further observations from the planning authority and observers. Further submissions were received from the planning authority, the Minister for Arts, Heritage and the Gaeltacht; Inland Fisheries Ireland; the National Roads Authority; and 44 other persons before 28th May 2015.

1.4 I conducted an oral hearing on the application at Kells on 15 days between 16th June and 20th July 2015. The applicant and the planning authority attended the hearing. 94 persons made submissions there, including An Taisce, Deputies Regina Doherty and Helen McEntee, Senator Thomas Byrne, and Councillors Eugene Cassidy, Sean Drew, Darren O'Rourke (for whom Deputy Peadar Toibin spoke), Paddy Meade and Sarah Reilly, and two persons who had not made valid written submissions – Ronnie McGrain and Caroline Dowling. Written evidence was not normally accepted in the course of the hearing. However the applicant submitted a document correcting errata in its previous written submissions, another to update the noise prediction results to reflect the relocation of three proposed turbines, a response to the proposed noise condition suggested by the planning authority, and a document appraising the likely effects on the environment in cumulation with the proposed Maighne windfarm. Other persons submitted documents to illustrate their arguments or to clarify references to publicly available material. The applicant also provided copies of certain documents which it cited in its responses to oral submissions. All these documents are available to the board, as is an audio recording of the proceedings of the hearing which were generally in order.

1.5 Under section 37G of the act the board may decide, on foot of this application, to grant permission for the proposed development either in whole or in part, subject to conditions or modifications as it specifies, or it may refuse permission for the proposed development. When making this decision the board is obliged to consider the environmental impact statement that accompanied the application; the written submissions made to the board described in paragraphs 1.2 and 1.3 above; other information relevant to the likely consequences for the

proper planning and sustainable development of the area of the proposed development and its likely effects on the environment; this report; the provisions of the Meath County Development Plan 2013-2019; any effect on a Natura 2000 site; the National Spatial Strategy; the Regional Planning Guidelines for the Greater Dublin Area 2010-2022; the policies and objectives of the Government and of the Minister; and to the national interest and issues of strategic social or economic importance to the state. A grant of permission cannot be made until an environmental impact assessment of the proposed development has been completed, as well as an appropriate assessment of its implications for any Natura 2000 site upon which it is likely to have a significant effect.

1.7 The board may wish to note its previous decisions in the vicinity of the site –

- PL17. 244357, Reg. Ref. KA14/0921 - On 19th June 2015 the board refused permission for a windfarm of 6 turbines at Cregg, Nobber c 8km north of the current proposal. The reason for refusal referred to the section 9.6.13 of the development plan and objective CH OBJ 22 regarding designed landscapes, historic parks, gardens and demesnes, the protected structure at Whitewood House and the failure to adequately consider alternatives, and stated that the development would unduly interfere with views from that house. The inspector's recommendation also referred to a concern that the cumulative impact with the current proposal would lead to windfarms becoming characteristic of a landscape rich in history and archaeology. The planning authority's decision to refuse permission also referred to traffic hazard and impact on wildlife, and a general statement regarding the environment and public health.

- PL17. 243902, Reg. Ref. KA14/0597 - On 2nd February 2015 the board granted permission to retain a wind monitoring mast for 5 years at Drakesrath on the site of the current proposal. The reason for the decision referred to local and national policy on wind energy development, the character of the landscape and the distance to houses. The planning authority had decided to grant permission to retain the mast for 20 years.

and also the current applications

- 02. VA0017 – an application was made to the board on the 9th June 2015 under section 182A of the act for approval to erect a 400kV electricity transmission

line to from south Meath to the border to connect with Northern Ireland's grid. The proposed line would run through the windfarm proposed in this application.

- 09. PA0042 – An application was made to the board on the 9th April 2015 under section 37E for permission for 47 wind turbines in north Co. Kildare and south Meath, described as the proposed "Maighne" windfarm. The application was made by Element Power Ireland Ltd. It has not yet been decided.

2.0 DESCRIPTION OF THE SITE AND THE DEVELOPMENT

2.1 The published description of the proposed development referred to the construction of 3 wind farm clusters with a total of "up to" 46 wind turbines. The maximum capacity of the proposed windfarm is stated to be 120MW, as specified in a offer for a grid connection at the Gorman sub-station from the Commission for Energy Regulation under Gate 3 with reference no. TG86. Each of the turbines would have a capacity of between 2MW and 3.5MW. The three clusters, as described in the EIS, are –

Farragara
This cluster would stand to the north of the N52 road and the village of Carlanstown and east of the village of Moynalty. It would contain 8 turbines, numbered 1 to 8.

Castletownmoor
This cluster would stand south of the N52, west of Carlanstown and east of the R162 road. It would contain 25 turbines, numbered 9 to 33.

Ísealchríocha
This cluster would stand south of the N52 and east of the R162, between the village of Castletown and Lobinstown. It would contain 13 turbines, numbered 34 to 46.

Overview of the site

2.2 The proposed windfarm would be in a rural area in north Meath, to the north and east of Kells. One of the turbines at the northern edge of the windfarm would be c8km north of the centre of Kells, while another would be c16.5km to its north-east. The closest turbine would be c4.25km north-east of the centre of Kells. The maximum extent of the site from east to west would be 14.4km, from north to south it would be 8km, excluding the line of the high voltage cable to the Gorman substation.

Landscape

2.3 The predominant landcover on and around the site is grassland and pasture of various agricultural quality. However Emlagh Bog lies within the Castletownmoor cluster, around which lie areas of coniferous forestry and woodland scrub. The land at Castletownmoor is relatively low lying and flat. The land rises to the north towards the Farragara and Isealchriocha clusters,

and becomes a landscape of rolling hills. The land around the Castletownmoor cluster drains through various streams and tributaries to the Blackwater, which joins the Boyne at Navan. The land around the Farragara cluster drains to the Blackwater through the Moynalty River. The land around the Isealchriocha cluster is in a different catchment that drains to the River Dee.

2.4 There are various features of value to cultural heritage in the area which are discussed in the relevant section of the environmental impact assessment below, including protected structures and archaeological remains in the vicinity of the site. The wider area includes the World Heritage Site (WHS) at Brú na Bóinne which lies south-east of the proposed develoment, at a distance of 13.5km to the outer buffer zone of the WHS and 12.6km to its inner core. There are candidate World Heritage Sites on UNESCO's tentative list at the monastic core of Kells c4km south-west of the proposed development, and at Tara c16km to its south. National monuments in the wider area include the hillfort and tower at Lloyd c5km to the west of the proposed development; the complex at Slieve na Calligh including the tombs at Loughcrew c16km to the west; and the Hill of Slane c10km to the east of the proposed development

Settlement

2.5 Kells had a population of 5,888 at the 2011 census. It is a substantial market town with a medieval monastic site at its core, beside a central area laid out in the 18th century which itself is surrounded by modern development. The Georgian core is associated with the big house and demesne at Headfort to the east of the town. The village of Carlanstown has a population of 688. It includes a village core with recent suburban development around it. There would be turbines to the north-west, north, east and south-east of Carlanstown. The closest would be less than 1.5km from the village. There are no other towns or villages recorded in the census in the area, although there are several nodes of settlement. Moynalty was a planned estate village which retains a linear form. The nearest turbine, the most westerly proposed, would be c1.5km to the east of the village. Castletown stands between the proposed Castletownmoor and Isealchriocha clusters. So turbines would stand to its east and west. with the closest c1.3km from the cross roads at the centre of the settlement. Lobinstown stands to the east of the Isealchriocha cluster, within 1.4km of the nearest turbine. Wilkinstown is to the east of the Castletownmoor cluster and south of the Isealchriocha one, with the closest turbine in the former c2.9km away.

2.6 There is also extensive residential development in the countryside around the site, with a dense linear pattern of housing along many stretches of the road network. The proposed turbines are located so that none would be within 500m of a house save for one owned by a person with an interest in the proposal. However the EIS identifies 564 buildings within 1.2km of a turbine, including 416 houses that would be between 500m and 1km of a turbine.

2.7 Access to the area is available from the M3 motorway and the N52 national secondary road, which by-passes Kells and then runs through Carlanstown to the south of the Farragara cluster and north of the other two clusters. The R162 regional road runs south from Nobber towards Navan between the Isealchriocha and Castletownmoor clusters. A disused railway runs parallel to it. The R151 regional road runs east from Kells to the south of the Castletownmoor cluster. A network of county roads of various standards runs between the main roads.

The proposed windfarm

2.8 A grid reference for the location of each of the 46 proposed turbines is set out in tables 2.1, 2.2 and 2.3 of the EIS. The applicant amended the proposed location of 3 of the proposed turbines, nos. 21, 32 and 37, in the submission of further information. The revised grid references are set out in table 4.1 of the main volume of the further information. The applicant also amended the proposed access track to turbines 45 and 46 so that it joined a county road rather than the N52 national secondary road. This would have involved an access track going outside the red line site boundary set out in the initial application. At the oral hearing the applicant stated that this amendment was withdrawn and that access to T45 and T46 would be as initially proposed. Section 2.3.13 of the EIS refers to micrositing, so that a turbine would be located within 20m of its location as specified in the application provided it was no nearer a house. The applicant stated at the hearing that no such flexibility would be required, and any turbine would be erected in its specified location.

2.9 Each of the turbines would have a maximum height of 169m to the blade tip, and a maximum blade length of 60m. The drawing of a 'typcial turbine' submitted with the application showed a tower with a hub height of 108.7m and a diameter of 6.95m at its base, with three blades with a rotor diameter of 120m. Section 2.3.2.3 of the EIS states that the concrete foundations for each tower may vary, with a typical depth of 1-2m and an extent of 25m by 25m. An area of hardstanding would be laid at each turbine as shown on the site layout

plans measuring c30m by 50m, to allow the turbines to be erected and maintained. Table 2.4 of the EIS states that one of four different turbine models may be erected on site – the General Electric 2.75 with a rated capacity of 2.75MW; the Vestas V112 of 3-3.3MW; the Nordex N131 of 3MW; or the Siemens SWT113 of 3-3.2MW.

2.10 Access to the turbines from the public road would be provided along 33km of new tracks and 8km of upgraded tracks. The access tracks would be 4.5m wide on straight sections, and would be finished with aggregate. Floating roads would be constructed where there is a depth of peat or soft clay of more than 1m. A drainage system would be provided along the tracks.

2.11 A substation would be installed in a forested area in the Castletownmoor cluster near turbine no. 22. Each turbine would be connected to that substation by medium voltage cable at 33kV laid under the access tracks and public road for c55km. The substation would be connected to the national grid at the Gorman substation by high voltage cable at 110kV laid under the public road for c15km. The depth of cover to the top of the cable ducts would generally be 950mm in public roads and 1100mm within the windfarm sites. Communication and earthing cables would be laid alongside the electricity conductors. Control buildings for the windfarm operator and Eirgrid would be erected at the sub-station compound, which would be fenced.

2.12 It is proposed to erect a meteorological monitoring mast 80m in height at the Ísealchríocha cluster, near turbine no. 40.

2.13 A drainage system will be installed along tracks and hard standing area with roadside swales running to stilling ponds. The stilling ponds would drain diffusely over land.

2.14 The application specified that the windfarm would operate for 30 years from the commencement of its operation and connection to the national grid, after which it would be decommissioned. This would involve the turbines being dismantled and removed from the site. The foundations and site tracks would be covered and allowed to re-vegetate but some of the access tracks may be left in place, depending on the requirements of the landowner and the county council. The underground cables would be cut and left in place. The sub-station would be in the ownership of the ESB and would remain in place.

Construction

2.15 An appropriate period of 10 years in which to carry out the development is requested. The EIS states that the construction phase of the project would take approximately 21 months. The process would be carried out in accordance with a Construction and Environment Management Plan (CEMP) a draft of which is provided at Appendix D of the EIS. It would begin with provision of access and drainage, and tree felling of up to 19ha in the vicinity of the proposed sub-station and turbines 12, 22 and 23. The forestry there is mainly Norway Spruce, and all except c1.3ha would be replanted. It would then proceed to the provision of hard standing and foundations for the turbines, and cabling. The erection of each turbine would require 3 or 4 days.

2.16 A main construction compound would be located in the Castletownmoor cluster near the location of turbine 33. A concrete batching plant would be installed there. Two ancillary construction compounds would be established, one near turbine 14 in the same cluster, and one near turbine 4 in the Farragara cluster. Borrow pits would be opened in six locations. Their combined surface area would be 8.2ha and they would be excavated to a maximum depth of 4m. The EIS states that sufficient stone could be sourced from the pits for the proposed access tracks, but if not then more may be sourced from local quarries. The pits would be reinstated with soil excavated for the turbine foundations.

2.17 The EIS identifies routes for the delivery of turbine components. These would travel along the M3 and then the N52 national secondary road, through the village of Carlanstown, and along various stretches of county road for distances of between a few hundred metres and c4km before reaching the access tracks provided within the windfarm. At the hearing the applicant clarified that the alternative delivery method set out in Appendix K of the EIS would be employed, whereby the components would be placed at a vertical angle on the trailer, and that no landtake would be required for roadworks from any landowner who had not already agreed to the development.

Community Gain

2.18 The applicant is proposing to provide a community benefit fund of €3.5m to be spent over the lifetime of the windfarm on community initiatives, education grants and local enterprise supports. In addition a near neighbour scheme would provide up to €5,000 for each owner-occupied house within a 1km of a

turbine that could be used for electricity bills or measures for greener homes that would reduce greenhouse gas emissions, or for security systems.

3.0 POLICY

Renewable Energy Directive

3.1 Directive 2009/28/EC on the promotion on the use of energy from renewable resources was issued by the European Parliament and Council on 23rd April 2009. It acknowledges the importance of controlling greenhouse gas emissions through the increased use of renewable sources together with energy savings and energy efficiency. The directive sets a target that 16% of the consumption of energy in Ireland be from renewable sources by 2020, and requires the state to make a national renewable energy action plan with targets for the share of energy from renewable sources that would be consumed in transport, electricity generation and heating, taking into account measures relating to energy efficiency on final consumption.

3.2 Ireland submitted a National Renewable Energy Action Plan under the directive in July 2010. It sets a target that 40% of electricity consumed in 2020 will be from renewable sources. One of the measures outlined in the plan is the continuation of the Renewable Energy Feed-In Tariff (REFIT). This is a financial scheme that is designed to incentivise the connection of new renewable electricity capacity to the grid by guaranteeing a minimum price for electricity from the sources approved under the scheme for 15 years funded from the PSO charged to electricity consumers. The REFIT 2 scheme opened in 2012. It is limited to a total 4,000MW of onshore wind, hydro and biomass landfill gas capacity, and a limit of 125MW for any individual plant. The Commission for Energy Regulation approved the 'Gate' process for the connection of generators to the transmission system, whose licensed operator is Eirgrid plc. The Gate 3 process commenced in 2009 and allows for the connection of 4,000MW of renewable energy generation capacity, and 1,700MW of conventional generation capacity to back it up.

National Planning Policy

<u>The National Spatial Strategy 2002-2020</u>

3.3 Section 2.6 of the strategy states that rural areas have a vital contribution to make to the achievement of balanced regional development. This involves developing their economic resources, including agriculture, tourism and renewable energy.

Guidelines for Planning Authorities on Wind Farm Development and Wind Energy Development 2006

(Where the term "guidelines" is used in this report, it refers to these guidelines unless the context requires otherwise)

3.4 Chapter 1 of the guidelines identifies the development of renewable energy sources as a national and European priority on grounds of energy and environmental policy, to be implemented with due regard to the binding requirements of the Habitats and Birds Directives. Chapter 3 states that the assessment of individual proposals for wind energy development must be undertaken on a 'plan-led' basis, which involves the setting out in development plans of areas considered suitable or unsuitable for wind energy development.

3.5 Chapter 4 recommends that developers should consult with the local community before submitting a planning application, but notes that this is not a mandatory requirement. Planning applications should include information on such matters as ground conditions; drainage; visibility; natural heritage; built heritage including archaeology; landscape issues; noise, shadow flicker and electromagnetic interference; adequacy of access roads for construction; cumulative impacts due to other projects; quarries/borrow pits; and decommissioning.

3.6 Chapter 5 refers to the environmental implications of wind energy development. Section 5.2.2 states that the potential impacts to birds are disturbance, barriers to movement and degradation of habitats, with collision mortality a low risk. Section 5.6 refers to noise. While is no set-back distance from houses is specified, it is indicated that noise is likely to a problem at less than 500m. A noise limit of 45dB(A) or a maximum increase of 5dB(A) above background levels at noise sensitive locations is considered appropriate., with a fixed limit of 43dB(A) at night. In low noise environments where the background level is less than 30dB(A) an absolute noise limit of 35-40dB(A)$_{LA90,\ 10mins}$ should be applied. Noise is unlikely to be a problem where the nearest property is more than 500m away. Section 5.10 states that interference with broadcast communication can be overcome by the installation of deflectors or repeaters. In relation to shadow flicker, section 5.12 states that the impact at neighboring offices and dwellings within 500m should not exceed 30 hours per year or 30 minutes per day. It goes on to state that at distances greater than 10 rotor diameters, the potential for shadow flicker is very low.

3.7 Chapter 6 refers to aesthetic considerations. It provides indicative and general guidance. It states that particular landscapes of very high sensitivity may not be appropriate for wind energy development. It states that turbines with blade tip heights of more than 100m were considered tall in 2005, but anticipated a change in these notions over time. It recognizes that concepts of association and symbolism are relevant, as well as conventional visual aesthetics. Section 6.9 refers to various landscape types. In hilly and flat farmland, the spatial extent of windfarms can be quite limited in response to the scale of fields and topographic features. Sufficient distance from buildings must be established to avoid dominance by wind energy development. With regard to cumulative impact, it is important that the wind energy development is never perceived to visually dominate, but as these landscapes comprise hedgerows and hills the views across the landscape are likely to be intermittent and the visibility of two or more development is usually acceptable. Section 6.9.3 refers to flat peatland, and states that wind energy developments can be placed almost anywhere in these landscapes from an aesthetic point of view. Section 6.16 states that the estimation of the likely impact on the landscape depends upon four parts – landscape sensitivity; visual presence of the development; aesthetic impact of the development on its landscape context; and the significance of the impact.

3.8 Chapter 7 refers to conditions that may be placed on grants of permission. Section 7.20 states that planning authorities may grant permission for a duration of longer than 5 years to ensure that permission does not expire before a grid connection is granted.

3.9 The minister published proposals for some revisions to the guidelines in December 2013 which would provide for: a more stringent absolute outdoor noise limit (day and night) of 40 dB for future wind energy developments; a mandatory setback of 500m between a wind turbine and the curtilage of the nearest dwelling for amenity considerations; and a condition to be attached to all future planning permissions for wind farms to ensure that there will be no shadow flicker at any dwelling within 10 rotor diameters of a wind turbine. The guidelines have not been changed to date. I informed those attending the oral hearing that the proposed changes were not a material consideration for the application under the planning acts, and that my assessment of the proposed development and that of the board would be carried out with regard to the guidelines that were in force at the time of those assessments. Speculation as to changes that the minister might make to the guidelines was deemed not to be relevant at the hearing. However I stated that if, after the hearing but before

I completed my report, changes were made to the guidelines so that it would be unfair to proceed to a grant of permission without allowing a further opportunity to persons to comment, then I would advise the board of a need for further consultation.

3.10 The Minister for Arts, Heritage and the Gaeltacht issued a National Landscape Strategy for Ireland in 2015. It includes an objective to prepare a national landscape character assessment.

Regional and Local Planning Policy

Regional Planning Guidelines for the Greater Dublin Area 2010-2022

3.11 Section 1.6 of the guidelines envisages renewable energy development occurring mainly in the west of the country, with the need for a strengthened grid to bring power to the Greater Dublin Energy where demand is greatest. Section 3.5.8 of the guidelines state that up to 240MW of wind generation is expected to be connected to the electricity grid in this region. Section 5.4.4 states that windfarm technology can provide a source of income for farmers, and that the development of new turbines needs to occur in the context of clear development plan policies and the national guidelines. Recommendation PIR in section 6.6.7 is that a study be undertaken on wind energy potential by local authorities in the region to provide new policies and guidance to potential projects.

Meath County Development Plan 2013-2019

3.12 Section 8.1.3 of the plan refers to renewable energy. It states that the county is committed to developing a more diverse range of energy resources, including wind, in order to deliver on the targets set out in the National Renewable Energy Action Plan. It sets an objective to "investigate the potential of renewable energy identified in the initial assessment areas with a view to developing a renewable energy strategy for the County". Section 8.1.5 refers to wind energy development. It refers to the wind energy development guidelines. It states that the landscape characterisation assessment identifies areas of the county that are sensitive to this form of development. Policy EC POL 20 of the plan is to encourage the development of wind energy, in accordance with Government policy and having regard to the Landscape Characterisation Assessment of the County and the Wind Energy Development Guidelines

(2006). Policy EC POL 21 is to support the preparation of a study on wind energy potential by local authorities jointly in the GDA.

3.13 The landscape character assessment set out in appendix 7 of the plan identifies the area in which the proposed development would stand as the North Navan Lowlands. It is categorized as being of moderate value, regional importance and moderate sensitivity. Its capacity to accommodate wind turbine development is rated as medium because there are few long range views except to the adjacent landscape character area. The number of viewers of such development would be high but their proximity to several large urban areas is likely to lower their sensitivity. Buried archaeology and upstanding historic features is a potential constraint on the location of turbines. No other area is rated as having a greater capacity. The landscape character area along the Blackwater valley to the south of the site is stated to have a very high value, high sensitivity, regional importance and a medium to low capacity to accommodate wind turbines.

3.14 Section 11.15.2 of the plan sets out development control standards for wind energy developments. It states that the visual impact is among the most important considerations. There is a preferential policy to avoid Natura 2000 sites or the flight lines of wintering birds. Topographical enclosures should be identified to minimise visual impacts and summits, and ridgelines should be avoided. A good acoustical design of turbines should guarantee that there are no significant increases in ambient noise levels that could affect private properties, wildlife or the tranquillity of the landscape.

3.15 The county development plan has many general policies and objectives to protect the environment and promote the sustainable development of the county. These are set out in the report of the planning authority on the application. Some of the more specific provisions which the board may wish to note include TRAN OBJ 8 which envisages a cycle/greenway along the disused railway to Kingscourt. CH OBJ 1 is an objective to protect and enhance the cultural landscape in the UNESCO world heritage site of Brú na Bóinne so that its integrity, authenticity and significance are not adversely affected by development, and to enhance views within and adjacent to the site. CH OBJ 22 is an objective to discourage development that would lead to a loss of, or cause damage to, the character, the principal components or the setting of historic parks, gardens and demesnes of heritage significance. CH POL 5 refers to World Heritage Sites on UNESCO's tentative list, which are the sites at Tara and the monastic site at Kells. LC POL 3 is to protect the archaeological heritage, rural character, setting and amenity of the Tara

landscape and that at Loughcrew and Slieve Na Calligh. Architectural Conservation Areas are designated at the Headfort Demesne and Moynalty village. Appendix 12 of the plan sets out 94 views and prospects that are designated for protection. Further views are specified for protection in the volume 5 of the development plan which provides settlement plans for Moynalty and Carlanstown. The settlement plan for Carlanstown envisages a community centre and recreational facilities at Deerpark Heights at the northern end of the village. The record of protected structures includes many structures in the vicinity of the site, including several at Moynalty and Headfort House, Curraghtown House MH011-107, Dowdstown House MH011-124, Carlanstown Bridge MH011-103, Mountainstown House MH012-100, Parsonstown Lodge and Yard MH012-155, Gravelmount House MH012-111, Rathkenny Cottage MH012-120, Rosmeen House MH017-123 and Fletcherstown Church MH018-101.

3.16 The planning authority proposed a variation to the county development plan on 3rd November 2014 that proposals for wind energy development should generally be restricted to sites where an average wind speed of more than 9m/s has been measured at 100m above ground level. The proposed variation was not made to the county development plan and it does not form a material consideration for the current application.

3.17 The Kells Town Development Plan 2013-2019 designates ACAs at Headfort Place and around the historic core of the town.

Natura 2000 network

3.18 The proposed development would not lie on or immediately adjacent to any Natura 2000 site. The Special Area of Conservation (SAC 002299) and the Special Protection Area (SPA004232) along the River Boyne and River Blackwater are designated along the Blackwater c3km south of the site. The larger part of the site drains to that river. The SAC is designated for otters, lampreys and salmon; the SPA for kingfishers.

4.0 SUBMISSIONS

From the applicant

4.1 The applicant made a submission at the start of the oral hearing. It argued that the proposed development was justified on environmental and economic grounds. It could reduce CO_2 emissions by 180,000 tonnes each year. It would contribute to meeting Ireland's target for renewable energy use, avoiding the possible imposition of fines by the EU, and reduce the requirement to import energy. Local benefits would arise from the rent and rates paid in respect of the turbines, as well as the community benefit scheme and near neighbour scheme. The former would provide €3.5m for local projects and initiatives over the lifetime of the project. The latter would allow grants of up to €5,000 to owner-occupied houses within 1km of a turbine which could be set against electricity bills or spent on certain improvements to homes.

4.2 With regard to site selection, the applicant referred to the extensive designation of Natura 2000 sites and the constraints on the capacity of the national grid in the west of the country and with the amount of previous and permitted wind energy development there. These factors increased the relative suitability of sites in the east, like this one, despite the lower prevailing windspeeds there. The applicant said that advances in turbine technology made the harvesting of wind resources in such circumstances more efficient than would previously have been the case. It referred to the existing windfarms at Mount Lucas in Offaly, and Monaincha and Lisheen in Co. Tipperary as examples of such windfarms in low-lying midland areas to which the proposed development would be similar. It also stated that the grid connection offer which had been made by the CER was for the supply of 120MW specifically to the Gorman sub-station, which determines the general area in which the applicant could erect turbines as cabling much excess of 20km would not be viable. The applicant said that the location of individual turbines was largely constrained by the need to be set back 500m from houses.

4.3 The applicant proposed amendments to the noise and shadow flicker conditions recommended by the planning authority which it claimed would be make them more consistent with the 2006 guidelines. In response to question, the applicant stated that a 10 year duration for the permission would be appropriate having regard to previous practice by the local authorities and the board, and it referred to the grant of permission for the Yellow River windfarm that the board made on 3rd June 2014 under 19PA.0032 in this regard. The

applicant stated that the operator of the proposed windfarm, as the occupier of the site, would be liable to enforcement action under the planning acts for any failure to comply with conditions that might be attached to a grant of permission.

From the planning authority

4.4 The planning authority submitted its report on the application in accordance with section 37E(4) of the act on the 11th December 2014. That report may be summarised as follows –

- The site is in a landscape that has a medium capacity to absorb wind energy development, according to the county development plan. The principle of the proposed development is supported by national, regional and local policy on renewable energy.
- The site selection report in the EIS is inadequate.
- The analysis of the likely impact on air quality and climate is generally acceptable, although further information should be sought regarding the impact of the borrow pits on air quality.
- The proposed noise mitigation measures may be sufficient but the location of the houses which would otherwise be effected by excessive noise should be mapped. There is a question whether adequate noise monitoring would be provided.
- There are anomalies in the shadow flicker assessment with regard to the application of wind direction and sunshine factors.
- An assessment is needed of the impact of the development on the public water supplies at Castletown, Moynalty, Lobinstown, and Nobber, and upon domestic wells. The impact of cabling on watermains also needs to be addressed.
- The chapter on soils and geology requires information on slope stability. It is not clear whether the borrow pits would be an adequate source for the material required for the development. The issue of waste movement and the requisite authorisation has not been considered in the EIS.
- The chapter on hydrology did not refer to ‘benefitting lands’ identified at the Castletownmoor cluster on floodmaps.ie, although the risk of flooding at Ardlonan Bridge was identified. The impact of the works at Stephenstown junction should also be assessed.
- The council’s transportation department consider that the development could be accommodated on the road network in the area. The planning authority is satisfied with the treatment of the telecommunications and aviation in the EIS.

- With regard to landscape and heritage, the conservation officer considers that the development would have a considerable impact when viewed from important historic vantage points such as Slieve na Calligh, Tara and the Hill of Lloyd. The development would have an adverse impact on Cruicetown Church and Cross. It would intrude into the historic core of Kells. Additional photomontages are need from the ACA at Headfort Place, and more assessment is needed of the impact on Headfort House. It would have a more than negligible impact on Curraghtown House and other protected structures. The planning authority considers that the applicant needs to demonstrate that the landscape can accommodate the development. CAAS Ltd. were commissioned to provide a study of the impact of the proposed view on various views and prospects designated for protection in the county development plan. It said that there would be significant impacts from Slieve Na Calligh, Lloyd, Tara, the Hill of Skyrne and the Hill of Ward, and from views 24, 25 and 26 from Rathkenny. It found no significant impact from Brú na Bóinne or the Hill of Slane. It said that there was a need for further study on the impact on views from Church Hill in Kells.
- With regard to ecology, the council's Heritage Officer states that the high bog recorded beside the proposed sub-station and T21 and T22 corresponds to the Annex I habitat of degraded raised bog. The development should not effect this area. the evidence of slippage referred to in the peat stability assessment near T13 should be mapped. Further information is also required about the flight line activity of Whooper Swans. T14, T19 and T20 are near bat roosts and should be omitted.

  The planning authority's report recommended that further information be sought from the applicant on various matters, including a new site selection report that had more wind monitoring data and addressed other substations on the national grid that had connection capacity; further visual analysis; archaeological testing; peat surveys; surveys of Whooper Swan and bats; the emissions of dust from borrow pits; noise and shadow flicker; hydrogeology; services in roads where cables would be laid; water supplies; flood risk and tree felling. The report also set out a list of conditions that the board might attach to a grant of permission, including limits on noise emissions and shadow flicker.

4.5 The planning authority provided written comments on the further information submitted by the applicant, which can be summarised as follows –

- It does not provide significant further information on site selection.
- The additional photomontages show a significant impact at Kilbeg, and upon Curraghtown and Rosmeen Houses. The obligation to conserve the setting of

protected structures does not depend upon public access to those structures. The development would detract from the experience and sense of place of the historic town and ACA at Kells. The visual intrusion at Headfort Place is not a major concern. The images taken from the front driveway of Headfort House shows that the visual impact is not excessive from those particular vantage points. However views north across the parkland are also relevant to the character of this ACA. The additional photomontages raise issues of visibility from Moynalty and Carlanstown.

- A second report from CAAS Ltd. reaffirmed its position that the development would have a significant effect on views from Slieve na Cailligh, the Tower of Lloyd, Tara, Skyrne Church, the Hill of Ward, as well as views Nos. 24, 25 and 26 from Parsonstown/Rathkenny.
- The council's Heritage Officer considered the matter of peat stability to have been properly addressed in the further information, as was Whooper Swan activity. T14, T19 and T20 should be relocated as the mitigation measures for bats are not adequate.
- The Senior Executive Engineer in the council's environment section is satisfied with the further information in respect of air quality, noise and shadow flicker.
- The county council, on behalf of Irish Water, will require monitoring of borehole sources for public water supplies and the carrying out by the applicant of remedial measures if any impact arises from the proposed development.
- The council is satisfied with the proposals for laying cables along public roads, and with the information regarding flood risk at Ardlonan Bridge and Stephenstown junction. A condition regarding works in peatland is provided.
- There are no further queries regarding the importation of material, tree felling or flood risk.

4.6 At the oral hearing the planning authority indicated that its concerns regarding the site selection process and the impact of the development on the landscape and the cultural heritage of the area remained, and that these issues had not been resolved. It accepted the revised wording of conditions regarding noise and shadow flicker put forward the applicant.

From prescribed bodies

4.7 The **Department of Arts, Heritage and the Gaeltacht** made submissions on the application and upon the further information submitted by the applicant. They can be summarised as follows –

- With regard to archaeology, the proposed development would have no direct impact on any known remains. However there are archaeological features in the area on elevated sites that have views over a wide area. These include the World Heritage Site at Brú na Bóinne, and the candidate sites on UNESCO's tentative list that includes the Royal Site at Tara and the medieval monastic site at Kells. The impact on the wider setting of these archaeological remains is of prime importance. The proposed development would provide an unwelcome cumulative modern intrusion into the setting of Brú na Bóinne, and would have a negative impact on the setting of Tara and the Hill of Lloyd. There are national monuments at the Hill of Ward, Loughcrew, Trim Castle and the Hill of Slane, and a medieval church at Cruicetown. There are numerous recorded monuments in the vicinity of the site, including the standing stone at Gravelstown. The department is of the view that the area is unsuitable for a development of the type and scale proposed. No further comments were made on the topic in the department's second submission.

- With regard to architectural heritage, the board were advised to give serious consideration to the impact of the proposed development on Brú na Bóinne, Tara, Kells and other elements of the cultural heritage. The department's second submission also referred to Headfort House and its demesne.

- With regard to nature conservation, the department advised that the monitoring and mitigation measures proposed by the applicant for bats and Whooper Swans would need to be implemented in full. The board should ensure that the draft Construction Environmental Management Plan contains adequate detail to allow an appropriate assessment in respect of the SAC and SPA at the River Boyne and Blackwater. The final choice of wind turbine should not differ significantly from that assessed, with a hub height of 109m and a rotor diameter of 120m. The cumulative impact of the development with other projects including the North-South interconnector should be considered by the board. The department will not be involved in the implementation of mitigation or monitoring measures. The second submission stated that the board needs to consider whether the details at page 109 of the further information are adequate to allow an informed decision as to their efficacy as mitigation in the event that monitoring indicates that mortality of birds of bats needs to be

addressed. The board's role as the competent authority and the department advisory role is emphasized.

4.8 The **Environmental Health Officer** at the Health Services Executive made a submission on the application. With regard to noise it said that the document ETSU-R-97 does not have statutory status in Ireland and sets prescriptive limits rather than providing a method of to describe or assess the likely impact of a wind energy development. The World Health Organization in its Night Noise Guidelines for Europe, 2009 recommends that the population should not be exposed to of 40dBLnight so an absolute night time exposure limit of 43dB(A) does not protect health. The Lnight level is a A-weighted long term average over all the nights of a year. There was no map or rationale for the location of the baseline noise monitoring locations. There was no table in the EIS showing averaged background noise levels against the predicted noise levels which makes it difficult to correlate the likely need for mitigation measures to be correlated to particular houses. The tables in appendix E were not clear on the variations in wind speed and their effects on predicted noise levels. The proposed mitigation measures, which appear to involve slowing or stopping turbines when noise limits are breached, are not properly described. While the measures might reduce noise to the limits prescribed the Department of the Environment, these are not considered by the World Health Organization to protect health. The predicted change in noise levels at particular houses could exceed 10dB, which the BS4142:1997 on rating of industrial noise effects on residential areas identifies as a likely significant adverse effect. The EHO does not agree that houses occupied by persons connected to the windfarm should have a lower limit with respect to shadow flicker. The application of the wind direction and sunshine factors needs to be re-considered. It should be clear how the public consultation process carried out by the applicant informed decision making. An effective complaints should be put in place to ensure that the mitigation measures for noise and shadow flicker achieve the results predicted in the EIS.

4.9 **Inland Fisheries Ireland** made submissions on the application and the further information. The initial submission stated that the potential impact on fisheries would arise largely if good practice was not observed during the construction phase, with the release of silt a particular concern. All watercourses should be effectively bridged prior to the commencement of development. General advice on the approach to construction is provided. Works to watercourses should

generally occur from July to September. No additional comments were provided in the second submission.

4.10 **The Heritage Council** provided a submission on the application. It states that Ireland needs a coherent system of landscape character assessment. The impact of the development of the Hill of Tara needs greater examination and clarification, as does the impact on Headfort House. The impact on the Hill of Lloyd and Kells seems excessive. The windfarm would have an impact on the streetscape at Kells leading to the medieval monastic site. The view from the Hill of Lloyd would be transformed. The development would also be visible from Loughcrew. A setting study for Tara, Brú na Bóinne and Loughcrew should be carried out. The cumulative impact of the North-South interconnector should be taken into account. The heritage impact assessment in chapter 14 of the EIS is unclear, underdeveloped and consistent. The Landscape Institute defines the meaning of the "impact" and "effect".

4.11 The **National Roads Authority** made submissions on the application and the further information. The initial submission noted that the access to T45 and T46 was from a national road where the 80kph speed limit applies, and so would be contrary to policy. Any works to the roundabout at the junction of the N52 and M3 to facilitate the haul route would require approval under the roads acts. Any works to roads should be acceptable to the roads authority. The proposed cabling on public roads may be subject to licence. The NRA re-affirmed its position in letters dated 1st and 27th May 2015.

4.12 **Fáilte Ireland** made a submission on the application. It referred to the tourist attractions in the Boyne Valley, and the role of Kells as a tourist centre. Surveys have shown that some tourists find wind farms off-putting. Concern is expressed regarding the visual impact on the development at Brú na Bóinne and Tara. The development may affect the tourist amenity of the Boyne Valley Drive. The proposed development was not assessed in light of alternative sites outside Meath. It would have been preferable if a comprehensive renewable energy strategy was in place for the county was in place against which the proposed development could be reviewed.

4.13 The **Geological Survey of Ireland** provided a submission which did not refer to the proposed development in particular.

4.14 **Irish Water** made submissions on the initial application and the further information that raised no objection in principle to the development. It sought details and recommended conditions in line with the reports from the Water Services Department of the county council that were also included in the submissions from the planning authority.

4.15 **An Taisce** made a written submission on the application and an oral submission at the hearing. It stated that the application appeared to refer to three separate clusters and that the route and impact of the grid connection were not properly addressed in the EIS. The board would therefore need to determine whether the application was valid. A cumulative assessment which took account of the Maighne and Cregg windfarm proposals is required. With regard to national policy on renewable energy, the applicant needs to demonstrate that other more suitable locations are not available to meet the necessary targets. The county development plan did not envisage the scale and type of wind energy development now proposed, which reflects a developer led site selection process. An equitable sharing of the financial benefits of wind energy development is needed. The board should mind the precedents established by its refusal for windfarms at Sragh Co. Clare (03.PA0025) for contravention of local policy, and at Gaybrook, Westmeath PL25. 237728 due to the impact on demesne landscapes. Ireland needs to fulfil its obligations under the European Landscape Convention. It is notable in this regard that Landscape Conservation Areas have not been implemented. Profligate dispersed housing in the countryside has effected the capacity of the area to accommodate wind energy development. The impact of the development on horse farming requires significant further investigation, and serious consideration needs to be givens the cultural heritage including Brú na Bóinne, Kells and the Hill of Lloyd.

At the hearing An Taisce also referred to the proposal to develop a greenway for walking and cycling that would run between the proposed turbines. This would extend the economic benefits from tourism in the Boyne valley into the local area. The rolling pastoral landscape of the area is unique and special. There is a serious and over-riding concern with the public consultation which was a developer led strategy and approach. Any large scale infrastructure proposal should be plan led. The Aarhus principles apply to private developers. Article 6(4) has not been complied with because of a lack of proper preliminary public participation when all options are open. The strategic environmental

assessment of the county development plan was flawed because this type of development was not envisaged. Therefore the applicant is under a moral and legal obligation to withdraw the application. The development would have a large cumulative impact on residential amenity. It would also effect cultural heritage, including Loughcrew, which should be included in an extended World Heritage Site with Brú na Bóinne, Slane, and Headfort Demesne which is one of the more important houses in Meath. The draft national landscape strategy published in 2014 needs to be adopted. It is not enough to confine protection to outstanding or beautiful landscapes. The precautionary principle set out in article T191 of the EU Treaty should be followed by the board. There are other means to achieve the objectives of energy policy, including reducing demand and the development of other renewable energy sources and windfarms elsewhere. An Taisce agrees with the 2020 target of 40% of electricity generate from renewable sources but this does not validate any particular site over another. Off-shore windfarms would be preferable along the east coast. Other onshore sites could be further from houses and farms. A community led sustainable action plan for renewable energy would provide an alternative to the current application, which does not reduce energy demand in transport or heating. Proposals for decarbonisation must be considered with due regard to residential amenity, cultural heritage and the landscape. It is unjust to impose development on divided communities. Local involvement can increase acceptance and support of development, as demonstrated by the Danish experience where shares in windfarms are sold to the local communities. North Meath is not suitable for the scale of the proposed development, but might be for alternative bio-energy developments.

<u>From public representatives</u>

4.16 **Senator Thomas Byrne and Councillor Wayne Harding** made a submission on the application. Senator Byrne made a written submission on the further information and spoke at the oral hearing. The initial submission stated that the turbines would be too high and would damage the landscape, heritage and tourism. They would also inure residential amenity due to noise and visual impact. The information and assessment provided on these topics was inadequate, and there is a lack of proper studies on the impact of the proposed development on the environment and human health. The road network in the area is not adequate to support the proposed development. The development should not proceed on the basis of the 2006 guidelines which are out of date and which envisaged smaller turbines than those currently proposed. The

submission on the further information also stated that it would be unfair to proceed with the current application and oral hearing while the judicial review of the pre-application procedure was ongoing.

The submission at the oral hearing stated that there was a huge lack of public consultation on the application. Senator Byrne questioned the identity of the applicant. He criticised the use of the placename "Emlagh" to identify the project, as it failed to clarify its location and scale. Mr Jarlath Fitzsimons, for the applicant, responded that Emlagh was the townland where the proposed sub-station would be, and that the applicant was North Meath Wind Farm Ltd., which is a different company from Element Power Ireland Ltd, which was the prospective applicant for the pre-application procedure. Senator Byrne expressed his unhappiness with this position, as well as with the history of the Greenwire project . The advertisement of the public consultation carried out by the applicant in the Meath Chronicle was inadequate, while the holding of meetings in Carlanstown implied that others to the east of the site would not be effected. The purpose and implementation of the near neighbour scheme is objectionable. The lack of clarity about the revision of the guidelines hinders public participation. This type and size of turbine was not envisaged by the 2006 guidelines or the county development plan, and to proceed on such an outdated basis would be bad planning. The costs arising from participation at the oral hearing were an unfair burden on local communities. The substantial changes made to the EIS at the oral hearing were also unfair on to them, and the cumulative EIS document should be put out to public consultation. The proposed development would discourage further settlement in the Gaeltacht. This matter was not adequately addressed in the EIS. The area has a substantial tourist resource that is being marked as part of "Ireland's Ancient East". An Eirgrid study for the 2010 North-South interconnector showed the Whooper Swans lived and bred in the area. The Wildlife Acts did not provide an exemption for wind turbines from the prohibition against the unlicensed killing of birds. The proposed turbines would be massive and visually obtrusive and would seriously detract from the landscape. The oral hearing should be deferred.

4.17 **Councillor Eugene Cassidy** made a submission on the application and spoke at the oral hearing. It stated that development represented haphazard planning with a scattered layout of turbines. Meath and Kells are of particular importance for heritage, while the proposed development would be visible from the Tower of Lloyd, the Hill of Slane, Headfort Place and Headfort House. The development would detract from the landscape and would be highly intrusive. It

would be better to locate such turbines in a mountainous area where hills could provide them with a backdrop. The development would affect views from the Boyne valley and the proposed greenway. It would have a negative impact on tourism as visitors would avoid an area seen as polluted and industrialized. A study has shown that livestock reared within 50m of turbines gained less weight than those raised 500m away, indicating that turbines put stress on livestock. They also have a negative impact on birds. At the hearing Cllr Cassidy submitted a map with an outline of the further extent of the proposed development. He stated that this line enclosed 130km^2 that contained 1,000 houses and the villages of Moynalty, Carlanstown, Lobinstown and Castletown. An entire community would therefore be living within a windfarm. 18 turbines would be visible from Carlanstown through 180°, or 220° from Deerpark House where the community is to develop recreational amenities; from Castletown 13 would be visible to the east and 20 to the south; 13 would be visible from Lobinstown through 130° , or 270° in views from Killary Church; 20 would be visible from Dowdstown House; while 25 would be visible from Kilbeg school across 220°. Planning permission has been granted for the greenway for 8km through this site. A funding submission from the council stated that the greenway would attract 150,000 users per annum and contribute €5.9m to the local economy. There is no comparable windfarm that would envelop a community in the way the proposed one would. It took 5,000 years for Meath to become the heritage capital of Ireland, this should not be thrown away in 5 minutes.

4.18 **Deputy Regina Doherty** made a written submission on the application and spoke at the oral hearing to object to the development. The written submission stated that the turbines would be too close to houses. The development would change the impression of the area to an industrial one. It would not be compatible with the heritage of the area, including Kells, Tara and Brú na Bóinne. It would reduce property values in the area. The matter of shadow flicker has not been addressed. The development would threaten wildlife. There has been a failure of community interaction. Proper access was not available to the drawing and maps of the application as is required under the Aarhus directive. The development would have a negative impact on the landscape, and would represent a very expensive way of reducing CO_2 emissions. A decision on the application should only be made on the basis of updated guidelines. At the hearing Deputy Doherty stated that written submission reflected the range of representations made to her concerning the development. The ongoing public consultation in the area regarding wind energy development has followed a convoluted and confusing process and has

not been accepted by the local community. The near neighbour and community benefit grant schemes operated by the applicant are manipulative and have been characterized by some as bribery. There is a serious issue in the applicant for planning permission being a different company from that holding the gird connection offer. There is justifiable scepticism about the likely contribution to the achievement of the country's 2020 targets. The EIS refers to flora and fauna but does not deal adequately with the impact on people. The development would sterilize many people's land and the impact on the value of their homes would be evident to a reasonable person. The proposed development is therefore causing stress to people in their homes and the board should be mindful of this. Meath is the heritage capital of Ireland, and the impact upon that status of the proposed development would be comparable to the bridge at Slane that the board refused to approve.

4.19 **Councillor Sean Drew** made a submission on the application and spoke at the hearing. The submission stated that the proposed development would have a damaging impact on the area's landscape and heritage and diminish tourism. The roads infrastructure in the area is not adequate to allow the development. The proposed windfarm would have a negative effect on Whooper Swans, bats and the bloodstock industry. It would also contravene the draft variation to the county development plan that the planning authority adopted. Councillor Drew expanded upon the submission at the hearing. Section 11.5 of the county development plan states that renewable energy proposals must take account of residential amenity, the landscape and heritage. The goals of the plan seek to promote the county as a tourist destination, while many views and prospects are protected. The heritage status of Kells is central to the town's development plan. The council's conservation officer's position is that these issues were not properly addressed, in particular the impact of the development on the monastic core's candidate status for UNESCO's World Heritage Sites. The proposed development would undermine the achievement of World Heritage status. The CAAS report illustrated the serious impact that the development would have on designated views, including those from the Tower of Lloyd and the Hill of Tara. There is no strategy supporting the location of wind farms in north Meath. The limited wind speeds in the area make it unsuitable for this type of development. This is illustrated by the situation in Mayo, where there is no policy in favour of wind energy development where wind speeds are less than 8m/s. The elected members of the council resolved in November 2014 to support such development only where wind speeds of greater than 9m/s were recorded. The council's Chief Executive advised that guidance from the Department of the Environment should be sought on this matter, but the

department has not responded to the council's request. The failure to respond stymied the variation of the county development plan to control industrial wind turbines based on wind speed efficiency. However it is evident that the councillors are opposed to the kind of development proposed.

4.20 **Deputy Helen McEntee** made written submissions on the application and further information, and spoke at the hearing. The initial submission stated that the development would destroy the landscape. Industrial turbines are not compatible with tourism in the area. The emission of noise from the turbines was a potential threat to health, and a copy of a letter from a policy adviser to the minister for health was submitted which stated that there was a consistent cluster of symptoms related to living in close proximity to windfarms and that windfarms do not represent a threat to public health. The submission on the further information stated that it did not address her concerns. At the oral hearing Deputy McEntee said that her family was from Castletown. The vibrant rural community had been devastated by the proposal, which had already caused significant division and contention. Permission should be refused. The location was inappropriate for a windfarm. It is not justified by the county development plan. The development would have a significant effect on the environment, including wildlife. The road network was not adequate to cater for the development. The windfarm would cover a populated area of 55 townlands. The turbines would tower over the community and prevent young people building in the area. The windfarm would be visible over a wide area that is rich in heritage. The board should follow the precedent set by the refusal of the Cregg windfarm. The planning authority has stated that it is not satisfied with the potential impact of the development on the landscape and heritage. The damage to tourism, including the assets that form part of Ireland's Ancient East and the proposed greenway, would coast more jobs than the development would create. 2,300MW of wind energy generating capacity has been installed, while average demand for electricity in the state is 3,300MW. It would be wrong the unduly rely on wind energy development on-shore to achieve environmental and climate change objectives. The wind resources of the area were not considered crucial to Irish policy when the Greenwire project was still in progress. The maintenance and decommissioning of the access tracks has not been properly addressed. The failure to adequately consult the public from the start of the project is a big obstacle to wind energy development. The current guidelines are inadequate to assess the proposed development. In response the applicant referred to the landscape character assessment in the development plan, and stated that the windfarm operator would be responsible for the maintenance of the access tracks as stated in section 2.6 of the EIS. If

the board wished to specify the treatment or removal of the access tracks at the end of the operational life of the windfarm, then it could do so by condition. Deputy McEntee reiterated her position that the proposal was not in accordance with the development plan.

4.21 **Councillor Paddy Meade** made written submissions on the application and further information and spoke at the hearing. The initial submission stated his objection to the development which would contravene the draft National Landscape Strategy and interfere with the SAC. It would be contrary to the renewable energy directive to have turbines located so inefficiently where windspeeds are less than 9m/s. The location of the proposed windfarm would also be contrary to national policies with regard to tourism and heritage, and the council's tourism and heritage board's position on the matter. Housing development with much lesser visual impact would not be permitted in this area, and a grant of permission would undermine previous planning control. Inadequate access was provided to the application drawings and documents, which are too big to download easily or read online and too expensive to buy, contrary to the requirements of the Aarhus directive. The subsequent submission also stated that inadequate information was given on the grid connection for the proposed windfarm.

At the hearing Cllr Meade said that the case involved big business vs. the little man and that it was sad that a project like this could go ahead. The councillor chairs the district committee that contains two of the townlands encompassed by the development. Neither the Meath Chronicle nor the Irish Times are for sale in Lobinstown and so the application was not properly advertised. No proper effort was made to carry out public consultation in the Laytown/Bettystown district. The photomontage from Newgrange is taken from the wrong side, where the mound blocks the view of the turbines. Not all the photomontages requested by the planning authority were provided. Slieve Breagh is of historical significance but was not cited by the applicant, nor were the watermills on the Dee. The applicant responded that the impact of the development at Slieve Breagh was considered at Appendix L2 of the EIS at section 5.4.1.5. It rejected the assentation that proper consultation had not been attempted, and stated that the provisions of the Aarhus directed had been properly transposed and implemented in Ireland. Cllr Meade said the applicant seems to have overlooked that not all the turbines would be in the district of Kells without proper notice to the neighbouring parish of Ardee. Broadband is not available in Lobinstown to view the file online. It would be too expensive to buy a copy of the application, and the council office in Duleek did not have a

copy to view. This lack of information contravenes the Aarhus directive. The making of the development plan is the last power of local government. If the councillors had any say they would not allow the proposed development. The planning authority's staff resources limit its capacity to examine the application. Less than a quarter of the required information is provided. Bord Fáilte and the Department of Arts, Heritage and Local Government should have attended the hearing to demonstrate the impact of the development on the marketing of the tourist product in the Boyne Valley. Turbines will be visible from Slane, Newgrange and Knowth. The perceived impact of the turbines would damage employment in the bloodstock industry. The submission of information at the hearing by the applicant contravenes the Aarhus directive. A second oral hearing is needed of which at least two months' notice would be given.

4.22 **Councillors Darren O'Rourke, Michael Gallagher and Johnny Guirke** made written submissions on the application and the further information. The submission on the initial submission stated that the scale of the development was enormous and it would give concerns over noise and shadow flicker and have an adverse impact the landscape and tourism. The scale would contravene the regional planning guidelines. The assessment of site suitability is inadequate as other locations may be better suited to wind energy development. The windspeeds recorded on the site were only 7-7.5m/s. The EIS for the Yellow River application (PA0032) stated that speeds below 8m/s render wind energy development uneconomic, as does the wind energy strategy for Mayo. There are windier sites in the west. Directive 2009/28/EC requires the costs incurred in moving to a low carbon economy to be minimized, and there is a need for economic growth in the country. A national policy that seeks wind energy development in every county would fail to comply with these requirements. The directive also requires the provision of adequate grid access for remote, windier regions. The development as proposed would provide 161MW of generating capacity although the applicant only has permission to connect 120MW to the grid. The proposed development might use grid capacity that could accommodate industries using combined heat and power plants that might export power to the grid. There is genuine concern at the impact of the development on human health and further research is needed on the matter. The submission on the further information noted that preponderance of objection over support in the initial round of consultation, putting the former's share at 80%. The site is not suitable for wind energy generation and the option of offshore generation should be preferred. If the Danes can do it why can't we? These generously subsidized assets should be

put where they could be most productive Many people in the area are noise sensitive, including autistic persons, and it is wrong to disregard them.

Deputy Peadar Toibin spoke on behalf of these councillors at the hearing indicating his support for wind energy and the need to achieve the right mix of approaches including offshore and solar generation and demand reduction. A person's right to a safe home is crucial and many felt that the development threatened this. Industrial and rural areas are exclusive and the planning system was designed to prevent their conflation There is a major fear regarding the impact of the wind turbines on health, and it would be folly to proceed when the health issue is still subject to expert debate and the issue of Wind Turbine Syndrome is outstanding. Disruption to sleep can become an obsession. The erection of turbines would push people into negative equity trapping them in the situation. It would have negative impact on livelihoods in farming, bloodstock and tourism. Meath has an international status in relation to heritage. The proposed greenway has the potential to be compared to the Camino de Santiago. The current ownership models are a barrier to wind energy development due to the issue of big businesses causing environmental damage and leaving. Who would pay a bond if the business collapses? The 2006 guideline are not currently adequate. Detailed legislation on the location of windfarms has been proposed. The strategic infrastructure procedure circumvents the democratic process at the local authorities. Radical change in policy and legislation is imminent. There is an imbalance in the resources between the two sides. The material revisions to the proposal and EIS necessitate the opportunity for local persons to research and respond to them. Cllr O'Rourke stated that the elected members resolved to express their opposition to the development at their June meeting. The policy and control context cannot support a proper consideration of the proposed development. The application is motivated by profit in a narrow scope. An improved national strategy on renewable energy is required. There will be a bad impact on the Gaeltacht. The proposal needs to be considered as a human story. Citizens have a right to shape the environment in which they live. The proposal is not a positive or appropriate development and would bring no luck to anybody. Cllr Gallagher said the development was wrong on heritage and tourism grounds. The rates paid to the local authority would not recompense the economic loss to the county from tourism. The development would devalue property in the area and would prohibit rural housing over a vast area. There would be very little return for the damage which it caused. The elected representatives of the county are opposed to it but have little role in the process.

4.23 **Councillor Sarah Reilly and Eugene Cassidy** made a written submission on the application which objected to the development. It stated that the scale of the development was enormous and it would give concerns over noise and shadow flicker and have an adverse impact the landscape and tourism. The scale would contravene the regional planning guidelines. The assessment of site suitability is inadequate as other locations may be better suited to wind energy development. The windspeeds recorded on the site were only 7-7.5m/s. The EIS for the Yellow River application (PA0032) stated that speeds below 8m/s render wind energy development uneconomic, as does the wind energy strategy for Mayo. There are windier sites in the west. Directive 2009/28/EC requires the costs incurred in moving to a low carbon economy to be minimized, and there is a need for economic growth in the country. A national policy that seeks wind energy development in every county would fail to comply with these requirements. The directive also requires the provision of adequate grid access for remote, windier regions. The development as proposed would provide 161MW of generating capacity although the applicant only has permission to connect 120MW to the grid. The proposed development might use grid capacity that could accommodate industries using combined heat and power plants that might export power to the grid. There is genuine concern at the impact of the development on human health and further research is needed on the matter. The submission on the further information noted that preponderance of objection over support in the initial round of consultation, putting the former's share at 80%. The site is not suitable for wind energy generation and the option of offshore generation should be preferred. If the Danes can do it why can't we? These generously subsidized assets should be put where they could be most productive. Many people in the area are noise sensitive, including autistic persons, and it is wrong to disregard them.

Cllr Reilly spoke at the hearing. She stated that the development is for private gain and should not be regarded as strategic infrastructure. Construction noise will be protracted and will have a negative effect. It may be prolonged by archaeological requirements. 143 trips a day by heavy vehicles will be generated around villages and rural roads which cannot cope with them, posing a particular danger to cyclists. 196 more trips by light vehicles would also occur. There are some terrible roads in Meath which would deteriorate due the development. There would be a negative impact on the everyday lives of autistic persons who are sensitive to noise. The Department of Health has stated that more research is needed on the health of autistic persons. The vibrations and low frequency noise generated by the operation of the windfarms would effect those with epilepsy or autism who may be surrounded by turbines. In response, the applicant referred (for the first of many times at the hearing) to

the written response to parliamentary question 13227/15 given by the minister in the Dáil on 31st March 2015 where he quoted the (Ireland's) Deputy Chief Medical Officer who quoted (Australia's) National Health and Medical Research Council's (NHMRC) statement of 11th FeBrúary 2015 that "after careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects on humans". Councillor O'Reilly stated that, where there are inconsistencies in the research into the effects of wind turbines on autistic children, the onus should be on the applicant to disprove any such effect.

From other persons

4.24 There were many other written submissions on the application and the further information, as well as oral submissions at the hearing. The content of these submissions and the applicant's responses to them contained much re-iteration. It is therefore considered that a clear summation of the information and arguments submitted with respect to the proposed development requires a thematic order. A continuation of the sequential summary of the submissions from the applicant, planning authority, prescribed bodies and public representatives would not be clear or useful. The summary below refers to the identity of observers only where this may have a particular relevance to the point made. It should not be inferred from the absence of such an identifier that other persons did not make similar points with equal cogency, or that the persons identified did not make other points. Many of the observers raised issues in relation to their own person or property that applied to many other persons or properties. These issues are not necessarily set individually in this report. The board will have copies of all the written submissions made to it. There is also an audio recording of the oral hearing, whose proceedings were generally in order. Around a quarter of the written submissions expressed support for the proposed development. These submissions were terse and tended to make made similar points. Other than the applicant, no person spoke in favour of the proposed development at the hearing, although the Irish Farmers' Association did not actively object to it. The submissions in favour of the development are therefore summarised first, as by far the larger part of the consultation on this application involved persons objecting to the development, the applicant attempting to refute the objections, and the same persons then re-stating their objections.

4.25 *Submissions in favour of the development:*

- The development would contribute to lower energy prices and would have a positive economic effect.
- The development would assist in mitigating climate change.
- Wind farms would reduce the need to import fuel for electricity generation and improve the security of supply.
- The development would provide additional income for those in the area.
- The landowners who have a legitimate interest in the development have been intimidated.
- Wind farms provide a use for land that is marginal for agriculture. The construction of tracks over the site would improve access to land for agriculture and improve its drainage.
- There would be opportunities for local employment during construction.
- Several observers have lived and worked close to turbines similar to those proposed without ill effects.
- Turbines in Co Cavan have not had a negative effect. The noise levels generated in the similar Lisheen windfarm are not a threat to amenity or health.
- The conservation of Kells's status as a heritage town does not require the exclusion of modern elements from its vicinity. The Rock of Cashel, the Cliffs of Moher and the Burren share panoramas with wind turbines without undermining their character.
- It would be wrong to exclude large areas of land from wind energy development on the basis of unfounded claims from those involved in the bloodstock industry. Horse breeding is not subject to any planning control and so it would be arbitrary, capricious and unfair to allow its presence to undermine a neighbour's right to develop his land in accordance with public planning policy when the objections are based on suppositions and assertions that are not backed by evidence. Horses have been kept beside working farms where machinery regularly gives rise to noise and movement that are much louder and more sudden than anything that would be caused by a wind turbine.

- A small stud farm has been bought in the area at the asking price after the submission of the application, so it does not appear as if claims regarding property devaluation are well founded.

Submissions against the proposed development by topic -

4.26 Energy policy, economic impact and the need for the development

- Wind power makes electricity more expensive as it requires subsidies and other power sources to provide back-up supplies. The state aid required for such inefficient generation would contravene EU and national policy

- The country already has enough electricity generating capacity. Peak demand of 5,000MW requires an installed generating capacity of no more than 6,000MW. 7,400MW of dispatchable energy generating capacity is already installed, with another 2,000MW of wind generating capacity. No more than 50% of the load on the grid should be from non-dispatchable sources. There is no justification on energy policy grounds for more wind energy. The provision of additional windfarms reduces the likelihood that any one would be called upon to feed into the grid, and so their marginal contribution to the reduction in carbon emission falls as more are built. The proposed development would not be of strategic social or economic importance to the state and would not fulfil the criteria set out in section 37A(2) of the planning act. The comes a point where the board will have to determine whether the provision of another windfarm is likely to help reduce carbon emissions. There is no strategic imperative to build a windfarm on any particular site.

- The proposed 120MW of generating capacity would only add 15MW to the national capacity if judged by proper engineering and scientific criteria. The proposed expansion of electricity generation from wind will require more subsidies and will lead to higher prices for consumers. The description of development stated that there would be 46 turbines each with a capacity of 3.5MW, which implies a total capacity 161MW. The oversizing of the turbines appears to be a hedge against inadequate wind speed on the site.

- Neither the National Renewable Energy Action Plan nor the REFIT programme were subject to SEA and so they cannot form a basis for decision making on environmental matters. Neither do they meet the Aarhus requirements.

- The calculations of the saving of CO_2 equivalent emissions from the development provided by the applicant are misleading because they do

not discount the emissions from electricity generation by peat and coal which is being phased out. So the saving from this project would be 64,754 tonnes pa rather than 180,000 as claimed by the applicant.

- Adequate information was not submitted about the wind regime on site.
- The location of the proposed windfarm in an area without a high wind resource is not justified. The need to stop the operation of turbines to comply with the limits on noise and shadow flicker at nearby houses would further undermine the purpose of a windfarm there. Wind energy development should be diverted elsewhere further from people's houses. Mayo, for example, would be better place for wind farms as is demonstrated by the wind energy strategy in its development plan. Limits on grid capacity there would not be an argument in favour of the proposed development because it would contravene article 16 of the renewable energy directive that requires the system operator to provide access to an adequate grid to support renewable energy generation.
- The board should investigate whether there are better places for this type of development or better ways to meet renewable energy targets or better ways to reduce greenhouse gas emissions which would have lower environmental or economic costs taking into account the opportunity costs associated with the proposed development.
- The board should investigate the extent to which permissions for renewable energy proposals are implemented. The development now proposed would take capacity on the national grid serving the area that might be better used for other and better forms of renewable energy that would reduce the output of greenhouses gases or would be locally owned. The board should have regard to the ECJ case C-573/12 which found that Sweden could not restrict its subsidies of electricity depending on whether the generation occurred in Sweden.
- The grid connection offer Ref. No. TG86 that the applicant cites is actually for the off-shore Oriel windfarm. The use of limited grid capacity for this proposed development would restrict the consideration of alternative sites and generation sources. The EIS is predicated on a grid connection to the Gorman sub-station that has not been demonstrated. The development would include a substantial internal private electricity network that would adversely affect the development of such alternative local sources of renewable energy as straw, manure and geothermal energy at Tara mines. So the development would be contrary to article 16 of the renewable energy directive.

- Wind turbines are obsolete now that the cost of solar panels has decreased.

- The positive contribution of the development to the local economy would be miniscule. The benefit of development contributions and rates to the council would be smaller than the loss in property tax due to the fall in house prices.

- The development would damage the landscape and heritage of the area and so would undermine the potential of its tourist industry, particularly along the Boyne Valley and at Kells. This potential is reflected in Fáilte Ireland's campaign to promote tourism in Ireland's Ancient East. That body produced a survey that found that 24% of tourists dislike windfarms. A 24% reduction in tourist revenue would be catastrophic. The damage in this regard would be greater than any economic benefit arising from the scheme. It was noted that a cost benefit analysis was not provided by the applicant.

- The development would compromise farming and farmers' ability to manage their landholding.

- Full details are required of all contacts with landowners to allow the the economic impact of the development to be calculated. The board cannot adjudicate on the application unless it has full information on where the all the costs and benefits from scheme would fall.

- Implementation of passive house standards would be a more effective and efficient way of reducing carbon emissions than building more windfarms. An emphasis on energy efficiency would be in keeping with the renewable energy directive.

- The windfarm would have a generating capacity greater than 125MW, and so requires approval from the European Commission as state aid. European law requires the minimum amount of state aid to be provided to secure objectives and it has not been demonstrated that the proposed project is the cheapest way to achieve the targets under the renewable energy directive.

In response to these points the applicant said –

- The need for the project was established by the need for Ireland to meet its obligations under the Renewable Energy Directive 2009/28/EC to

provide 16% of its energy from renewable sources. Under the NREAP Ireland has committed itself to achieving this target by generating 40% of its electricity from renewable sources by 2020. 3,500 to 4,000MW of renewable electricity generating capacity would have to be installed to meet this legal obligation and avoid resultant fines being levied on the state. Only 2,816MW has been installed so far. The additional 120MW provided by the proposed development would be significant in this regard. The need for renewable electricity generating capacity is increased by the likely failure to meet the targets set out in the NREAP for the use of renewable energy in 2020 in the heat and transport sectors (12% and 10% respectively).

- The applicant has clearly set out its reasons for selecting the site. Other parts of the country including Mayo would not necessarily be a blank canvas for wind energy development, as the board's refusal of permission for the Claddaun windfarm demonstrates.

- The development would reduce the emission of greenhouse gases by the equivalent of 180,000 tonnes of CO_2 per annum and would reduce the need to import fuel into the country. The EIS sets out the basis for the calculation of that figure.

- While the observers may disagree with government's energy policy, the board is obliged to have regard to it under section 143 of the planning act.

- The board does not have the power to enforce European legislation on state aid. The grid connection offer from Eirgrid is only for 120MW, and this limits the capacity of the proposed windfarm. The cable from the sub-station on the site to the substation on the national grid at Gorman will be under the control of Eirgrid, ultimately.

4.27 Planning policy, the character of the area and the nature of the development

- The National Spatial Strategy seeks balanced regional development and recognises the importance of the landscape. Wind energy policy should not take precedence over the landscape
- The 2006 guidelines issued by the minister did not envisage turbines of this height. Permission should not be granted before the guidelines are revised. Permission should not be granted pending the ongoing review of the minister's guidelines. No turbines this high have ever been erected in Ireland before. They would be higher than the Spire of Dublin placed on top of Liberty Hall. A balloon test should be carried out similar to that which was used for the Slane by-pass.
- The development would contravene the regional planning guidelines which stated that the Greater Dublin Region only contains 4.4% of the country's potential for wind energy development and which contain no assessment to indicate where in the region it might be best located. There are preferable sites that are windier and further from houses in other parts of the region and the country. Section 6.6.5 of the regional planning guidelines states that a study on the location of wind energy development is required. The development would be premature pending the completion of that study.
- There are generic planning policies in favour of wind energy development but for permission to be considered for a specific project it should sustainable, competitive and economically justified. The selection of this site does not represent a plan-led approach. The development plan simply did not contemplate this kind of development in this place, which should be a pre-requisite for a grant of permission for something so big.
- The scale of the development would be industrial. Its capacity would be equivalent to 8.8% of the entire installed wind energy capacity in England which is 1,834MW. The density of turbines would be 77 times of that in England. The scale of the proposed development is not comparable to existing windfarms in Ireland.
- The area is rural and residential in character. It is not industrial. The area is not zoned for industrial development as is now proposed.

- It would be wrong to erect industrial turbines in a rural, residential area. Each turbine would be equivalent to a jumbo jet 500m from people's homes. The submitted photomontages show distant views in the landscape rather than the close views from people's homes.

- The noise and visual intrusion from the proposed development would damage the amenity of the area.

- The development would contravene the proposed amendment to the county development to restrict wind energy development where wind speeds are low. This proposal was approved by the council.

- 500m is not a sufficient separation distance between a 169m high turbine and a village such as Carlanstown. The scale of this industrial development would cause a deeply inappropriate impact on an Irish village. It would damage the proposed amenity that is to be developed at Deerpark by the local groups in conjunction with the council.

- Many people have had difficulty obtaining planning permission for houses that would be much smaller and have had much less of an impact on the countryside than the proposed turbines. The sterilization of land around turbines would contravene the settlement strategy set out in the county development plan.

- There was an inadequate consideration of alternatives to the proposed development in the application.

- In order to be consistent with the refusal of permission for the Cregg windfarm under PL17. 244357 the board should refuse this application.

- The development needs to be assessed with due regard to the cumulative impact of the proposed north-south interconnector and Maighne windfarm, as well as the existing wind farms in the vicinity including that at Callan, Co. Louth.

In response to these points the applicant said –

- The suitability of the site for this type of development is established by the access that can be provided to the national grid at Gorman; to the absence of Natura 2000 designations on the site or its immediate vicinity; to the capacity of the landscape to absorb the development as demonstrated by its designation in the county development plan as having

a medium such capacity, the highest rating there is in the county; and the relatively low density of residential development which allows a 500m setback from houses and the ready compliance with the limits regarding noise and shadow flicker set down in the 2006 guidelines. The site selection and design process carried out by the applicant were comprehensively described in Appendix C of the EIS.

- The site selection conforms with the wind energy strategy and landscape character assessment set out in the county development plan, and so the project does represent plan-led development.

- The previous development of windfarms in windy areas in the west has led to cumulative impacts on several Natura 2000 sites. This has reduced the ecological capacity of those areas to accommodate more such development, as well as the capacity of the national grid there to do so. Improvements in turbine technology mean that they are now viable on sites with lower wind speeds.

- The grid connection offer that the applicant has from Eirgrid is specific to the Gorman substation. Turbines are only viable up to c25km from the grid connection point.

- The applicant is satisfied that the data from its single mast is adequate to describe wind conditions across the site, given that the land is relatively flat.

- Windfarms involve exploiting natural resources over an extensive area, and so are a rural form of development rather than an industrial or urban one. The landscape around the site is not highly natural or sensitive, but a robust working landscape within which the proposed development would be appropriate.

- The EIS considered the potential for cumulative impacts with the existing windfarm at Dunmore Co. Louth and the proposed north-south interconnector, while the addendum addressed the proposed Maighne windfarm.

4.28 Landscape

- The development would damage the landscape and would be an eyesore.
- The development would spoil the rural character of the area and would be alien to it.
- The turbines would be excessively high and would dominate the area. They would be much higher than any other feature in the landscape. Local people have been refused permission for houses that were a small fraction of the height of the proposed turbines.
- The landscape is one of hills and relatively small fields. It is not a large open landscape. The 2006 guidelines state that turbines in hilly farmland should not be excessively tall or dominate their surroundings. The proposed development would contravene this policy due to the height and extent of turbines. The development would be visually overbearing and dominant in the local context.
- Landscape character area 4, as defined in the development plan, is not appropriate for windfarms.
- The proposed development would contravene the planning authority's stated policies regarding the protection of designated views and prospects.
- The turbines would have a disproportionate impact on such a flat landscape. They should be on hills where rising ground can provide a backdrop.
- The process of landscape character assessment is not sufficient to describe and assess the impact of the development on the landscape. There are issues of scale relative to the landscape, and the number, height and movement of the structures. The turbines would be higher than all of the hills in north Meath other than Loughcrew and Slieve Breagh. The Hills of Ward and Tara would be lower. The landscape belongs to everyone.
- A blade moving around a diameter of 120m would have greater visual impact than a stationary object of similar size.
- 21 turbines would be visible from the GAA grounds at Castletown.

- The development would damage the landscape around Carlanstown.
- The photomontages submitted with the application are based on turbines with rotors with less than 131m diameter and so are misleading.
- The selection of the locations of views for the photomontages was unduly restrictive. The photomontages are haphazard, confusing and sometimes irrelevant. The fail to take into account the fact that human vision is only acute in the centre of its range, while the peripheral vision is sensitive to movements. So wind turbines that you are looking at would be more prominent than implied by the photomontages, while those in the corner of your eye would be more annoying. The photomontages are misleading because they are based on photographs taken during the summer that show tree and hedgerows in leaf and so exaggerate the screening that they provide. The photomontages may be useful but they are no substitute for field assessment.
- The plotting of the zone of theoretical visibility (ZTV) should not have been based on the hub height but on the blade height of the turbines, as required by the guidelines. If this had been done properly then the visibility of turbines from Brú na Bóinne would have been illustrated.
- The proposed farm has no geometric or coherent layout as required by the guidelines, but is rather a sporadic scatter based on landowners' holdings and preferences. The distinction between the clusters would not be perceived by someone moving about the area.
- The European Landscape Convention requires better public participation in the decision making process. The information and policies regarding the landscape that are set out in the county development plan are not adequate in this regard. Landscape character assessments need to be replaced by new methodologies that adequately describe and map heritage. The cultural landscape and heritage is no longer considered as a set of discrete points but as over-lapping layers of history. The EIS fails to consider sites as part of a single unified cultural landscape. The visual impact of the development is a direct impact which was not given sufficient attention.
- The development would also impinge on the landscape character area along the Blackwater Valley that is identified as vulnerable in the county development plan.

- Inadequate attention was given in the EIS to the structures and landscapes from the 18th and 19th centuries. Photomontages are limited and static and fail to capture the movement of people and of rotors.

In response to these points the applicant said –

- The clustered layout of the proposed windfarm was chosen to maintain separation from houses and to diminish the visual impact at any particular location.
- The CAAS report submitted by the planning authority did not follow the Guidelines on Landscape and Visual Impact Assessment issued by the UK's Landscape Institute which require professionals to judge the significance of an impact based on its magnitude and the sensitivity of the landscape effected. The applicant does not agree that there would be a significant impact at Loughcrew. The development would intrude into views from the Hill of Lloyd, but would not obstruct it. Turbines would not be incongruous in a productive agricultural landscape. The development would not alter the appearance of the panorama from the Hill of Tara or the Hill of Skryne. The sensitive area in views from the Hill Ward are in the foreground and middle distance, while the proposed development would be 14km away. The development would not be readily visible from the Hill of Slane or Brú na Bóinne.
- The turbines would become screened by vegetation over relatively short distances, as illustrated by the route screening analysis submitted by the applicant. Rarely would more than 10 turbines be visible from one location on any local road. The development as a whole would be visible from distant vantage points but would occupy a small proportion of those views.
- The taller turbines proposed in this application provide a better yield, allowing a less dense wind farm with greater permeability. The turbines would be slender structures set well back from smaller structures in the landscape. The site is in a relatively flat expansive landscape that could accommodate tall turbines better than one with a more intricate pattern.
- The criteria for the selection of locations for photomontages was set out at section 15.8.5 of the EIS. Given the character of the landscape, with well-established hedgerows, there are a limited number of points where open

views of turbines are available in the local area, as demonstrated in the route screening analysis. Photographs were taken during summer because lighting conditions were optimal.

- The applicant states that the photomontages were prepared in accordance with the applicable professional standards in the GLVIA 2013, but accepts that they cannot replace assessment based on field work.
- The visual analysis submitted by the applicant took account of the movement of the blades.
- The turbines would not displace agricultural use and would appear as part of a working rural landscape.

4.29 Impact on human health and safety

- The proposed windfarm should be considered according to a 'whole of government' approach in line with the policy of the Department of Health set out in the *Healthy Ireland Framework*. This would require this application to be subject to a health impact assessment integrated with the environmental impact assessment. The board should hire experts to address matters of public health. No health impact assessment has been conducted. More integrated methods of assessment are required. Adequate studies of the impact on people's health were not submitted with the application. The proposed windfarm could widen health inequalities. The definition of human health provided by the World Health Organisation encompasses more than the absence of disease; social well-being and the fabric of the community are also central to it. The proposed scheme has put stress on community bonds and social capital, and so has had negative effects on health for the community as a whole.

- There is extensive research showing the negative impact of wind turbines on those with autism. English inspectors have refused permission for wind turbines in north Lincolnshire due to the effect of infrasound on nearby residents who have ASD. Those effected may be hyper- or hyposensitive, so the likely impact of turbines upon them cannot be refuted with any certainty. The condition is characterised by an insistence on sameness, a resistance to change and problems in articulating difficulties. The filtration of stimuli does not improve the situation of those with Sensory Integration Disorder, which is a standalone diagnosis. A lack of scientific evidence should not be used as an excuse. There is no previous development of this scale of industrial turbine that would provide date on its impact on residential communities. The Australian literature review cited by the applicant does not necessarily deal with this scale of industrial wind turbine in this kind of proximity to houses. The presence of the windfarm will also add to the stress on carers.

- The Australian review found no proof of an impact, but did not conclude that there was proof of no impact.

- People living near turbines have described a range of symptoms relating to environmental noise exposure including headache, irritability, difficulty concentrating, fatigue, dizziness, anxiety and sleep disturbance, as reported by the policy adviser to the minister for health.

- The Board of Management and the Parents' Association of Scoil Mhuire at Carlanstown submitted that the noise and visual impact of the proposed windfarm would intrude on the school, causing distraction to pupils and interfering with their learning. Particular problems would arise for children who are autistic or are sensitive to infrasound as the noise could cause them distress and anxiety. The Board of Management of Heronstown National School stated that the likely impact on the health and development of children in the vicinity of turbines had not been addressed, while the Parents' Association for the school expresses concern for the health, education and well-being of their children. The school would be surrounded by monstrosities, with the nearest turbine 2km from the school. This would be a risk to the children's health.

- The Early Years Pre-school at Carlanstown would be close to several turbines, especially T5 and T9 that would be c1.5km away. The noise and visual distraction from the turbines would have a negative effect on pupils, especially those with Autistic Spectrum Disorder.

- The development would undermine the therapeutic benefits for vulnerable children using the facilities at the Kells Equestrian Centre. Its current use provides improved mobility and emotional bonds for children with ASD.

- The development would give rise to stress for local residents and so would threaten their mental and physical health.

- The devaluation of property arising from the development would place additional stress on people, particularly those in negative equity, and so would have a negative impact on mental health.

- The risk of tower collapse and ice throw from the development are a threat to public safety. Fires are a common hazard at wind farms. Ice throw can occur up to 1km, and the separation distance of turbines from houses should reflect this. .

- Linda Fitzsimons lives in close proximity to proposed turbine T46 and expressed concerns that exposure to magnetic field could lead to a further brain haemorrhage. A medical certificate was submitted that indicated that clips which had been inserted after a previous haemorrhage could be effected by any strong magnetic field. The stress and anxiety caused by the presence of the turbines would also damage her health.

- Professor Alun Evans, the emeritus professor of epidemiology at Queen's University, has demonstrated the health impact of wind turbines due to

noise and sleep disturbance in his editorial in the British Medical Journal authored with Dr Christopher Henning. Professor Evans spoke at length at the hearing regarding the impact of noise on sleep and hence health. The Irish noise guidelines should be changed to reflect the WHO guidance on noise issues in 2009, as the former allow 4 times more noise in rural areas at night. Sleep is essential for cognitive functioning. In has cycles of around 90 minutes with arousal more likely to lead to waking if there's noise at that time. As sleep is important of the laying down of memory it is particularly important for childhood learning. The noise generated by turbines is inimical to sleep due to low frequency noise that is impulsive, invasive and incessant. The association of ill health with noise is well established, so the board should adopt the precautionary principle. The medical profession is resistant to the idea of new diseases, which would impede the recognition of Wind Turbine Syndrome. The frequency of infrasound converge with those generated by the human body and some people are more sensitive to its effects than others. It may have an impact on blood pressure or unexpressed genes. Doubts and stresses about perceived threats also negatively affect human health. The A-weights scale is skewed towards upper frequencies and fails to take adequate account of infrasound. The current guidelines are based on English guidance from 1996 and are inadequate to protect human health. It is disturbing that 7 turbines would be within 2km of primary schools.

- The development would threaten hot air balloons which fly in the area.

In response the applicant stated –

- The further information included a literature review on the topic of human health and wind energy development by Dr Martin Hogan, a specialist in occupational medicine. It quotes the review carried out by Australia's National Health and Medical Research Council that concluded that the available evidence does not support a conclusion that wind turbines have a direct adverse effect on human health. It also quoted a South Australian study which found that infrasound around windfarms was less than in a typical urban context.
- The available evidence does not support a contention that exposure to infrasound is capable of causing adverse health effects. Measurements

at other rural areas indicate that infrasound levels are the same whether or not they have wind turbines.

- The setting of noise limits is a matter for responsible governments and the applicable standards in Ireland are therefore those set by the Irish government in the 2006 guidelines. The limit quoted in the WHO 2006 guidelines is an annual limit. The development will also meet that limit.

- Appendix J2 of the EIS demonstrates how the development would comply with ICINRP and EU guidelines on the generation of electro-magnetic fields. Ms Fitzsimon's house would be 551m from turbine 46, and 1,335m from turbine 45. The electro magnetic fields at such a distance would be negligible and would pose no danger to her health. The EIS includes a proper analysis of electro-magnetic fields in appendix J2.

- There is no credible evidence to link wind turbines to any of the adverse health impacts raised by the several of the observers.

- The turbines would be set back far enough from houses that ice throw would not be a significant hazard.

- The operation of the turbines would be monitored from both on- and off-site locations. Smoke detectors would also be fitted. If a fault is detected the turbine would be stopped. The turbines would be subject to inspection every 6 months and servicing once a year.

4.30 Noise

- The impact of noise from the development was not properly addressed.
- The baseline noise monitoring gave a self-serving and misleadingly high level of background noise. A map of the noise monitoring locations was not provided in the EIS. The nearest sensitive receptor to each turbine should have been surveyed, giving a minimum of 46 noise monitoring locations. It is inappropriate to average results over an area of 200km^2. The technical details of the survey were questioned. It could not take adequate account of the variation of wind speeds over the site because it was based on the results from a single monitoring mast. The area which would contain the development is quieter than the applicant suggests, so the applicable noise limits under the 2006 guidelines would be those for a low noise area, i.e. an absolute limit in the range 35-40dB(A). The noise model provided by the applicant does not demonstrate that the development can meet this limit, and so it contravenes the guidelines.
- The models used to predict the generation and propagation of noise from the proposed development do not accurately model environmental conditions.
- No information was submitted on certified tests of the sound output from the turbines proposed for the development.
- The A-weighted scale for noise measurement is not suitable for the control of wind energy development, and the C-weighted scale should be used.
- The EIS does not address the impact of infrasound. Low frequency noise from turbines is not easily masked by other sound in the environment. The article by Alex M Salt describes the effect from wind turbines due to infrasound, which cannot be heard. Its effects build up gradually, particularly due to sleep disturbance. Its effects can be noted up to 5km from turbines.
- Both the Department of the Environment's guidelines and the UK's ETSU-R-97 document are not applicable to the current proposed because they are based on smaller turbines.
- The analysis in the EIS does not refers to the review of the guidelines or the Marshall Day Acoustic Study. The application would be premature until these are completed.

- Conditions relating to noise emissions from the development would not be capable of enforcement.
- The noise generated by the development would impact those with autistic spectrum disorder. The EIS does not refer to the scientific literature on the adverse impact on people arising from the noise and sound that wind turbines emit.
- Wind wake turbulence in a risk due of the proximity of many of the turbines, with many only c360m apart, i.e. less than 3 rotor diameters, which would exacerbate the impact of noise and vibration.
- The noise or vibration from the turbines could reverberate with windows and have an impact within a house that was not described in the EIS. Energy can also be transmitted through the ground.
- The noise from the development could give rise to tinnitus.
- The motte and bailey and graveyard at Kilbeg should have been considered as a noise sensitive location.
- The impact of noise within the upper floor of dormer bungalows would be amplified but this was not considered in the EIS.
- The noise emissions from the development mean that it requires licensing under the Industrial Emissions Directive

In response to these points the applicant said –

- The Environmental Health Officer of the Health Services Executive was satisfied with the submissions made in respect of noise.
- The further information included maps and tables in respect of the noise monitoring locations. The noise monitoring locations are described in appendix 31 of the further information. They were selected with proper professional judgment. The monitoring took place between 12th June and the 3rd July 2014, and from the 8th to the 27th August 2014. The results indicated that the area around the site had existing noise levels above $30dB_{LA90}$ at windspeeds of 5m/s, therefore the applicable noise limits

under the 2006 guidelines is 45dB$_{LA90}$. The monitoring and measurement followed the applicable guidance from the 2006 guidelines. The windspeeds at height would be consistent across the site and the records from a single mast were considered sufficient.

- The noise assessment in the EIS demonstrated that the limits specified in the 2006 guidelines can be met.
- The A scale weighting is designed to reflect human hearing.
- There are no frequency components in the noise from wind turbines that would lead to resonance within a building. The vibrations from wind turbines would be immaterial and would pose no risk to human health.
- The contention that low frequency noise or infrasound can interfere with sleep or human health is not supported by evidence, and an article in the UK's Institute of Acoustics bulletin published in March 2009 is cited to this effect. The noise from wind farms does not contain any component that poses a greater threat to human health that any other noise.
- The WHO guideline noise limit of 40dB$_{Lnight}$ would not provide a useful control on the noise from the proposed development as it is based on annual measurements. The applicant has committed to achieving the applicable Irish limit of 43dbA$_{LA90}$, which would be a stricter limit on any specific night. However the application can also comply with the WHO guidelines.
- The noise limits for sensitive properties will be met at Kilbeg graveyard which is more than 500m from any turbine.
- The turbines would stand a minimum of 3 rotor diameters apart and the layout was approved by the manufacturer. So wind wake turbulence should not arise.
- The operator of the development would be responsible for compliance with noise or any other planning conditions and will be liable to legal action by the council or any other person.

4.31 Shadow flicker

- Shadow flicker from the development is a serious concern for residents in the area.
- The impact of shadow flicker from the development was not properly addressed. The sunshine and wind direction factors used in the applicant's model were not properly related to conditions on the site.
- The shadow flicker model failed to account for the greater impact on houses that would have more than one window facing the turbines.
- The Parents' Association for Carlanstown National School expressed concerns at the impact of shadow flicker from the proposed turbines.
- Shadow flicker from the development could harm those with autistic spectrum disorder.
- Shadow flicker would damage the amenity of nearby houses. Justin and Joan McCarthy asserted that the shadow flicker analysis in the EIS contained numerous inconsistencies and inaccuracies, particularly with respect to their house which was unclearly identified as either house 112 or 113. The observers' property would be less than 500m from a turbine, measured properly and including the curtilage of a domestic house. The assumption in the model that only one window in a house would face the turbines is simply untrue.
- The shadow flicker could have an impact on fauna which the application does not address.
- Reflective flicker is also a concern.

In response to these points the applicant said –

- The Environmental Health Officer of the Health Services Executive was satisfied with the submissions made in respect of shadow flicker.
- Section 12.4 of the EIS assessed the impact of shadow flicker on all houses within a radius of 10 rotor blades of a turbine, which is 1.2km using applicable models. The assessment complied with the 2006 guidelines and the Irish Wind Energy Associations best practice

guidelines issues in the 2012. It demonstrated that the development can comply with the limits on shadow flicker set down in the 2006 guidelines. The model was based on the impact of a shadow flicker on a single window at each house rather than an survey of how many windows actually faced the proposed windfarm on a real house.

- The sunshine factor was applied in the model in the EIS to the annual limits to the exposure to shadow flicker, not the daily ones. The predicted impacts in this regard are cumulative, and refer to the impact of all rather than each turbine.
- The mitigation system could stop the blades within 1 or 2 rotations. The control centre on site would monitor the working of the anemometers and light meters.
- There is no potential for shadow flicker within the village of Carlanstown due to the separation distance from the proposed turbines.
- Matt paint would be used to avoid reflective flicker.

4.32 Natural Heritage

- The development would have a negative impact on ecology.
- The legal requirements set out in the Kelly judgment and C258/11 must be complied with by the board. The proper screening test for appropriate assessment is whether the development could have an effect. Any mortality of an Annexed species under the Birds and Habitats Directives, including Whooper Swans, would be a significant effect.
- The development would threaten populations of Whooper Swans and bats.
- The development requires an appropriate assessment.
- The cumulative impact on birds of wind energy development across the British Isles needs to be assessed. The development would threaten birds protected under the Birds Directive which cannot be justified on economic grounds, including Woodcock, Hen Harriers and Eagles.
- The EIS did not contain adequate scientific data on which to draw conclusions with regard to significant species, including Golden Plover, Whooper Swan and Leisler's Bat. The survey work on such species in the EIS was poor and does not support the conclusions stated in the EIS and the NIS.
- The viewshed analysis in the EIS is poorly described and cannot be repeated, and therefore lacks scientific basis. The vantage points were inadequate. Information on night-time activity by Golden Plover and the Northern Lapwing were not provided. The previous information from the tailings pond at Tara Mines was not incorporated into the EIS. The baseline information in the EIS is therefore deficient.
- Golden Plover is present in the area. Large scale movements of this species may occur between SPAs.
- The proposed wind farm may disturb or displace Whooper Swans. The flight activity survey in the EIS is poorly described. It did not encompass 2 breeding seasons. 3 to 5 years' surveys are required. The typical height of swan flight is 10m to 30m. Views of flightpaths at this height would be restricted from the vantage points used for the EIS. So the analysis in the EIS is not a reliable basis for scientific conclusions.

- Leisler's Bat is a high flier at risk from the rotors of wind turbines. The EIS was wrong to state that they cannot be adequately surveyed using ultrasound.

- Whooper Swans use the pond in the vicinity of turbines 1 and 2 and their flightpaths cross the site. This was not acknowledged in the EIS.

- The development would damage peatland habitats of ecological importance.

- The killing of birds and bats by the turbine would contravene the 1976 Wildlife Act. Peregrine falcons fly higher than stated at page 83 of the NIS, actually at rotor height.

- The surveys of habitats and of flora and fauna by the applicant were inadequate. Aerial surveys are no substitute for local knowledge.

- Felling trees for the development would contravene the Forestry Act 1947.

- Turbines would be close to the Killary River and would threaten spawning in the Dee fishery.

- The NIS does not adequately deal with the likely effects of the development on European sites. The ecological surveys were not extensive enough to conclude that the large number of river and stream crossings proposed would not have a significant negative effect on the integrity of a European site. The impact of the batching plant on aquatic ecology has not been fully addressed. The development might change the drainage regime in a manner that would effect an intact raised bog. The relocation of the proposed location of the sub-station during the design of the development does not appear to have been properly addressed in the report on aquatic ecology. The possibility of invasive species due to earthworks and external contractors does not appear to have been considered. The silt ponds near T1 and T2 would be an area of high vulnerability which is inherently unsuitable and so the development poses a threat to the quality of ground and surface water. The survey on Kingfishers was not adequate. Salmon nurseries could be effected during construction. There was an inadequate statement of methodology for the otter survey.

- There needs to be clarity on the mitigation measures for bats and birds so that they are not undermined by changes to turbines and rotors.

- The EIS and NIS are deficient because they refer in several places to the development of mitigation measures or their implementation in a draft CEMP that has not been finalized. Such outline permission cannot be granted for a development that requires EIA or appropriate assessment. There are many lacunae in the description of mitigation measures.

- The Department of Arts, Heritage and the Gaeltacht has not undertaken a full review of the methodologies employed by the applicant.

In response to these points the applicant said –

- The draft Construction Environment Management Plan submitted with the application outlines the various measures that will be used to mitigate the impact of the carrying out of the development on the natural heritage of the area. The developer will comply with the recommendations of Inland Fisheries Ireland.

- The proposed sub-station and turbine 22 are located in an area of forestry. There will be no direct impact on the adjacent high bog. Extensive drainage works have taken place around the area and so no indirect impact on the peatland habitat is likely.

- The EIS does not rely solely on aerial surveys which were only one part of the baseline ecology survey.

- Hen Harriers or Eagles are not known in the area. The EIS appraised the impact on Woodcock at section 7.2.4.1.

- The applicant used several methods to determine the Whooper Swan's presence in the area, as described in section 7.2.4.1 of the EIS, including a desktop review, walkover surveys, a monthly census of known breeding and roosting sites and four flyover surveys, conducted over 2 winters. These indicate that the main roost site is at the tailings pond at Tara Mines. The flight activity vantage point survey is described at section 7.2.4 of the EIS, and the results are presented at figure 7.19 and volume 2a of the EIS. The collision risk model estimates of mortality follows the guidance issues by Scottish Natural Heritage, and produced an mortality rate of 0.93 per annum. The estimates were therefore made following best scientific practice is line with the best available data, and the applicant stands over them. The inputs to the model did not depend on

the viewshed analysis as the applicant already knew that the swans traversed the area. The Department of Arts, Heritage and the Gaeltacht did not take issue with this approach or its conclusions. The observers who input the data for the collision risk assessment were appropriately skilled and experienced. Swans are not particularly vulnerable to collision risk, and a Dutch study of 2012 is cited to this effect. The applicant has survey data over two winters which showed very few flights at heights equivalent to the rotors on the proposed turbines.

- The submitted EIS and NIS gave proper attention to the likely impact of the development on peregrine falcon and Kingfisher. Proper mitigation measures will be put in place to protect the quality of surface water to avoid any impact on the kingfisher or salmon that form the conservation interests for the River Blackwater and Boyne SAC, including those at all watercourse crossings. Measures will be in place to ensure that those crossings do not have a negative impact on otters.

- The EIS acknowledged the potential for a negative impact on bats, with an estimate of bat mortality provided at section 7.5. The applicant will maintain a buffer zone of 50m free of vegetation around turbines 4, 10, 12, 15, 22 and 23 to mitigate the impact on bats recorded in that vicinity. Turbines 14, 19 and 20 cannot be located a greater distance from adjacent vegetation, so their impact on bat fatality should be monitored for three years from commissioning, with further measures implemented if they appear to be necessary. The rotation of turbines 37 and 43 should be curtailed in the hours of darkness in July and June due to their proximity to a maternity roost at Yellowleas farmhouse. If the board considered it necessary the same measure could be implemented at turbines 14, 19 and 20 in respect of the roost at Dowdstown House.

- The EIS contains the required information on the likely significant effects of the development on flora and fauna. The NIS contains adequate information to allow a conclusion based on the best available scientific evidence beyond reasonable scientific doubt that the development would not adversely affect the integrity of any Natura 2000 site, following an appropriate assessment of it in the light of any such site's conservation objectives. The application therefore meets the required legal standard for permission to be considered. The applicant cannot entirely exclude any arguable possibility of any impact whatsoever arising from the development. Such a standard would be impracticable and is not laid down in the applicable law.

- The applicant has taken all reasonable measures to avoid bat and bird mortality, as outlined in the EIS, NIS and further information, and so the development would comply with the 1976 Wildlife Act. Neither would there be any infringement of the Forestry Act 1947 as whatever licence may be required will be obtained.
- The Kelly judgement sets out the standard for appropriate assessment. It is for the board to conclude such an assessment. The NIS did not misinterpret the relevant standards.

4.33 Water and Drainage

- The development would give rise to flooding.
- Turbines 13, 24, 26, 28 and 36 would be in floodplains
- Turbine nos. 24 and 25 would have a particular impact on drainage on the adjoining landholding.
- David and Valarie O'Brien objected to the impact of turbines 9 and 10 on a domestic well, and upon the drainage of their residential curtilage. Dan McNulty objected to the threat to the well serving his house near turbine 46, and sought a guarantee from the applicant that no adverse impact would arise.
- The impact of the borrow pits on the water table has not been properly addressed.
- The laying of cables in public roads would damage water mains.
- Cable trenching could have an impact on hydrology.
- The turbines would have a greater impact on water than predicted in the EIS. The flow of rainwater down the towers would cause an eroding flow path, and would release volatile organic chemicals from the towers' coating.

In response to these points the applicant said –

- Appendix 13 of the further information included maps of peat thickness, slope, and stability risk. These illustrate that the turbines and ancillary works would be on the periphery of Emlagh bog where deep peats or steep slopes are not present. So the development would not give rise to a significant risk of peat slip. Shear vane tests were also carried out in the vicinity of turbines 23 and 26 where peat depths of more than 0.5m were found.
- A hydrological assessment was given in section 10.3.2 of the EIS. Trial pits were sunk at the location of each borrow pit which show that the pits would not breach the water table. The drawdown in the vicinity of the turbines would be modest. There would only be temporary dewatering of the excavation during construction to a depth of 3m. Combined with the

separation distance achieved to other property, these factors indicate that the development would not have a significant effect on wells.

- There will be a detailed investigation of the piped services along public road before construction in the post consent phase.
- Water for the batching plant will either be taken from a well on site or brought in by tanker. Waste water from the site will be drained to a sealed container and removed by a licensed contractor.
- A flood risk assessment was included in appendices 14 and 15 of the further information. It stated that turbines were not at risk from flooding. Neither they, nor the ancillary structures including the road and sub-station, would cause flood impedance. Turbines and cable ducts will be sealed to prevent damage during flood events. The development would not give rise to a significant increase in surface water runoff. There will be a clear span crossing over the Moynalty River. Other watercourse crossings will be provided with appropriately sized culverts. Section 2.3.6.2 of the EIS describes the method for crossing watercourses. Section 9.7.1 sets out the mitigation measures proposed within respect to the upgrade of the track crossing the Killary River. Calculations of water flow before and after construction at Fryanstown Bridge are provided. Mitigation measures will be provided at Ardlonan and Stephenstown Bridges during turbine delivery by raising berms. The proposed development is therefore not likely to give rise to any significant flood risk.
- A surface water drainage system will be provided during construction that is consistent with SUDS principles, with the installation of swales and stilling ponds to control run off and prevent sediment release. Interceptor drains will be installed to prevent runon to construction areas. The excavations for turbine bases will be pumped out. Bunding will be used to prevent pollution from fuels and lubricants.
- The runoff of rain from the towers will not be contaminated and will not pose a threat to the quality of waters.

4.34 Cultural heritage

- The development would damage the setting and value of important heritage sites including Brú na Bóinne, Kells, Tara, the Headfort Demesne and Loughcrew. The first is a World Heritage Site, and the next two are candidates for that status. UNESCO criticised the authorization of a wind farm near the candidate site at Mont St. Michel in Normandy.

- ICOMOS is an expert NGO and an advisory body under the World Heritage Convention, to which Ireland is a party. Brú na Bóinne is a World Heritage Site of outstanding universal value and needs a buffer zone. The views of seemingly timeless landscapes from it are important. The Hill of Tara, Kells and Monasterboice are on the tentative list of World Heritage Sites. ICOMOS thinks that the Loughcrew should also be on the site. The development will effect views to and from Brú na Bóinne, Tara, Monasterboice and Kells. A heritage impact assessment and a more rigorous landscape and visual impact assessment are required. An EIA is not sufficient for the cultural properties of world heritage sites. The Bern Charter of 2013 and the Xi'an Declaration of 2005 emphasize the importance of setting. The Irish landscape is both an artefact and a narrative that illustrates the evolution of society and settlement. The cultural landscape cannot simply be recorded, it must be experienced. If the outstanding universal value of Brú na Bóinne, Tara and Kells are to be protected then permission should be refused for the proposed development. The fact that the blades would move is not reflected in the photomontages. Permission should be refused because moving parts will be visible from World Heritage Sites.

- The development would intrude into the streetscape in Kells, including that around the monastic core and at Headfort Place. There are proposals to give public access to the Bell Tower, so the negative impact on the view from there is a significant issue. This was not assessed in the EIS

- If the development is carried out, then the equinoctial sunrise with which Cairn T at Loughcrew is aligned would be through 36 turbines. Photomontages should be provided from the top of Cairn T at Slieve na Calligh. Gabriel Cooney, Professor of Celtic Archaeology at UCD, spoke about Loughcrew at the hearing, about its very high value for heritage and landscape and about its high sensitivity. Its east west alignment is a key feature, while the proposed windfarm would be 16-18km east to north-east of it and so it within the visibility radius specified in appendix 3 of the

guidelines. Loughcrew is one of the four great passage tomb complexes in Ireland, and was probably at its height before 3000BC. Its builders placed an emphasis on visibility with spectacular views. The long range views to the east, especially those from the entrance to Cairn T, contribute to its significance. The proposed windfarm would be close to the alignment of the complex. While the equinoctial view is important, one cannot base an impact assessment on a single view. While Cairn Y is under forestry, it is an integral part of the complex and is not peripheral. The forestry there is a temporary feature. The impact of the development at Patrickstown Hill would be greater than at Cairn T and it is an impact on Loughcrew. The conclusions of the EIS fail to take into account this impact at the eastern end of the complex and so should not be acceptable. A heritage impact assessment should at least find a moderate impact from the development on Loughcrew. The cumulative impact with the proposed Maighne windfarm might reach a tipping point.

- Headfort School objected that the proposed turbines would be visible from Headfort House which is a protected structure of world significance, and whose gardens are also worthy of protection. They would also be visible from Kells, which is a candidate World Heritage Site. The development would contravene local and national policy on the protection of the archaeological heritage. The Headfort Trust objected to the development due to its impact on the ACA at Headfort Demesne at the heart of which is a house, now used as a school, that dates from the 1760s. Turbines 9 to 12 would be visible from the house, contrary to the photomontage 63 submitted with the application. T12 would be only 1km from the ACA and 2km from the house. Photomontages should be provided from the upper floors of Headfort House. The development would damage the view from the staircase in particular. Other observers argued that a photomontage was not necessary, but an assessment based on an internal assessment of the house was.

- The development would negatively effect the setting of the sites at Teltown and Donaghpatrick and would be the equivalent of building beside Stonehenge.

- The development would undermine the character of Carlanstown.

- The heavy traffic generated during construction would threaten Carlanstown Bridge, which is a protected structure. The EIS did not consider the impact on St. Patrick's Well in the village.

- The development would have a negative impact on St. Patrick's Well and the motte and the 8th century graveyard at Kilbeg due to noise, visual intrusion and a physical threat due to cable laying and heavy traffic and road works during construction. A water crossing will have to be provided nearby but its details have not been submitted with the application.

- The turbines will be visible from the approach road to Trim and from Trim Castle.

- Moynalty is an estate village that dates from 1826. Development was constrained there in the 2000s to protect its character. It is currently designated as an architectural conservation area and contains 29 protected structures. The proposed windfarm would only be 1.5km away and would have a massive impact on the village in terms of its character, setting and residential amenity. There is an inadequate assessment of its impact in terms of Moynalty's heritage. As the development plan states, the views of the countryside from inside the village are central to its character. In particular protected views 1 to 4 of the ACA would be compromised by the development. The intrusion of turbines into the village's streetscape would contravene the character and objectives of the ACA and would be an act of unpatriotic vandalism. There is a ringfort at Moynalty which is a protected structure 1.14km from turbine 13 whose setting would be injured, as would the setting of Rathmanoo House.

- The development would damage the demesne setting of the protected structure at Parsonstown House. The turbines would be visible to the west from the property.

- The question of Ricetown Mill is not adequately addressed in the EIS.

- The development would have a negative impact on Cruicetown Cemetery.

- Druid's Altar is a megalithic tomb only 1km from turbine 56.

- Ronan O'Loughlin and Miriam Reilly objected to the impact that the development would have on Curraghtown House, a protected structure, which they purchased in 2005 and subsequently restored along with its historic gardens. The observers will leave the house if the proposed development proceeds and will expect compensation from the state for their financial losses. Turbines 1 and 2 would be less than 700m from the house and less than 300m from the property. The development would seriously injure the setting of the protected structure. The house is an historic Victorian Villa from 1875. Alexander McAllister was the architect.

The house is a rare example of his work outside Ulster. A copy of a contemporary article on the house published in the *Irish Builder* was submitted. The townland is essentially its demesne. The relationship of the house to the landscape has not significantly changed since the rest of the townland was sold into separate ownership. The house was situated to be prominent and to take advantage of views across the landscape that the proposed windfarm would spoil. The applicant's analysis fails to take account of the full extent of the demesne landscape around the house. The trees on its north-east side do not form a screen. The views to the north of the house are completely open, as they were intended to be. The applicant's approach to the considered of impact on heritage fails to properly consider indirect impacts such as the damage the development would cause to the setting of Curraghtown House and views from it. The cumulative impact of the development with the Maighne windfarm means that is Mr O'Loughlin were to visit his relatives in Rathangan he would spend much of the journey travelling through a windfarm zone. Both windfarms would also intrude into views from Loughcrew.

- Gerald Sands of Rathkenny House objected to the impact of the development on his historic house and his breeding of racehorses there. Turbine 44 would be only 707m away. The size of the machine is horrifying. There is significant archaeology in the vicinity of that turbine.

- Newrath House is of historical significance.

- The development would have a negative impact on Dowdstown House, damaging its views and ambience. There are souterrains across the area and a large chamber cave would be destroyed by the development. The development would also dominate the settings of many other protected structures and recorded monuments in the area including Mountainstown House.

- The refusal of permission for the windfarm at Cregg was due to its impact on a designed parkland. The same principle in this case would require permission to be refused due to the impact at Headfort Demesne, Curraghtown House and Dowdstown House. The negative impact of the development in this regard would contravene section 9.6.13 of the development plan.

In response to these points the applicant said –

- From Newgrange, there would be limited visibility from a pathway to the west of the tomb between a maintenance shed and foreground vegetation at a distance of 15km. There would be no potential views from the front of the mound. There is a potential view of 6 turbines from the top of the tomb at Knowth. When the distance and screening vegetation are taken into account, it would be difficult to see the development from Brú na Bóinne and it would not effect the site's heritage value.

- The development would be more than 20km from Tara and Loughcrew and 14km from the Hill of Ward. The turbines would appear as small scale features in a productive rural landscape which has been and is the result of changing settlement patterns and technologies. The simple fact of visibility should not be given undue weight over the character of that visibility. It may be noted that distant views of wind turbines are available from the Rock of Cashel, Mullaghmore in the Burren and the Cliffs of Moher without injuring the heritage value of these places.

- The development would be barely discernible from Loughcrew at the equinoctial dawn at the passage tomb although some blade tips would break the skyline. An additional mitigation measure described at the hearing would be to align the blades with the equinoctial dawn so that they would not be visible in that view for an hour around sunrise. In other views from Loughcrew the turbines would be viewed as a single sub-dominant element in the landscape. It would be very hard to discern the pylons of the proposed north-south interconnector at this distance. It would be part of a layered multi-period landscape and would not have a significant impact on the experience of Loughcrew. The forestry restricts access to Patrickstown Hill and the views available from it. Cairn Y is not on the crucial alignment with the views to the east, although views back to the hill with Cairn T are available. Simple visibility of turbines does not necessarily lead to a bad effect, and the existing turbines to the north do not diminish the value of Loughcrew. The closest turbine at Maighne would be 35km away.

- Building windfarms involves limited ground disturbance compared to other developments and so the likely direct impact on archaeological remains is limited.

- The impact of the development at Teltown and Donaghpatrick was considered at section 14.3.1.1 and at appendix L2 of the EIS. A previous

proposal included 5 turbines near Teltown, which were omitted to protect the cultural value of its setting.

- Turbine T8 would be 816m from the motte and bailey at Kilbeg and so would compete for visual dominance, having a slight impact upon it. An additional photomontage was submitted as further information to illustrate this. The crucial view is from the approach road to the west, upon which T8 would not intrude. The access road to T8 is outside the core area for the motte and bailey, though within the zone of potential and works there would require a licence from the DAU.

- The development would have a slight impact on Curraghtown House, as stated in chapter 14 and appendix L1 of the EIS. The house does not have a demesne and was built as an estate manager's residence as part of a larger commercial operation which no longer operates

- The closest turbine to Dowdstown House would be T20, 585m away. It visual impact would be of minor magnitude and slight significance. Turbine 19 would be 589m from the souterrain near the house and was identified in section 3.2.9 of the further information. Archaeological monitoring will protected unidentified remains during construction.

- The nearest turbine, 44, would be 2km from the boundary of the demesne that contains the remnants of the former house at Parsonstown. The development would change views of the rural landscape to its west.

- A route screening analysis was submitted with the further information which shows that most the streetscape in Kells will be unaffected by the development but there will be partial views of some turbines from within its historic core. Full blade sets will be visible from 3 points within the core. However the medieval monastic complex is already set within an urban context established in the 18th and 19th century. The development would be viewed through this context and would not compromise the character of the monastic complex or the ACA there. The outstanding universal value of Kells includes the early monastic settlement and an intangible heritage of craftsmanship exemplified by the Book of Kells. These would not be effected by the proposed windfarm. Simple visibility does not necessarily imply a significant negative effect. There would be no visual change at the High Cross or the Round Tower or at Church Lane

- The development will be visible from parts of the ACA of Headfort Place, where it would be part of the surrounding countryside. However the views

of turbines would not impact on the character or significance of the ACA there.

- Additional photomontages from Headfort Demesne were submitted with the further information, but views were not available from inside Headfort House which is private property. The visual impact on the demesne is classed as slight/imperceptible. The vista north from the house is across agricultural land rather than the original designed parkland, and the windfarm would be slightly to the east of this view. The windfarm would not affect the relationship of the buildings within the ACA, and the magnitude of the change due to the development is given as negligible.

- In response to the submissions on the initial application the applicant engaged a new expert in cultural heritage, Dr Stephen Carter, who was not involved in the compilation of the original EIS to review the impact of the proposed development on the key sites of international or national significance at Brú na Bóinne, Kells, Tara, Loughcrew, the Hill of Lloyd, Trim Castle and Cruicetown Church and Cross. Dr Carter also spoke at the hearing in response to other's submissions. The response quotes English Heritage that the importance of setting lies in what it contributes to the heritage asset. It notes that the World Heritage Site at Brú na Bóinne has a defined core and buffer zone, which the development would be outside of. There is potential visibility from the western end of the burial complex to the development, as shown on figure 3.9 of the further information. Thus the development could lead to a slight change in long views from the top of Knowth. This would be an adverse visual impact of negligible magnitude and slight significance. The windfarm would be c4km from Kells and would be visible from within the town. The context of the heritage assets at Kells is set by various types of other development. The views of the windfarm would be fleeting and from a busy urban area, and so would not compete with the landmark structures in the town, and would not impact on the sense of enclosure there or the relationship between the assets in the town. There would be no change to the attributes that contribute to the significance of Kells. The turbines would not dominate the town or the sense of arrival to it, or undermine its rural setting. At Tara there are 73 recorded monuments on a ritual hilltop. The expansive views from the ridge are key to the sites' significance. The proposed windfarm would be 20-25km away and would occupy 29° of the panorama. The turbines would be visible as small scale items from the hill, well outside the landscape buffer zone identified in the county development plan. The magnitude of the change is considered negligible, and its significance as slight. At Loughcrew Slieve na Calligh is a

passage tomb “cemetery”. Cairn T is the most prominent on the highest summit with an east facing entrance, illuminated by a beam of light at the equinox. There are 6 satellite tombs. The proposed windfarm would be 17km to the east. The turbines would be small features with a lateral extent of 14° and would appear in view of the equinoctial sunrise. The magnitude of the impact is deemed negligible, with slight significance. The windfarm would be 20km from Trim Castle and would be only faintly visible from there. Again it would have an impact of negligible magnitude and slight significance. The Hill of Lloyd is a prehistoric hillfort with an 18th century viewing tower. The turbines would be 5-17km from the tower and would all be visible. The impact is categorized as of minor magnitude of moderate significance. Cruicetown contains the ruins of as 12th century church with a sub-circular graveyard and a 17th century sandstone cross. Many of the turbines would be visible from here and would interfere with the relationship with a medieval relict landscape, which is an adverse effect of minor magnitude and moderate significance.

- The approach to cultural heritage advocated by ICOMOS has been followed by the applicant and through the EIS. A proportionate level of relevant detail has been provided. The issue of significance of an asset is considered, and then the likely impact upon it.

- Carlanstown was considered as a whole in the EIS. Page 32 of appendix L1 refers to St. Patrick’s Well in the village.

- The significance of Newrath House was appraised and recognised in the EIS.

- The reasons for the board’s refusal for the Cregg windfarm was due to an impact on a specified key axial vista at Whitewood House, rather than simply due to the visibility from a designed historic garden. The proposed development would not have such an effect and can be distinguished from the previous case.

- The EIS gave adequate consideration to the likely effects on the village and ACA at Moynalty, including the ringfort and Rathmanoo House, cf. p4 of Appendix F4.

4.35 Impact on residential amenities, property rights and value

- The turbines would be too close to houses. The 500m separation distance is inadequate for turbines of this size. In Denmark turbines are required to be one and a quarter miles from houses, which is far greater than the 500m separation proposed in this application. There should also be compensation for the loss of property values in certain circumstances, as in that country.
- The development would injure residential amenity due to noise, vibration, shadow flicker, visual intrusion and the disturbances associated with traffic and construction
- The development would devalue property. Valuers with experience in the local market will certify this fact. The company should compensate the landowners who would suffer in this regard. The proposal for the turbines has led to prospective purchasers withdrawing from transactions, in one case because the bank withdrew its mortgage offer.
- Studies of property prices from the UK are not a useful guide to the present case as turbines there are generally set further back from houses and would not be as high as those now proposed.
- The devaluation of property arising from a form of development which is only viable due to a state decision to compel a subsidy to it from energy consumers would represent an unjust attack of the property rights of adjacent landowners and would be unconstitutional. The board cannot authorise such an unjust attack on property owners' rights. The development is being orchestrated by a subsidy from the state but there is no fair compensation on those who are losing out.
- Property devaluation is a matter that requires EIA under the as it is an effect on material assets and human beings. Therefore the board must conclude that there would be no property devaluation before ti could grant permission following the precautionary principle. This conclusion must be based on local surveys, following the statements of the inspector in the Yellow River windfarm case (PA0032).
- The applicant should guarantee house prices.
- The turbines would overbear houses.

- The development would impinge on views from houses.
- The proposed development would inhibit house sales in the area.
- The development would devalue property around Carlanstown.
- A UK found that proximity to wind turbines caused an 7% reduction in property prices. A study issued by Oxford Brookes University sponsored by the UK Royal Institute of Chartered Surveyors in 2007 showed significant falls in the value of houses near turbines higher than 90m.
- The aviation lights on the towers would cause light pollution.
- The development would prevent members of the local community and their children from building houses on their land near turbines or selling that land for others to build on.
- Graham O'Reilly objected to the impact of the development on his historic home at Kilbeg House, albeit one which is not a protected structure. The setting of the house and the views from it would be compromised by the proximity of the turbines, with T6 being only 186m from the property of historical and architectural importance. It would also interfere with the keeping of horses there which are trained and exercised right up to the field boundary. It is grossly unfair that his house would be surrounded by 6 turbines. The setting and outward views are essential components of this tastefully restored house. The house was not properly assessed in the EIS by a properly qualified conservation architect. Country people choose to be country people due to their appreciation of the landscape and the community. The delivery of a 60m blade along country road and the laying of cables under them would damage trees and hedges along the roads, including a line of beech trees that belongs to the observer at the front of his house. The point was re-iterated by Sonya O'Reilly.
- The development would injure the setting of Rathkenny Cottage and the view from it.
- The residential property includes the entire curtilage of a house. The separation distance should be measured from the edge of the curtilage to the nearest point that the blade would approach it.

In response the applicant said –

- The applicant accepts that a turbine would have a prominent visual presence when standing 500-1,000m from a house, but the separation between the turbines would reduce instances where many turbines were impinging on views from a house.

- Studies from the UK and US were cited to indicate that the proximity of wind turbines does not result in a lowering of property prices. The applicant's opinion is that the price of houses more than 500m away would not be seriously affected by the development. At the hearing the applicant cited three sales that had been entered on the property price register since the publication of the application as evidence that property values had not fallen due to the making of the application.

- The applicant's position is that the windfarm would not devalue adjacent property and it has no proposal to compensate other landowners. The board's duty is to consider the proper planning and sustainable development of the area and to carry out an environmental impact assessment. It has no role in property arbitration.

- The lights on the towers are to warn aircraft and are not directed to ground level so they would not give rise to perceptible light pollution.

- The applicant confirmed its position that all the turbines would be at least 500m from a dwelling after the revisions to the location of turbines 21, 32 and 37. The measurement was made in accordance with the 2006 guidelines from the centre of each proposed tower, which is a static point, to the walls of each house.

- The windfarm guidelines outlined a setback of 500m for turbines from houses, but there was no policy on the building of houses in proximity to existing or permitted turbines. Whether permission for such was granted was a matter for the planning authorities and the applicant could not speak for them.

- The impact of the development on Rathkenny Cottage was considered at s3.2.8 of the EIS.

- Kilbeg House and the impact of the development upon it were properly considered in the EIS. The turbine delivery and cable laying in the public road would not unduly threaten roadside vegetation, other than that which would have to be kept in check for road safety purposes regardless of the development.

- The European Court of Justice determined in the case of Leth vs. Austria that property devaluation was not an environmental impact, although it may be an indicator of one.

4.36 Domesticated animals

- The development would have a negative impact on horse breeding and the equine industry. The Irish Racehorse Trainers' Association stated that wind farms are a danger to horses, riders and handlers. The noise and shadow flicker from the development would give rise to a risk of bolting by animals with a highly developed flight instinct. Horses perceive shadows as obstacles and would react strongly to moving shadows and would not acclimatise to them. Health and safety is a crucial issue. How could anyone grant permission for a development that could injure or even kill? The board should adopt a principle never to allow development that would have a physiological impact on human or animal health. It would be irresponsible for a stable owner as an employer to allow a jockey to ride horses near a wind turbine.

- Noel Meade of the Tu Va stables at Castletown objected to the development on the grounds that it would threaten his business and the health and safety of his employees, as well as his animals. He stated that he has 35 employees, with 100 horses kept at his yard and 25 in the surrounding fields. The business is volatile, with horse owners having a wide choice as to where they stable their horses. Turbines 36, 37, 42 and 43 would be within 750m of his business. T36 would overhang his gallops. Horses are sensitive animals with a highly evolved flight instinct which could be triggered by the operation or construction of the development. This has significant implications for the health and safety of jockeys and handlers. All of Mr Meade's property is used for training horses.

- Paddy Rogers stated that turbines would stand 248m and 294m from the edge of one his gallops.

- There are a wide range of horse types and it is an unwarranted and unsubstantiated generalization by the applicant to state that they could acclimatise to wind turbines. A wind turbine starting to move could have a catastrophic impact on a nearby mare in foal.

- There 8 licensed trainers within 10km of the proposed windfarm and 60 in the county. A negative economic impact on the bloodstock industry would be disastrous for Ireland. This would arise from the mere perception of horse owners that the proximity of turbines lessened the utility of an equine facility.

- A study of the Lusitano Stud Farm near Lisbon showed that horses bred near wind turbines had developed flexural deformities in their forelimbs.

- Turbines nos. 36, 37, 42 and 43 are too close to the gallops at Noel Meade's stables at Castletown and they would cause a significant risk of injury to the horses and jockeys using it.

- The Kells Equestrian Centre at Carlanstown provides an important service for children and adults, particularly those with vulnerabilities. It would not be safe for the children to ride horses in and around this facility if the development were carried out. The development would therefore destroy a business and a vocation.

- The development would have a significant negative impact on the livery business of James and Louise Farrell where 20-40 horses are kept throughout the year. They also have planning permission for a house at Newrath under Reg. Ref. KA140200 that would be 650m from a turbine but which was not included in the tables of houses in the EIS.

- Observers have provided expert evidence from horse trainers and vets to establish the risk to horses. The applicant has not adduced similar expertise in rebuttal.

- The development would have a negative impact on the protected structure and equestrian facilities at Mountainstown House, which would be only 800m from turbines 4 and 5.

- T19 would be 370m from a free range poultry unit. The noise generated would render the unit unviable. The turbine would also be 750m from an historic farmhouse at Dowdstown House and would sterilise the farm for future development.

- The proximity of wind turbines has been associated with a decline the milk yield from cattle. Reports from Japan have indicated a change in the behaviour of dairy cows near turbines, who will not lie.

- The carrying out of development would release particulate matter to air and would give rise to a risk of infection of soil borne diseases, including blackleg which is prevalent in the area, both of which would threaten the well-being of livestock. The works would not achieve significant separation distances from agricultural lands and spores could easily travel between them. Turbulence during operation would spread dust during ploughing and also spread such disease.

- Sharon Glynne and Desmond Kenny have a commercial poultry facility that produces free range eggs that would be detrimentally effected by the development, with the nearest turbine only 120m away. The dominant appearance of an arc around units would discourage the hens from ranging. Birds can be up to 10 times more sensitive to certain frequencies of light and are particularly sensitive to change. Noise form the development would also give rise to stress and panic among the birds. So the development would affect animals well-being and hinder production.

- Concern was expressed that the development would cause stress to sheep and impede lambing.

In response the applicant said -

- There is no robust evidence that wind turbines have an impact on horses. The turbines would not move in a sudden way that would give rise to visual or aural stimuli that would startle a horse. Horses have a demonstrated capacity to acclimatise to noise and unusual events, as shown in studies of horses travelling to race meetings in the UK. Noise from traffic and agricultural machinery is prevalent in rural areas and would be far more likely to startle a horse than the noise from a wind turbine. Similarly the moving shadows from trees would be more variable and intrusive on land used by horses that the shadow from turbines. The board has previously granted permission for significant wind energy developments in the vicinity of equine facilities after the consideration of arguments on the matter, cf. PL23. 221656.

- There are 3 equine facilities within 1km of a turbine, the closest being Mr Meade's stables which are within 750m of turbines 36, 37, 42 and 43. T36 at its revised location would be 334m from the gallops on that property. A main road runs by the gallops that would give rise to louder and more impulsive noise than would be generated by the proposed wind turbines. Most of the equine facilities are beyond the range at which shadow flicker is even theoretically possible. Any shadow flicker at Mr Meade's property can be mitigated by the system employed to limit that effect at houses. The gallops at Mr Roger's stables would be 600m from turbine 12, while turbine 6 would be 240m from Mr O'Reilly's boundary and 1km from his yard.

- The Portuguese study is an MSc thesis and was not published in a peer reviewed journal. It did not establish any link between the reported deformities in hoofs and wind turbines.
- The applicant denies that the development would be likely to have impact on poultry.
- The applicant denied that the development would be likely to have an impact on sheep or lambing.
- The applicant considered the matter of soil borne diseases and the outline CEMP restricts the movement of topsoils between farms. Dust will not be created during the operation of the windfarm.

4.37 Disruption during construction

- The road network in the area is not capable of accommodating the traffic that would be required to allow construction of the windfarm. The traffic would have to be accommodated on narrow roads where visibility can be poor.
- The development would result in the loss of roadside trees.
- The owners of the land required for temporary roads shown in appendix 32 of the EIS have not consented to the application. The proximity of such roads to Kilbeg Motte could seriously damage it.
- The Parents' Association of Rathkenny National School expressed a particular concern about the visibility there.
- The construction of the development would severely damage the road network in the area, including Salford Bridge
- Naomh Micheal CLG have their facilities along the N52 and are concerned about the impact of traffic upon them.
- The works required for the cable trenching are not properly described, with the omission of the details of other existing pipes and services in the road. They may impinge upon private property.
- The laying of cables will damage roads.
- The laying of cables could damage Kilbeg Motte and also Fletcherstown Church.
- No analysis was provided on the material taken from borrow pits or the impact of the removal on local aquifers and hydrology.
- There is inadequate information to show that the soil or bedrock could support the proposed turbines
- The operation of the borrow pits and batching plant would damage the amenities of nearby houses due to vibration and noise and dust and air pollution.
- The drawings of the turbines and the description of their foundations is inconsistent and inadequate. No engineering specifications of the foundations have been provided. The amount of material that would need to be imported to the site for the construction of the turbines and access

tracks may be much greater than that set out in the EIS and above the capacity of the local road network. There is no way that 15 HGV trips per day could deliver the required amount.

- Adequate details were not given of the modifications to roads required to facilitate the delivery of turbines.
- Permission should be refused until the applicant demonstrates conclusively that health and safety legislation can be complied with during construction.
- Penelope Moorehead stated that her house (ID no. 136 in the EIS) would be severely affected by the construction and operation of the windfarm. Borrow pit no. 5 would be less than 200m from her home. The main construction compound and batching plant would be c750m away. Her house would be less than 12m from the main turbine delivery route along the local road L34061. An access road would run behind her house. Turbine 33 would stand 700m from the house. So the development would have a very severe impact on the observer's house, but she does not have the resources for professional advice on the matter. A pre- and post-construction survey of her house should be carried out.
- Adequate details were not provided on the size and materials needed for the turbine foundations, therefore the analysis with regard to hydrology and construction traffic provided in the EIS are not reliable.

In response to the these issues the applicant said –

- Section 5.5 of the EIS sets out comprehensive mitigation measures to control emissions of dust from the borrow pits. These are standard measures whose efficacy is established. The borrow pits will be at some remove from houses, the closest being 92m away. There will be no blasting at the borrow pits. The borrow pits would be 4m deep and would not affect private wells.
- Appendix G of the EIS provides the result of test pits which indicate that the proposed borrow pits would contain granular material that is suitable for road construction, but not for structural fill or road surfacing. Imported matter will therefore be required the latter, as well as backfill sand for the cable trenches. Allowance has been made for this in the traffic projections in the EIS. The potential aggregate volume of the pits is

268,000m^3, of which about 150,000m^3 is likely to be required. The volume of imported material is estimated at 50,000m^3.

- Appendix 12 of the EIS provides details of the tree felling required for the development.
- The loads required for turbine delivery are large but not especially heavy and so they would not place under pressure on the roads and bridges over which they would pass that would be likely to give rise to structural degradation.
- The only proposals for tree removal are those within the red boundary line.
- The road network in the area is capable of accommodating the construction traffic, as was confirmed by the roads authority.
- The noise from the batching plant will meet the construction limits set in the EIS.
- The method of cable laying was described in the EIS to allow the board to complete an EIA of this element of the development. However all such works will be subject to the direction of the roads authority in order to protect the road network in the area.

4.37 Telecommunications

- The development would interfere with the signals from internet service providers
- The development would cause black spots in the mobile telephone coverage in the area which would be an inconvenience and hazard for farmers.
- The development would interfere with television signals.
- Ronnie McGrain operates a VHF communication service for taxis across Meath as well as broadband services. These are licensed by Comreg. The applicant has not shown that these operations would not be negatively affected by the development. The application should not proceed until Comreg have determined the matter.

In response the applicant stated -

- It had consulted with mobile telephony operators before submitted the application and undertook to implement any mitigation measures required after development, and it has therefore complied with the requirements set down in the guidelines.
- The implementation of mitigation measures is easier for digital broadcasts compared to analogue.

4.38 Community cohesion and consultation

- The consultation with the local community was inadequate and did not meet statutory requirements.
- The community has not been kept adequately appraised of the formulation of this proposal which may the start of a cumulation of projects.
- The amount of time given the consider that application documentation and the make a submission on the initial application was unreasonably short, given the volume of information to be considered. The board should have provided assistance to the community to enable the local community to readily comprehend the scope and implications of the proposed development. The cost of the application documentation was €2,988 which is exorbitant.
- The Board of Management of Scoil Mhuire at Carlanstown stated that there had been no consultation with the school. That for Heronstown National School also stated that the proposed development would have an irreversible negative impact on community relations.
- Children living in the area have not been enabled to play an active role in the consideration of wind energy development as is required by the UN Convention on the Rights of the Child.
- The development would cause people to leave the area, particularly young people who grew up there. It would also discourage people from moving to the area so the population would dwindle. This would have a particularly bad effect on the Gaeltacht.
- The report from the National Economic and Social Council on Community Engagement and Social Support for Wind Energy recommended a national discussion and strategy on energy policy; an effective and inclusive process of public participation; an enabling organization that could support problem solving and entrepreneurialism. The current application and process do not reflect these recommendations. There is a trade off between the scale of windfarm development and its social acceptance.
- The United Nations Convention of the Rights of the Child include a right to participation in decision making which effects them. The process followed by the applicant has not vindicated this right.

- 13 turbines would be visible from the grounds of Castletown GFC, but they refused to take money from the applicant. Neither would the county board as it would contravene the ethos of the GAA.
- The proposed development has divided the community.
- There is no social acceptance of the development and no community consent to it. The widespread and predominant opposition to the scheme should have some effect in a democratic society.
- A social impact assessment of the development should have been carried out.
- Only An Bord Pleanála can restore order and confidence to the community.

In response to these points the applicant said –

- The applicant engaged in a pre-application process of the local community over which it stands, despite the criticisms of those who object to the project. It is described in section 4.4 of the EIS. The initial consultation was done with reference to the previous Greenwire project. It involve the distribution of 8,000 copies of four editions of a newsletter from July 2012 to April 2013. A community liaison officer was appointed. Element Power held a public information event in Carlanstown on 6th June 2013. The current proposal was launched at another information day on 24th June 2014 at Kells. The company wrote to each household within 1km of a turbine. The applicant employed 5 community liaison officers and met with residents of the large majority of householders within 1 km of a turbine, as well as voluntary organisations who may have been interested in the community benefits programme. A total of 688 meetings were held.
- Participation in the near neighbour scheme is open to those who object to the development. The community benefit scheme would not be administered by the applicant after a grant of planning permission
- The applicant acknowledged that the application was accompanied by lengthy and substantial documentation. Its stated intention was to provide

more succinct and focussed responses to the concerns of observers in its submission of further information and at the oral hearing.

4.40 Validity of the application and associated procedures.

- The identity of the applicant is not clear. The transfer of the grid connection offer from the Oriel to the Emlagh windfarm would not be proper. The applicant is a different person from the prospective applicant. So the application is invalid.

- The laying of cables in the public road is an integral part of the development. Notwithstanding their adoption as public roads, the land on which they run remains privately owned. The owners of that land have not given their consent to the making of the application. Therefore the application is invalid as per article 22(2)(g) of the planning regulations and the Frascati judgment. Any attempt to develop private land in this way would be subject to legal constraint. A road opening licence cannot give anyone permission to trespass on private land in this way, even to a statutory undertaker.

- Adequate details of the actual development were not submitted with the application, and a grant of permission on foot of it would effectively be an outline permission, which would be illegal for a development requiring EIA. If this were a regular planning application to a council it would have been returned as invalid because the drawings do not meet the requirements of article 23 of the planning regulations.

- The application was not accompanied by adequate evidence regarding the impact of the development on the environment and people's health.

- The non-technical summary of the application is inadequate and does not state how far the turbines would be from houses. The non-technical summary is flawed and deficient and failed to provide the information required under many headings in Annex IV of the EIA directive. The non-technical summary contains technical language. It does not contain a scoping report. It does not adequately explain the nature of the project or how far turbines are from houses. The board should request the developer to calculate the distance from each house to each turbine, as occurred in the Yellow River case. The non-technical summary does not explain how much electricity would be generated by the proposed development, or when it would be generated, or what percentage would be to meet the National Demand Profile. It failed to indicate what material will be taken from the borrow pits for road construction.

- The EIS was unlawful and deficient and failed to consider cumulative impacts or the ECJ case C-50/09 of the Commission vs. Ireland which

found that Ireland had not properly transposed the said directive. The EIS did not properly cite the legislation amended by SI419/2012. The developer failed to provide the information required by Annex IV of the directive. The board is required under section 172(ID) of the Planning and Development Act 2000-2015 to satisfy itself that the EIS is adequate. A permission granted on foot of such a flawed EIS can have no effect so the application should be returned as per Mone vs An Bord Pleanala 2010 IEHC 395.

- The EIS failed to consider alternative ways to generate renewable energy, such as off shore wind power, and so is fatally flawed.
- The EIS is full of inaccuracies. Section 2.3.2.2 states that blades could rotate up to 24 times per minute, which seems incredible.
- The applicant did not employ professional planners to provide the requisite expertise in that regard.
- The current proposal was developed as part of the Greenwire Project for the export of electricity to the UK. The board should seek details of all alternative sites considered across the British Isles. The current proposal comprises project splitting from the Maighne windfarm.
- The EIS is badly structured and confusing, and so fails in its primary purpose.
- The EIS fails to address with the issues arising from the north-south interconnector.
- 6 weeks was not an adequate period in which to review the documentation submitted with the application including the EIS. The plans are not sufficiently precise to allow assessment of the project. 4 weeks was not adequate to prepare an observation on the further information. The hearing on the case should not have proceeded while the appeal on the judicial review of the board's pre-application notice is ongoing.
- Parity of arms should be provided between the applicant and any third parties who wish to comment on the application. Local residents do not have the resources to employ the necessary scientific, planning, environmental or legal experts to address their concerns and fears. Some have been employed with what limited resources the local community does have at its disposal, although this renders the process unfair. There is a duty on the board to carry out its own research on the matters raised.

It should not delegate its responsibilities in this regard, following the Kelly judgment. The assessment obligation is distinct from the other procedural obligations under the EIA directive.

- The process and the developer are in breach of article 6 of the Aarhus convention because the public were not given the early participation in the decision making procedure. The public notice of the application was not early enough because the site had already been selected at that stage. The board should therefore return the application.

- A full strategic environmental assessment (SEA) is required for this project. The board may not grant permission without such following article 3 of the SEA Directive because this is an energy programme that sets the framework for future development consents and because it requires appropriate assessment. There is a complementary relationship between SEA and EIA to avoid a lacuna in assessment, as set out in the Advocate-General's opinions in the ECJ cases C105/09 and C110/09. A failure in the board to carry out an SEA will result in a lacuna in assessment so a consent cannot be granted.

- The Meath Wind Information Group should be granted its costs in relation to the submissions, oral hearing and court actions. The board's power to award costs must be used reasonably even if the legislation refers to absolute discretion.

- The cumulative impact of the development with the proposed north-south interconnector and its pylons must be assessed.

- Proposed roadworks at Stephenstown and Ardlonan would go outside the red boundary line for the application which is therefore invalid. The revised proposals submitted as further information involved laying an access road outside the red line and 14.38ha more site area. The revised locations of turbines T37, T21 and T32 are 312m, 125m and 125m respectively which is far from de minimis. The failure to advertise these significant changes also renders the application invalid.

- There was no site notice in the Gaeltacht.

- The development is not strategic infrastructure because adding more wind energy generating capacity to the Irish system is of no strategic value, and so the application should not have been allowed to by-pass Meath County Council.

- The land along which the public roads run remain in private ownership. The applicant has not secured the agreement of the private landowners to the making of the application or the laying of cables along those roads. Therefore the application is invalid. Even if a purported permission were granted, then it would not be capable of implementation as the applicant lacks sufficient interest in land to lay the cables along public roads which, following the O'Grianna judgment, is an integral part of the development.
- Concerns were expressed regarding objectivity on the part of board members that may have been executives or consultants for the windfarm industry.
- The inspector refused to answer questions at the oral hearing or to facilitate participation in accordance with the board's published guidelines on behaviour at hearings.
- A 10 year permission would be inappropriate as environmental conditions may have changed in the intervening period.
- The applicant included road works on private land as part of the application to which the owners did not consent.

In response the applicant stated –

- The board does not govern the allocation of grid connection offers by Eirgid.
- The EIS complies with the requirement of directive 2011/02/EU. The 2014 EIA directive has not been transposed into Irish law and the date for doing so has not passed, so it would not have direct effect on the state either. An Australian judge is quoted to the effect that an EIS could not cover every aspect of every conceivable scientific issue and there will always be some expert prepared to deny the adequacy of a treatment (Prineas vs. Forestry Commission of NSW 1983 49 LGRA). Craig vs. ABP 2013 IEHC 402 is quoted to the effect that it is a matter for the board to judge the adequacy of an EIS. The EIS contains an outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment, which is what the legislation requires.
- The addendum to the EIS allows for cumulative assessment with the Maighne windfarm, and no project splitting has occurred.

- The physical grid connection is described in the EIS as it is part of the development for which permission is being sought. The proposal therefore complies with the requirements of the O'Grianna judgement.

- The statement at section 2.3.2.2 was meant to be typical. 17rpm is the fastest the blades would turn.

- The law requires the EIS to provide the data to identify and assess the main effects which the proposed development is likely to have on the environment, and it has done so. The EIS could not provide an exhaustive description of every conceivable impact that the development might possibly have on the environment however unlikely, although this counsel of perfection is implicit in many of the allegations put forward by observers who allege that a topic was not dealt with satisfactorily. The draft CEMP demonstrates the efficacy of the mitigation measures in the EIS and how they will be implemented.

- An SEA is not required for this windfarm project. It is for the board to complete an EIA.

- The public participation required by Irish and European legislation has been provided for. No decision has been made to allow the project or to imply that it would receive consent.

- It is for the board to carry out an appropriate assessment of the proposed development.

- The applicant acknowledged its error in including certain private lands for roadworks in the application without the consent of its owners. It clarified to James and Louise Farrell at the hearing that this was due to its misapprehension that those lands were part of the public road, and it confirmed that they will be used for the carrying out of the development.

- The applicant has provided the details of the applicant company required by law. The board may not have regard to the identity of the applicant when determining the merits of the proposed development.

- The scheme of regulation for a section 37A application to the board for permission is different from that which applies to a normal planning application to the council under section 34, as was determined by the High Court in the judicial review in the Rathiniska case, 2014 JR 340. The issue of the diversity of legal identity of the applicant from the prospective applicant was considered in the judicial review of the pre-application

declaration. Section 37I of the act allows the minister to make regulations regarding the detail of section 37A applications, illustrating that the regulations at article 23 and 33 for normal planning applications do not directly apply to the current application.

- The applicant has sufficient legal interest in land to make the application. the Frascati judgment sought to avoid frivolous application, which the current one is not. Section 48 of the Electricity Regulation Act 1999 gives the regulator the power to grant licences to persons to lay electricity cables. The applicant will apply for such licences if granted planning permission to give it the legal power to lay cables in public roads. The applicant therefore has a sufficient prospect of acquiring the necessary interest to carry out all of the development to allow the application for permission to be made.

5.0 APPROPRIATE ASSESSMENT

5.1 Article 6 of the Habitats Directive requires a project to be subject to an appropriate assessment of its implications for a Natura 2000 site if it is likely to have a significant effect on a site so designated or is in the process of that designation. Section 177U of the Planning and Development Act 2000-2015 requires the board to carry out a screening for appropriate assessment of a proposed development in order to assess in view of best scientific knowledge whether the project is likely to have a significant effect on a site individually or in combination with another plan or project. Section 177U(5) directs the board to determine that an appropriate assessment of a proposed development is not required if it can be excluded, on the basis of objective information, that the proposed development will have a significant effect on a site. Ms Justice Finlay Geoghegan discussed the obligation imposed by section 177U in the decision on Kelly vs. An Bord Pleanala 2014 IEHC 400 citing the opinion of Advocate-General Sharpston in the ECJ case of Sweetman C-258/11 that "the possibility of there being a significant effect on the site will generate the need for an appropriate assessment"…"it is merely necessary to determine that there may be such an effect" . That opinion also states "The requirement that the effect in question be 'significant' exists in order to lay down a *de minimis* threshold."…."If all plans or projects capable of having any effect whatsoever on the site were to be caught be Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill".

5.2 The proposed development would not be in or immediately adjacent to any Natura 2000 site. Therefore the proposed development would not have the potential to have any direct effect on any Natura 2000 site.

5.3 There are four Natura 2000 sites within 15km of the proposed development –

The Special Area of Conservation(SAC) at the River Boyne and Blackwater, site code 002299, which is 1.59km from the proposed development, whose conservation objectives refer to the species of River Lamprey, Salmon and Otter, and to the habitats of alkaline fens and alluvial forest.

The Special Protection Area (SPA) at the River Boyne and Blackwater, site code 004232, which is within 1.8km of the proposed development and whose conservation objectives refer to the species of Kingfisher.

The SAC at Kilconny Bog, site code 000006, which is 5.4km and upstream of the proposed development and whose conservation objectives refer to the habitats of active raised bog and degraded raised bog capable of regeneration.

The SPA at Strabanan-Braganstown, site code4091, which is 14.5km from the proposed development and whose conservation objectives refer to the species of Greylag Goose.

5.4 In the Natura Impact Statement submitted with the application, the applicant identified the potential for an indirect impact from the development on the SAC and the SPA at the Boyne and Blackwater due to the possibility that water draining from the site during construction would contain sediment, fertilized soil or contaminants that could affect the quality of waters in the Natura 2000 sites, which in turn might impinge upon the conservation objectives relating to kingfisher in the SPA or salmon, river lamprey or otters in the SAC. It therefore stated that an appropriate assessment of the proposed development was required. No other potential direct or indirect impact on any SPA or SAC was identified. The NIS provided information for an appropriate assessment of the development. It described mitigation measures that would be put in place to ensure runoff from the development did not affect water quality, including the provision of the following during construction–

- Swales around the bases and hardstanding for turbines
- Interceptor channels where overland drainage would be blocked
- Cross drains under access tracks
- A set back of 50m from watercourses for supporting infrastructure
- Silt fences where haul road were close to watercourses
- The use of biodegradable lubricant for any drilling that may be required
- Geotextile covers for spoil heaps and the silt fences at the outlet of drainage from them
- An emergency silt control and spillage procedure
- Designated areas for concrete wash down within the site compound and batching plant with runoff drained to a settlement lagoon
- The pumping of turbine excavations to the site drainage system to avoid standing water with high silt content
- Wheel washing at site entrances

- Stilling ponds at borrow pits and elsewhere on the site as construction progresses. The outfall from the ponds may be closed at a weir during adjacent construction
- Confining works to stream and banks to the close season for salmon between October and March
- Fencing around water bodies
- Tree felling only in accordance with Forestry Service guidelines.
- The surface of access tracks to be capped to cover sub-soils that would otherwise be exposed.
- Daily visual inspection of water quality during construction, with weekly field measurements and grab samples at 7 specified locations.

The implementation of these measures by the contractors on site would be in accordance with the Construction Environmental Management Plan and the Site Drainage Management Plan. There was some discussion of the minutiae of the measures at the oral hearing, but no issues of significance were raised. Furthermore, during operation the lubricant oil for the transformers will be stored only on the bunded areas; while the erosion and sediment control measures will be inspected weekly until vegetation has been re-established.

5.5 The NIS concludes that measures will succeed in maintaining the conservation status of the relevant Natura 2000 sites and that no reasonable scientific doubt remains as to the absence of any adverse effects on the integrity of the SAC or SPA at the River Boyne and Blackwater.

5.6 After consideration of the NIS, EIS, the submissions from various persons including the Department of Arts, Heritage and the Gaeltacht, and inspections of the site and surrounding area, I would concur with the statement in the NIS that the proposed development would not have the potential to have a direct effect on any Natura 2000 site. Neither would it have the potential to have any indirect effect on any Natura 2000 site other than the SAC and SPA at the River Boyne and Blackwater, having regard to the separation distance between the proposed development and other Natura 2000 site including the SAC at Kilconny Bog and the SPA at Strabannan-Braganstown, and the absence of a hydrological link to those two sites. The effects which are relevant in this regard are those which arise in the context of article 6(3) of the Habitats Directive and section 177U of the planning act. They pertain to particular

designated sites, and should not be simply conflated with the wider obligations on the state with respect to the species and habitats set out in the Annexes to the directive.

5.7 The measures set out in the NIS which are described as mitigating potential indirect effects on the SAC and SPA at the River Boyne and Blackwater are standard construction methods to avoid a deterioration in the quality of surface waters arising from ground works in rural areas, including the operation of a batching plant on site. They are fully and properly described in the documentation submitted by the applicant. They are common practice and their efficacy in controlling the release of sediments, soil and other contaminants to waters is well established. Their implementation would ensure that the proposed development would not have the potential to have a negative effect on the quality of the ground- and surface water on the site of the proposed development, which includes the site of the turbines, supporting infrastructure and the cabling between them and the national grid at Gorman, or on the quality of waters in the vicinity of the development or downstream of it.

5.8 The measures set out in paragraph 5.4 above would be required by the proper planning and sustainable development of the area, even if no question of an indirect effect on a Natura 2000 site arose. As such they should be regarded as best work practices that are an integral part of the proposed development that will be implemented by those carrying out that development at the same time and as part of the same process, as opposed to separate measures that would be conceived and implemented in a *post hoc* fashion by other persons. The consideration of the use of proper work practices as an intrinsic part of the work to be carried out for the purposes of screening for appropriate assessment should follow the approach adopted by the board in the referral case 09.RL. 3080, 3081 and 3113 which was subsequently endorsed by the High Court in Rossmore Properties Ltd and Killross Properties Ltd vs. An Bord Pleanala, 2014 IEHC 557. Therefore the fact that they will prevent a negative impact on the quality of waters within the SAC and SPA means that the proposed development itself would not be likely to have a significant effect on any Natura 2000 site. Therefore the likelihood of any significant effect can be excluded on the basis of the objective information contained in the EIS and NIS regarding the nature of the habitats and drainage regime in and around the application site and between it and the SPA and SAC at the River Boyne and Blackwater, which were consistent with the observations made by the inspector there, and by the description of the development including the measures to prevent a negative impact on water quality that are provided in the EIS and NIS. This exclusion can be done when considering the proposed development

individually or in combination with any other plan or project, including the proposed Maighne windfarm or the proposed north-south interconnector.

5.9 The requirement to carry out an appropriate assessment of certain projects is laid down is article 6(3) of the Habitats Directive in order protect and promote the conservation objectives of Natura 2000 sites designated under the directive or in the process of being designated. It therefore only arises where the particular characteristics of a project, including its location, are such that it is likely to have a significant effect on a Natura 2000 site. It is not a generic procedural requirement that arises simply by virtue of scale or the class of development to which a project might belong. The actual location of the project is crucial. The particular characteristics of the project for which consent is sought in the current application, including its location and the means by which water quality would be protected during its construction and afterwards, are such that it would not be likely to have a significant effect on any Natura 2000 site, either individually or in combination with other projects, and this exclusion can be made in view of best scientific knowledge and on the basis on the objective information set out in the EIS, NIS and this report. Therefore, following the law set out in section 6 of the Habitats Directive and Part XAB of the planning act, as set out by the High Court in Kelly vs. An Bord Pleanala and Rosssmore Properties & Kilross Properties vs. An Bord Pleanala, the board should determine under section 177U(5) of the planning act that, following a screening exercise, an appropriate assessment of the proposed development is not required.

5.10 Having regard to the foregoing, it is reasonable to conclude on the basis of the information available, which I consider adequate in order to issue a screening determination, that the proposed development, individually and in combination with other plans or projects would not be likely to have a signfiacnt effect on any European site, in particular the SAC and SPA at the Boyne and Blackwater with sitecodes 002299 and 004232 respectively, in view of the sites' conservation objectives and an appropriate assessment is not therefore required.

6.0 ASSESSMENT WITH REGARD TO PUBLIC POLICY

6.1 The proposed development would provide a facility to generate electricity from a renewable source. There is an obligation under the Renewable Energy Directive on Ireland to increase the share of energy used in the state that is generated from renewable sources to 16%. Under the NREAP the state decided to fulfil its obligation by having 40% of the electricity consumed in 2020 generated from renewable resources. One of the measures adopted by the state to achieve this target was the REFIT 2 scheme that would provide a guaranteed price for electricity generated from plant using wind, hydro and biomass/landfill gas with a capacity of up to 4,000MW in total. The 'Gate 3' process allows Eirgrid plc, as the licensed operator of the national grid, to control and approve the connection of 4,000MW of such connection capacity to the grid. The proposed development has approval to connect to the grid. There was several queries from the observers as to the timing and details of such approval by Eirgrid. However the applicant stated that such approval was in place and that it referred specifically to the development proposed in this application with a connection to the Gorman sub-station. This statement is controvertible but was not controverted, and is therefore accepted as a fact. Clearly, therefore, the proposed development would be in keeping with European and national energy policy. This simple conclusion is readily apparent from the nature of the proposed development and the plain meaning of the documents that set out those policies as published by the bodies who are responsible for making them.

6.2 The national planning policy on wind energy development that is set out in the 2006 guidelines for planning authorities is consistent with European and national energy policy in that it has clear statements in favour of this type of development. The proposed development is supported by that policy. The local planning policy set out in the county development plan refers to the guidelines and includes a general statement in favour of the exploitation of renewable energy resources at section 8.1.3. The proposed development is also supported by that policy. There are, of course, many other specific factors to be considered before a conclusion can be reached as to whether this particular development on this particular site is actually in keeping with the proper planning and sustainable development of the area. Some but not necessarily all of those factors are set out in the guidelines. However the consideration begins with the fact that the type of development proposed in this application is supported by European and national energy policy, and by national and local planning policy. The board must have regard to this fact. It is not board's role to question or assess those policies, as the policy makers

answer directly or indirectly to voters in a way that the board does not. Neither is it open to the board to enquire whether those policies and consequent measures have been validly adopted, as that would intrude into the judicial role of the courts.

6.3 In order to carry out the proposed development the applicant is relying on the interest in lands that it would acquire privately. Leaving aside the laying of cables in the public road, the status of which is considered at section 8.6 below, the development would be carried out by a private developer on private land without resort to the compulsory acquisition of property. The right to private property encompasses the right of a person to use and develop the land that they own in the manner in which they decide. The latter right has been very heavily constrained by law in order to protect the public good and various aspects of the environment, as well as the private rights of affected neighbours. Nevertheless it persists. Its exercise should only be frustrated if there is a specific justification for doing so. The argument that the proposed development would be a valid exercise of such private rights was not made explicitly in the written submissions or at the hearing. However it was implicit in the submission from several observers who said that refusing permission for the development might be perceived as preventing "farmers" from exploiting their land as they saw fit, or depriving them of a pension. This is a euphemistic way of making the same point that a person has a right to benefit from their ownership of land, even though that right has to be balanced with other private rights and the public good as enshrined in the concept of the proper planning and sustainable development of the area.

6.4 An argument was made by objectors to the development that the benefit that would accrue to the developer, and thence to the landowners, would derive from a state imposed levy on electricity consumers, with the implication that the development should be assessed more stringently therefore. This argument was not convincing. For practical reasons the operation of commercial markets and the vindication of property rights will always require some state supervision and control. The requirement for public intervention is even greater in the electricity system as the grid itself forms a natural monopoly, a failure of supply would have unacceptable social consequences, and the external costs that arise from greenhouse gas emissions could not otherwise be connected to the benefits that accrue to individuals from those emissions. Furthermore, and as stated above, it is not the board's role to review or judge the merits of any such government action. The proposed development is a private development for the purposes of the planning system. The landowners' consent to the making of the application on their land therefore contributes an element to the

justification of the proposed development that should not be disregarded, even if the board were to ultimately conclude it was outweighed by other considerations.

6.5 So the proposed development would be a private development on private land that would provide a facility of a type whose provision is supported by European and national energy policy and by national and local planning policy. The principle of the proposed development is established by these considerations. The applicant does not have to separately establish a need for the proposed development in order for further consideration to be given to the application, as might be the case if it required the compulsory acquisition of land or if it provided a type of development that was generally restricted by planning policy to particular locations or circumstances. The various arguments made by observers regarding the usefulness of wind energy development in general or the amount of it that should occur are not, therefore, directly relevant to the planning merits of this application. They could well inform the debate on public energy policy, but it is outside the board's power to conduct or determine such a debate in the context of a single planning application

6.6 The appropriate location of wind energy development is not set by energy policy. It is not prescribed by the guidelines either, which mandate the local planning authorities to designate areas that are suitable or otherwise in their county development plans. The regional planning guidelines do not provide clear or useful guidance on the matter. The planning policy basis for determining whether the site is suitable for the type of development proposed is therefore to be found in the provisions of the development plan that were made pursuant to the mandate provided in the guidelines. The Meath county development plan does not provide a specific and comprehensive wind energy strategy to this end like those contained in some other county development plans. However the board must consider the provisions of the county development plan as the elected members of the planning authority have actually made it. Section 8.1.5 of the plan specifies that the provisions which reflect the mandate of the guidelines are those contained in the landscape character assessments in appendix 7 of the plan. The site is in an area categorised as having a medium capacity for such development, which is the highest category that the county has. An argument was made that a development of this scale would need to be specifically envisaged by an objective in the development plan. However, while the absence of such an objective might undermine the planning status of a development that would be carried out by or on behalf of the council itself, it would not necessarily do so in the case of development on private land by a private developer. The guidelines

require the planning authority to make some provision for wind energy development in the development plan, and the elected members decided to do this in a particular manner that did not include such objectives. A policy against the proposed private development cannot be inferred from the absence of such specific objectives, given the mandate set by the guidelines. The location of the proposed development is therefore supported by the provisions of local planning policy as determined within the parameters set by national planning policy. As such it is reasonable to consider it to be a 'plan-led' proposal within the meaning of the guidelines.

6.7 So both the type and the location of the proposed development accord with the applicable public policy. This would support a conclusion that it was in keeping with the proper planning and sustainable development of the area and that permission should be granted. However this support might be outweighed by other relevant planning considerations that emerge from the environmental impact assessment or otherwise. The arguments put forward by observers regarding the relative merits of wind energy development in general and of this site in particular are indirectly relevant in this regard. They did not overcome the basic argument put forward by the applicants regarding the accordance of the nature and location of the development with the applicable energy and planning policies. However they did illustrate that there could be many other ways in which the obligations of the state under the renewable energy directive and the objectives of national policy with regard to energy and climate change might be achieved even if the proposed development were not carried out. This might occur through the control of energy demand, though the exploitation of other renewable energy sources, or through wind energy development somewhere else. It was established that there is a limit on the amount of wind energy generating capacity that could usefully be connected to the Irish grid, with the REFIT 2 scheme limited to funding 4,000MW of renewable energy capacity. The applicant made reasonable arguments that the relative merits of the site for wind energy development are enhanced by the constraints on the electricity grid and the widespread designation of Natura 2000 sites in other, windier parts of the countryside. However it was not demonstrated that the planning system might constrain the provision of the maximum amount of wind energy development that the grid could accommodate. So a refusal of the current application would not necessarily act as a direct and quantifiable hindrance on the achievement of the state's obligations and objectives under energy policy. So, while the proposed development is supported by energy and planning policies, those policies do not establish an over-riding imperative that would justify or require the carrying out of this particular development despite

should findings be reached that it would have particular negative effects that were relevant in planning terms.

6.8 In conclusion, the current proposal is supported by policy but is not required by policy. If the board considers that it is otherwise acceptable on planning and environmental grounds, then it may grant permission for it without having to having to determine a particular individual need for it. However if the board considers that it is not otherwise acceptable on planning or environmental grounds, then it should refuse permission for it notwithstanding its compliance with the general policies that govern wind energy development.

7.0 ENVIRONMENTAL IMPACT ASSESSMENT

7.1 The following assessment draws on the environmental impact statement and other submissions made by the applicant, prescribed bodies and members of the public during the course of the application and the hearing. It seeks to identify, describe and assess the direct and indirect effects of the proposed development on the environment with regard to the following factors -

- The landscape
- Human beings, including the impact upon human health and from noise and shadow flicker
- Flora and fauna
- Soil
- Water
- Air
- Climate
- Cultural heritage, including archaeological and architectural heritage
- Material assets, including livestock, roads and houses
- The interaction of the foregoing
- Cumulative impacts

It also considers the adequacy of the environmental impact statement including the outline of the main alternatives studied by the developer and an indication of the main reasons for this choice that he is required to provide. The proposed development is a project that is likely to have significant effects on the environment and a permission issued on foot of this application would be a development consent. So, following the EIA directive and part X of the planning act, the board may not grant permission in this case unless an environmental impact assessment of the proposed development has been completed. The proposed development is not a plan or programme within the meaning of the SEA directive and it is not subject to a requirement for a strategic environmental assessment.

The landscape

7.2 The impact of the development on the landscape is a crucial issue in the consideration of this application due to its implications for policy, amenity and cultural heritage. Many photomontages of views of the proposed development in the landscape were submitted by the applicant. Many observers queried particular details of the preparation of those photomontages. I advise that they were prepared and presented in a reasonable and competent manner, and as such they provide useful material for the board to consider. Nevertheless the preparation of photomontages necessarily involves a degree of selectivity and artificiality. They are never regarded as definitive and cannot replace objective and impartial judgement in the planning process, as the applicant accepted. However what the impact of the development on the landscape would actually be is readily discernible as the location, nature and maximum dimensions of the proposed turbines are clearly described in the application. The characteristics of the existing landscape are apparent from inspection and are also properly described in the EIS and accompanying documentation. What remains to be judged by the board is the nature and significance of that impact and its implications for the proper planning and sustainable development of the area.

7.3 The development would be located in a predominantly lowland, but rolling, agricultural landscape with an area of flat peatland near the centre of the proposed windfarm at Emlagh Bog. The area has an undulating topography and compirses mainly grassy fields separated by hedgerows, with agricultural buildings and a linear pattern of houses along most of the county roads. There are areas of bog, scrub and coniferous forestry around Emlagh Bog, and nucleated settlements at Lobinstown and Castletown, while the village at Carlanstown has some additional suburban development and that at Moynalty reflects its heritage as an estate village. There is a river valley along the Blackwater to the south of the site, and a drumlin landscape to the north. The landscape character assessment set out in the county development plan describes the area in and around the development as the north Navan Lowlands, being a landscape of moderate sensitivity. It is close to, but outside, the more sensitive area designated along the Blackwater valley to the south. The landscape character assessment from the development plan therefore provides the proper context against which to judge the impact of the proposed development. It advises that the landscape has a medium capacity to absorb wind turbines. The views designated for protection in the development plan are also material considerations. In the terms set out in the guidelines, the landscape in which the site would sit would be flat or hilly farmland rather than flat peatland. The guidelines advise that wind energy development should not

visually dominate those landscapes, although the views across them would be intermittent due to hedges and hills. The National Landscape Strategy was raised by several observers. The strategy does not specify a particular approach to proposals for wind energy development nor does it have a defined spatial component, although it does set an objective to carry out a landscape character assessment process across the country. The strategy does not alter the context for the assessment of the impact of the current proposal on the landscape set out in the relevant provisions of the guidelines and the county development plan.

7.4 The proposed turbines would be manufactured metal structures in a landscape that consists mostly of vegetation – grasses, trees and hedges – interspersed with structures built mainly with materials made to resemble stone – houses, sheds and roads. They would be much taller than any other upright feature in the landscape, be they trees, buildings or utility poles. There would be 46 of them in a relatively small area of the countryside. The proposed development would place a lot of structures in a particular part of the countryside that were much bigger and that looked quite different from all of the existing elements that can be seen there and which together establish this rural landscape. These factors form the basis for the repeated argument by observers that the proposed development is inappropriate in its character and scale for such a rural area. This is a substantial argument and one to which the board should give serious consideration. The fact that the development would introduce into an area of c120km^2 of grassy fields, hedges, bogs, forests and nearly a thousand houses (as stated by Cllr Cassidy) a combined total of 46 metal towers up to 109m high, around whose tip blades 60m long would rotate, would give reasonable grounds for the board to conclude that the development would visually dominate this area of hilly farmland. If the board does reach this conclusion then, following the policy set at section 6.9.2 of the guidelines, it should refuse permission.

7.5 However I do not commend such a conclusion to the board. Wind farms are a means whereby a naturally occurring resource is converted into a form that is more useful for people. As such they represent a type of primary production whose function is similar to the agricultural and extractive landuses that predominate in the countryside. They require an extensive area over which to harvest that resource effectively. They do not require a concentration of labour. Their operation does not give rise to emissions that need special means of treatment or disposal, although their output of noise and shadow flicker requires a certain separation between turbines and occupied buildings to mitigate its impact. Wind energy development is therefore an essentially rural landuse,

rather than an industrial or urban one. Furthermore it is one which the makers of policy at European and national level have decided to promote. In this context the fact that the turbines would not resemble the other elements in the rural landscape does not necessarily imply that they would not be compatible with it. The proposed development would not alter the landscape from a rural, agricultural one into an industrial one. It would alter the landscape of the area from a rural, agricultural one without wind turbines to a rural, agricultural landscape with wind turbines. The rural area around the site is not a wilderness. As stated in the EIS, it is a productive anthropogenic landscape that has evolved in accordance with the social and economic factors that prevail in the community that occupies it. The government elected by and answerable to that community has decided to promote wind energy development and has provided policy and economic incentives to this end. The current proposal is a response to these incentives. It is not intrinsically alien in this rural landscape, nor should it be regarded as having a significant negative impact upon it merely by virtue of its nature and scale.

7.6 However, notwithstanding the conclusion that wind energy development is generally compatible with agricultural landscapes, the particular impact of this development needs to be assessed. In this regard the board should note that the landscape around the site is neither particularly spectacular or sensitive. It has some capacity to accommodate a wind turbines, as stated in the development plan. I would also refer the board to the route screening analysis at appendix 4.A.3 of the EIS that shows how many turbines would be visible from the various public roads in the vicinity taking into account the screening provided by vegetation and otherwise. It illustrates that an observer in the vicinity of the proposed windfarm would usually have a view of only a limited number of turbines at any one time. This would certainly change one's perception of the area, as each of the turbines would be very big. But it would not fundamentally alter its visual character. So despite the size and number of proposed turbines, the landscape as perceived in the vicinity of the windfarm area would remain rural and agricultural as only a smaller part of the overall scheme would normally be visible to anyone, though its presence in the landscape would be clearly apprehended.

7.7 There are several vantage points on higher ground in the wider area that have expansive views over the generally flat lands of Meath, most of which are imbued with cultural and historical significance, including the Hill of Lloyd, the Hill of Tara, Loughcrew, Slieve Breagh, the Hill of Ward, the Hill of Skyrne and the Hill of Slane. The importance of the views over the landscape from these locations was accepted by all who made submissions and by the applicant.

Many or all of the proposed turbines would be visible from them, as outlined in section 12 of the EIS and the report from CAAS submitted by the planning authority. Nonetheless I would agree with the argument made by the applicant as to the nature and significance of this fact. The turbines would appear as a particular element of the wider agricultural and rural landscape. They would not dominate or fundamentally change the visual or functional character of that landscape. They would appear as one more productive element within an evolving landscape whose presence would be in keeping with the character of a productive rural area. The fact that some movement of the blades may be discernible at particular times would have not change this conclusion. The proposed development would not, therefore, have a significant negative effect on the perception of the wider landscape from these places.

7.8 As the proposed development would not injure the rural landscape in either the near or distant views in which it would feature, it would not contravene the various objectives in the development plan to protect particular views and prospects. Neither would it seriously injure the character of the Blackwater valley to the south of the site.

7.9 The layout of the turbines within the proposed windfarm was criticised by several observers as haphazard and contrary to the guidance at chapter 6 of the guidelines. However the situation of the proposed turbines largely reflects the 500m setback from houses that the applicant sought to achieve. The location of the houses is largely determined by the roads layout in the area, which itself would have been set out in response to the pre-existing landforms and drainage patterns in the area, as well as the objectives of those who established the pastoral agricultural landscape there in the late 18th and 19th centuries, augmented by the work of the Land Commission in the early 20th century. So the layout of the windfarm reflects the same social and physical factors that shaped the rest of the landscape around it.

7.10 The conclusions of the EIA with respect to the landscape should be that the proposed development would introduce a large number of turbines into a rural, agricultural landscape whose form and size would be quite different from the existing visual elements of which that landscape is comprised. If the board concluded that these new turbines would be an incongruous or dominant element in the landscape, then it should refuse permission following the policy set at section 6.9.2 of the guidelines. However I consider that the more appropriate conclusion would be that the proposed turbines represent a form of development that would introduce an acceptable type of change into a productive agricultural landscape that would not undermine its established rural

character. The desirability of accommodating wind energy development is set out in national and local policy, and the capacity of this particular landscape to accommodate it is recognised in the county development plan. After inspection of the area and consideration of the EIS and other submissions made in connection with the application, it is concluded that the this landscape could accommodate the scale and nature of the proposed change and that the proposed development would not fundamentally change the way in which the landscape would be experienced either in the vicinity of the windfarm or from more distant vantage points. The proposed development would not, therefore, have a significant adverse impact on this element of the environment.

Human beings

Health and safety

7.11 Many of the written submissions and a large part of the proceedings at the hearing contained expressions of concern by observers as to the impact of the proposed development on human health. Their content included general advice to the board about the importance of considering the potential impacts on human health in a comprehensive way. They referred to reports from many persons living near wind turbines of a range of symptoms that had a significant negative effect on their lives. There was extensive and poignant testimony on behalf of people with particular vulnerabilities, including children and those with autistic spectrum disorder and sensory integration disorder.

7.12 The observers' testimony was engaging and moving on a personal level. However it did not provide substantial grounds from which one could conclude that the proposed development gave rise to a significant potential impact on human health. Those objecting to the development did not present empirical evidence that would have established the likelihood for an adverse impact on human health from a windfarm to any substantial degree. The symptoms that have been reported as affecting people who live near wind turbines would occur in all human populations. Professor Evans's submission at the hearing attested to the link between sleep disruption and other poor health impacts. This correlation is not controversial. However it did not provide persuasive evidence that the physical characteristics or circumstances of the proposed development would cause a significant potential negative impact on sleep, so the submission failed to demonstrate that it would threaten human health. The observers who objected to the development on this ground did not convincingly posit a means by which the physical characteristics or circumstances of the development would have a negative impact on children or vulnerable people. The applicant was able to refute the suggestion that this could occur through infrasound emissions by a factual statement that infrasound levels in the vicinity of turbines are not generally higher than in residential areas. The noise emissions across the aural range are governed by limits specified by government and are considered below. The visual form of each proposed turbine would be geometric and regular even when the blades were moving. They would also be set back from occupied buildings. So their physical characteristics and circumstances would not cause them to be a unusually distracting visual element in the environment.

7.13 An accompanying argument was made by several of the observers that both the conception and execution of the proposed development would give rise to

anxiety and stress among local residents that would impair their mental and thence physical health. As a statement of fact, this may be warranted. The planning system will operate to prevent one private person carrying out a development that would have an intolerable impact on another person. But whether that impact is tolerable or not is to be judged on objective grounds informed by notions of reasonableness and common sense with due regard to the particular vulnerabilities that affect persons, rather than upon an anticipation of a particular subject's reaction that is only based upon that subject's statements.

7.14 The applicant was able to cite an authoritative statement in the Dáil by the minister based on the technical advice of Ireland's deputy Chief Medical Officer and Australia's National Health and Medical Research Council as to the absence of evidence that wind farms cause adverse health effects in people. While no statement from the minister can determine an individual planning application, significant weight should be the general principle that it expressed. The EIA process requires the gathering of information regarding a particular project and the environment in which it would be located. The assessment part of the process requires the consideration and application of elements of general knowledge that have been established scientifically in order to inform a legal consent procedure. EIA is not a research process that would allow new principles or facts of general applicability to be proved and demonstrated in a scientific manner. The board, as the consent authority under EIA, has neither the expertise nor the authority to determine a scientific controversy. Given the context set by the favourable policies that are set out in the guidelines and development plan which do not recognise a generalised threat to human health from wind energy development and by the minister's statement in the Dáil on 25th March 2015 of the technical advice to him, the board would require clear and compelling evidence of a threat to human health from the proposed development in order to justify modifying or preventing it on those grounds. The material presented by the observers on the topic would not constitute such evidence. The board is therefore advised that the proposed development would not be likely to have significant negative effects on human health.

7.15 Given the setback of the turbines from occupied properties, ice throw is not likely to pose a significant risk to human safety. The application contained appropriate information on the likely generation of electro-magnetic fields that is adequate to demonstrate that it would not be likely to pose a threat to human health or safety due to such effects, including those upon persons using particular medical devices.

Noise

7.16 The guidelines establish specific noise limits that would apply to the proposed development, being 45dB(A), or a maximum increase of 5dB(A) above background noise levels at sensitive properties, with a fixed limit of 43dB(A) at night; or an alternative in low noise areas where the background noise level is less than 30dB(A) that the daytime level be limited within the range of 35-40dB(A). A footnote on page 29 specifies that the levels are LA90, 10mins. Arguments were made by observers that the A-weighted range was not appropriate and failed to account properly for low frequency noise from wind turbines. There were also submissions that the noise limits in the guidelines were not appropriate and that regard should be had to the WHO guidance or ETSU-R-97, or that stricter limits should be made to protect especially vulnerable perons. However these arguments would not justify a departure from the requirement in the planning act that the board have regard to the guidelines made by the minister under statute which specify particular limits on the A-weighted range. If the minister altered those limits before a decision is made on this application, then the likely impact of the proposed development due to noise would require further detailed consideration. No such alteration has been made at this time.

7.17 Chapter 6 of the EIS provides information on the likely impact of the development due to noise. The location of all noise sensitive properties within 1.2km was mapped, nearly all of which were houses, although the applicant accepted that the graveyard and motte and bailey at Kilbeg should also be treated as one. The baseline noise environment was assessed by taking measurements at 17 locations. The results from that monitoring was included in appendix E1 of the EIS, although the map of the monitoring locations was only submitted with the further information. The results were extrapolated to indicate noise levels at various wind speeds. The modified results were then averaged out across different monitoring locations, and specified outliers were excluded. This yielded a single result for the area as a whole indicating that it was not a low noise environment and therefore the applicable limits under the guidelines were 45dB(A)$_{LA90}$ or 5dB(A) above background levels by day, or 43dB(A) $_{LA90}$ by night. Several of the observers questioned the detailed method by which the baseline noise monitoring was carried out, and there was extensive discussion of the matter at the hearing. Nevertheless I am satisfied that it was carried out in a competent and professional manner. It supports the conclusion that the area is not a low noise environment, which would be consistent with the prevailing landuse and settlement patterns there. The noise limits applied by the guidelines for this case are therefore 45dB(A)$_{LA90,\ 10min}$ or 5dB(A) above background levels by day, or 43dB(A) $_{LA90,10min}$ by night.

7.18 The EIS includes the method and results of a noise model that predicted that the applicable noise limits could be breached at 32 properties at night and at 7 during the day which are specified at appendix E4. The method employed in the modelling is considered reasonable and the results are considered reliable as they are based on quantifiable physical characteristics of the environment and the development. The applicant proposes a mitigation measure whereby the relevant turbines could be run more slowly or stopped to ensure that the applicable limits were not breached. This could effect up to 19 turbines at night and 5 during the day. As the applicant has reliable information regarding the noise that would be emitted by the turbines at various windspeeds and the location of the noise sensitive receptors, it is considered that such a mitigation measure would be likely to be successful in ensuring that the applicable noise limits were not breached. Its implementation would not undermine the utility of the proposed development in providing renewable energy as it would restrict only a small number of the proposed turbines during the hours when demand for electricity is higher, and even then only at times when certain wind speeds prevailed. Any breach of the limits could be measured by third parties and could be attested to in court without particular difficulty. An effective remedy could be required by a court simply by stopping the offending turbine. It is considered, therefore, that a planning condition applying the relevant limits would be capable of enforcement.

7.19 The noise emitted by the proposed development would not be likely to resonate within buildings, nor would it contain a low frequency component that could have significant effects that were not described in the EIS. Wind wake turbulence is not likely to significantly exacerbate its effects. The assertions on these matters by some of the observers were not well founded.

7.20 The works required to carry out the development would be likely to give rise to noise that would be transient and variable but which would have the potential to have a negative effect. In particular the construction of access tracks may give rise to noise at houses above 65dB(A)$_{LAeq,\ 1hour}$ at certain times because those tracks would be much closer to houses that the turbines themselves. It is proposed to mitigate this impact by restricting the carrying out of works at night and the screening of equipment. The type of activity and equipment that would generate the noise at this stage of development are much the same as those that would be used during other infrastructural works in the countryside which have been the subject of EIA by the board, including road schemes. The mitigation of the potential negative effects from construction noise by the imposition of a condition requiring the regulation of such activity to achieve

acceptable noise limits is an established measure whose efficacy is established. Its imposition in this case would mean that significant negative effects due to noise emissions during construction were not likely.

Shadow Flicker

7.21 The guidelines establish a limit for the level of shadow flicker to which an occupied property may be exposed, being no more than 30 minutes per day or 30 hours in a year. The EIS contained a model to predict the potential impact of the development in this regard which took into account the size and location of the turbines relative to the receptors, which are houses. A sunshine factor of 32% was applied in respect of the annual limit, but not the daily one. It found that 49 buildings might be subject to more than 30 hours of shadow flicker per year. It then applied a wind direction factor of 40% based on the fact that the blades would yaw, after which only a single dwelling would be likely to be exposed to more than the annual limit. The results of the model indicate that the development would not be likely to have a significant general impact as a result of shadow flicker. The modelling exercise was conducted in a reasonable and competent manner, and its results should be given due weight. There was an objection based on the fact that the model assumed a single window in each house facing a turbine, when many houses would in fact have several such windows. However any human observer would only experience each pass of the shadow from a blade as a single event in the room in which they were, so the said assumption would not undermine the conclusion of the model. It is also appropriate that the relevant limits refer to the impact on a house rather than its curtilage as the impact of shadows outdoors would not have a significant negative impact on amenity. The guidelines do not establish the impact of shadow flicker on fauna as a material consideration for planning purposes and no persuasive argument was advanced by observers that the board should do so. The matt coating of the turbines would mitigate any potential for reflective flicker.

7.22 Nevertheless, while the location of the turbines and the houses and the sun's course through the sky are certain, there is significant variability in the weather. So ensuring compliance with the limits set out in the guidelines requires a further mitigation measure. The proposed measure would involve stopping the turbines whose rotation could lead to such a breach in response to data from light sensors and wind vanes. The successful implementation of such a measure is eminently feasible with current technology. Its operation would not be likely to significantly curtail the utility of the proposed development. It is not

considered, therefore, that the proposed development would have significant negative effects due to shadow flicker.

Flora and fauna

7.23 The habitats on which the proposed turbines and access tracks would be built are predominantly agricultural grassland. A significant area under arable crops was described in the EIS, as well as coniferous forestry around Emlagh. I would refer the board to the habitat maps at figure 7.16 in volume 2a of the EIS. There is also an area of peatland near the development at Emlagh that includes cutover bog and a small area of high bog. That area is described in the peatland survey at appendix F5 of the EIS. Appendix F6 provides a list of the botanical species recorded in the area. Table 7.15 lists the habitats upon which the development would be carried out and rates them as of local importance, apart from an area of broadleaf woodland and lowland rivers that are evaluated as of county importance. These descriptions of the habitats and flora of the area are consistent with the observations during the site inspections and are considered reliable and comprehensive. Badgers, otters and pine martens have been recorded in the area. Brown trout, Atlantic salmon, European eel and Brook lamprey were recorded during surveys of aquatic ecology in the area. The heavily drained nature of the minor watercourses in the catchment of the Moynalty River has reduced their importance to fishery and ecology. Surveys of bat activity and roosts were carried out. The bat species recorded on the site were low fliers and not considered at risk from wind turbines, apart from Leisler's Bat which flies at heights over 10m and over significant distances and at speed. The information submitted with respect to bats in the area in the EIS was comprehensive and reliable. The arguments to the contrary by several observers were not well founded. Whooper swans were recorded at Headfort Demesne and at the tailings pond at Tara Mines in the 2010 census. Various surveys from December 2012 to April 2014 recorded Whooper swans in the area of the proposed development. Observers questioned the suitability of the bird surveys and there was extensive discussion of the matter at the oral hearing. However the EIS described the existing environment as one with a considerable population of Whooper swans and the development as one that could have a potential impact upon them, so the disagreements about the details of the survey methods were not considered crucial to the EIA of the project or the decision that might be made upon the application. Appendix F3 of the EIS presents the results of the collision risk model for the swans which predicts a mortality rate of 0.93 per annum. Significant numbers of golden plover were also recorded in the area.

7.24 The direct impact of the development on habitats and flora is not likely to have significant negative effects, given the ecological value on the habitats on which it would be built. Given the high degree of drainage that already occurs in the

around the area of high bog near proposed turbine T15, the construction of the development is not likely to have a significant indirect impact upon that habitat of higher ecological value. The works to carry out the development could have a potential indirect impact on aquatic habitats and the species dependent upon them due to the risk of the release of sediments or other pollutants during construction. However I would refer the board to the measures set out in section 5.4 above that would mitigate this impact on downstream water quality and which would represent good construction practice for groundworks in rural areas in any event. The proposed silt ponds are a suitable measure in this regard. Taking the efficacy of these measures into account, the development would not be likely to have a significant negative impact on aquatic habitats or the species that depend on them, including otters, Atlantic salmon, brown trout, kingfishers or brook lamprey. The development is not likely to have the potential a significant effect on golden plover.

7.25 The EIS analyses the potential impact on the population of Whooper swans in the area due to the risk of collision with the turbines. It provided survey results to indicate that only 3.8% of the recorded duration of the flights were between the heights of 50m and 170m which is where the blades would be moving. It referred to studies demonstrating a capacity for avoidance by the swans, and to a SNH report on the level of mortality that would be required to have a significant impact on a population of Whooper swans. The results of the collision risk modelling, a mortality rate of 0.93 per annum for the whole project, and the stated conclusion that this would not have a significant effect on the Whooper swan population is therefore accepted as reasonable and well founded. The development would not give rise to barrier or avoidance effects that would be significant for the conservation status of the species. Therefore it is not considered likely that the proposed development would have a significant adverse impact on Whooper swans.

7.26 Section 7.5.4.1 of the EIS recognises the potential negative direct impact from the development on bats due to mortality, especially on Leisler's Bats and where vegetation near the turbines would encourage movement and foraging by bats. Table 7.48 outlined mitigation measures at each of the turbines including the removal of vegetation from a 60m radius of turbines 4, 10, 12, 15, 22 and 23; curtailing operation of turbines 37 and 43 in dark hours during June and July due to its proximity to the roost at Yellowleas Farm. Turbines 14, 19 and 20 are also in areas of high recorded bat activity, so mortality should be monitored there and curtailment measures should be implemented if the results so dictate. A set schedule for such monitoring is set out in table 7.49. The residual impact on bats is likely to be negative and minor, according to the EIS,

and would not affect the conservation status of any bat species. After a review of the EIS and other documentation submitted by the applicant, the submissions from prescribed bodies and observers and of the proceedings of the oral hearing, I would concur with the conclusions in the EIS and commend them to the board as part of the EIA. The development is likely to have a minor negative impact on bats that would not affect the conservation status of any species.

7.27 The Environmental Impact Statement submitted with the application contained adequate baseline information about the flora and fauna in the area; about the potential effects of the development on flora and fauna; about the measures proposed to mitigate those effects; and about the likely residual effects on flora and fauna from the development. The inclusion of references to the mitigation measures in the draft Construction Environmental Management Plan provides a useful guide to the practical implementation of those measures which does not imply that they have not been properly described in the EIS. In this regard I note that the measure requiring post-construction monitoring of bat mortality contains a specific schedule for that monitoring and appropriate responses to its results. Having regard to the foregoing, it is concluded that the proposed development would not have significant negative effects on flora and fauna although it may give rise to some mortality to Whooper Swans and bats that would not have a significant impact on the populations of the relevant species. A grant of permission would not, therefore, contravene the obligations that arise from the habitats and birds directives to protect and promote the conservation status of the habitats and species that are specified in the annexes to those directives and which apply generally over and above the requirements that relate specifically to Natura 2000 sites under appropriate assessment.

Soil

7.28 The operational phase of the development would not be likely to have a significant impact on soils. An argument was made that the rotation of the wind turbines would be likely to lead to a greater level of air turbulence that would lead to the greater dispersion of disturbed soil that would increase the propagation of soil borne diseases. It is not likely that such greater turbulence would occur, based on the experience at existing similar wind farms, so it is not considered that the latter negative effect is likely either.

7.29 With regard to the peatland that would be disturbed during the works, the EIS refers to the results of peat probe and shear vane tests as well as visual inspections. It reports that the depth of the peat was found to be greater than 50cm near turbines 23 and 26, however the slope was negligible and below 2°. These conclusions are considered reasonable and likely to be accurate. The proposed development would not be likely to have a significant impact on slope stability either on peatland or elsewhere.

7.30 The construction of the proposed windfarm would necessarily involve the disturbance of a considerable quantity of soil during the excavation for the turbine bases and from the borrow pits for the proposed access tracks, although its impact on the productive capacity of the land in the area would be negligible as it would remove very little land from agricultural use. The EIS provides an estimate that 137,441m^3 of soil would be excavated, of which 47,830m^3 would be top soil and 89,611m^3 would be sub-soil. 206,782m^3 of aggregate would be required during construction of the access tracks, most of which would be from the borrow pits. The surface area of the proposed six borrow pits would be is 82,535m^2, so the depth of their excavation should not be greater than 4m. These estimates are reasonable and are accepted as likely to be accurate.

7.31 The extensive disturbance of soil in the development would give rise to a risk of soil erosion and sediment release. The measures to mitigate the latter potential risk were considered in section 5 above. To mitigate against the former it is proposed to minimise the time over which excavations are proposed. There will be no off-site disposal of soil and no stockpiles will be left on the site after construction. After use, the borrow pits will be filled with the overburden material initially removed from that borrow pit and elsewhere on the same property. All topsoil and peat that is disturbed will be kept on the same farm property to prevent its movement becoming a vector for soil borne pathogens. Infill will have a shall profile and will be seeded in a manner appropriate to local ecology. During decommissioning the turbine bases and access tracks will be

left in place but covered with local topsoil, which would avoid potential negative impacts at that stage of the project. The proposed mitigation measures represent good construction practice. Their efficacy has been established in previous developments involving groundworks in rural areas. They are likely to be effective in this case and it is therefore unlikely that the proposed development would have significant negative effects on soil.

Water

7.32 The proposed windfarm would stand in two river catchments. The north-western part of the site is in the catchment of the River Dee. The larger part of the site is in the catchment of the Blackwater, which itself is a tributary of the Boyne. Most of the latter part of the site drains to the Moynalty River which meets the Blackwater c3.4km south of the site. The remainder of the southern part of the site drains to the Blackwater via the Yellow River. The Moynalty, Boyne and Blackwater are designated as salmonid waters. The water quality status of the Dee is recorded as moderate, that in the Blackwater ranges from poor to good. There is no source protection area for groundwater on the site, with the closest at Nobber c4km to the north. Groundwater quality in the area is recorded as of good status, while groundwater vulnerability ranges from medium to high.

7.33 The windfarm itself is not vulnerable to flooding and is a water compatible type of development according to the guidelines for planning authorities on flood risk assessment. There are potential impacts from the construction of the development on waters. The felling of trees and the laying of hard standings and new access tracks could increase the rate of run-off from the site. The EIS calculates that it could increase the runoff to the Dee Catchment by 0.1%, that to the Blackwater by 0.24%. The laying of access tracks across waterbodies could also affect their capacity, as there would be 22 new stream crossings as well as works to 6 existing ones.

7.34 The proposed mitigation measures are set out in section 9.7 and 10.5 of the EIS. The crossing of streams will be provided with culverts designed for a 1 in 100 year flood with a 20% capacity to address climate change. The drainage systems of existing tracks will normally be retained. A clear span structure will be provided at the crossing of the Moynalty River and of the stream near turbines 7 and 8. New tracks will be drained with side swales and stilling ponds at the end of each swale run. A separation distance of 50m will be provided between new tracks and watercourses, save where crossings will be provided. Silt fencing will be used during construction to protect watercourses. Interceptor channels will be provided to bring overland flows across the new tracks. The provision of drainage measures, including the silt traps and stilling ponds, will be in tandem with or prior to construction. The hard standing at construction compounds will be drained to swales, with fuel storage and handling on bunded sites with petrol interceptors. The borrow pits will be provided from overland flows by interceptor channels that diffuse to vegetated areas. The pits themselves will drain to stilling ponds. Stockpiled materials will be bunded and covered when necessary, and all stockpiling will be for short

periods. Road will be capped as soon as feasible. All drains will be monitored during construction and afterwards. These mitigation measures represent good construction practice and their efficacy has been demonstrated in other development involving groundworks in rural areas.

7.35 Observers objected to the location of turbines in areas liable to flooding. However the statement in the EIS that wind farms are not vulnerable to flooding is accurate. And given the limited land cover that they require it is unlikely that they would exacerbate flood risk for other landuses, if they were competently constructed. The proposed drainage measures would be adequate to mitigate any risk that the cast off of rainwater from the turbines themselves would impinge on surface water drainage, while the use of an appropriate coating would mitigate the risk that such runoff would affect water quality.

7.36 Concern was expressed regarding the impact of the excavation for turbine bases on nearby wells. In response the applicant stated that the excavations would only involve temporary dewatering to a depth of 3m and would not affect the water table to an extent that could impinge upon wells on other landholdings. This argument is accepted, and it is not considered likely that the development would be likely to have a negative impact on private or public sources of water supply. The likely effect of the borrow pits and the measures to mitigate them were adequately considered in the EIS. The impact on water from cable trenching would not be qualitatively or quantatively different from that of the tracks and roads and water crossings in which they would be laid.

7.37 Having regard to the foregoing, it is concluded that the proposed development would not be likely to have significant negative effects on ground or surface waters or that it would give rise to an undue risk of flooding, provided it were competently executed with the mitigation measures that were set out in the EIS.

Air

7.38 The operation of the proposed development would not have an effect on air quality. The construction of the proposed development might affect air quality due to emissions of dust during groundworks and the exhaust emissions from vehicles and equipment, including the batching plant. The EIS describes mitigation measures to address, including spraying to suppress dust migration, timely surfacing of access roads and the covering of loads that might give rise to dust emissions. The implementation of these measures, along with the proper operation and maintenance of equipment, would represent good construction practice, and would be likely to avoid significant negative impacts on air quality.

Climate

7.39 The EIS states that the operation of the proposed development would be likely to reduce the emission of greenhouse gases by the equivalent of 180,000 tonnes per annum. Several observers disputed the basis of this calculation. Their arguments were persuasive. The extent to which the proposed development would reduce greenhouse gas emissions depends on factors that cannot be conclusively determined in the course of this application, including the alternative means of electricity generation that would be available during its operation. Its impact on climate change would be positive, but it may not be significant. The proposed development is not justified for planning purposes by a demonstration that it would in itself lead to a quantifiable reduction in greenhouse gas emissions. It is justified by its compliance with general public policies that have been made in order to reduce greenhouse gas emissions. Whether those policies are likely to be effective is not a matter for the board to review in the course of this planning application.

Cultural Heritage

7.40 The proposed development would involve the disturbance of previously undeveloped ground at the location of the proposed turbine bases and substation, at the borrow pits and along the new access tracks, as well as works on previously laid tracks and roads as part of the cable laying. It therefore has the potential to directly affect archaeological remains that may be in that ground or immediately adjacent to it. The scale of that potential impact is limited by the fact that most of the land in and around the windfarm will remain agricultural. The actual extent of ground that would be disturbed is very small compared to the area upon which the windfarm might have an indirect impact. Sections 14.2 and 14.3 of the EIS provide a comprehensive account of the recorded monuments in the vicinity of the proposed development, including the souterrain at Dowdstown ME078-006, and the potential effects upon them. Given the separation distance between the souterrains at Dowdstown and the works involved in carrying out the development, it is not considered that it would pose a significant risk to the conservation of that recorded monument. The EIS identifies potential impacts on the motte and bailey and the churchyard at Kilbeg, ME011-019 and ME011-020 in the vicinity of T8, and the cluster of archaeological features in the vicinity of T34 at ME012-018 amongst others. Measures to mitigate the direct effect of the development on those sites are described at section 14.4 of the EIS. They include archaeological testing at the locations of T34 and T8, as well as archaeological monitoring of the works there and at various specified locations including the laying of cables at Dowdstown. The proposed mitigation measures are justified and adequate to mitigate the potential direct effects of the development on archaeological features. The proposed development would not directly impinge upon any architectural structures of value to cultural heritage, including any protected structures. The bridge at Carlanstown is a protected structure and the turbine delivery route crosses both it and Ardlonan Bridge. However the applicant stated that, while the turbine loads would be large and awkward they would not be particularly heavy and so would not threaten the structure of those bridges. Nevertheless pre- and post-construction surveys are proposed to ascertain this. That measure is considered reasonable and proportionate to the potential negative effect. Therefore this EIA concludes that the carrying out of the proposed development would not be likely to have a significant direct negative impact on cultural heritage.

7.41 The indirect impact of the proposed development on the setting and character of places that are valuable for cultural heritage is by far the more important matter for the EIA. The proposed windfarm would stand in the views available

from many sites that are designated as a testament to their importance to the cultural heritage of the area, of the nation and, in the case of Brú na Bóinne, of the world. The importance of the area in this regard is demonstrated by the latter's status as a World Heritage Site, the inclusion of the monastic centre at Kells and the Hill of Tara on the candidate list for that status, and the designation as national monuments and/or protected structures and ACAs at the various other sites set out in section 3 of this report, most importantly Loughcrew and Slieve na Cailligh, but also Headfort Place at Kells, Headfort Demesne, the Hill and Tower at Lloyd, Moynalty, the motte and bailey and churchyard at Kilbeg, Trim Castle, the Hill of Slane and the various individual protected structures and national monuments in the vicinity of the windfarm. While the description by observers of Meath as the Heritage Capital of Ireland refers to a phrase of marketing hyperbole, it is a justifiable reflection of the fact that the area's settlement and prosperity over millennia has left it with a remarkably rich legacy of places and remains of cultural importance from many historical periods. The issue of the proposed development's impact on such cultural heritage is therefore of the utmost importance. If the board considered that the development would give rise to significant negative effects on those sites individually or collectively, then it should refuse the current application, as the principle of the proposed project rests on general policy grounds rather than on an imperative reason for this particular development to be built on this particular site.

7.42 As the potential for an indirect impact on the places of cultural heritage is visual, its assessment will be similar but not identical to the assessment of the impact of the proposed development on the landscape. What the actual impact will be in this regard is readily apparent from the maps, drawings and other details submitted in connection with the application including the photomontages. Given the size of the proposed turbines relative to the other features that form the setting of the relevant places, no measures would significantly mitigate this impact. What falls to be assessed in this report and determined by the board is the nature and significance of that impact. The conclusion set out in section 7.5 above that the proposed windfarm would be appropriate to the rural and agricultural landscape around it has an important bearing on this question.

7.43 The proposed windfarm would be 13km from the designated core area of the World Heritage Site at Brú na Bóinne. Some of the proposed turbines may be visible from Knowth and from the northern side of Newgrange at a distance of c13km. The further information submitted by the applicant states that the turbines would appear as small distant objects from Knowth, and would be

likely to be screened by foreground vegetation in the views from Newgrange. So there may be distant glimpses of the proposed development from particular parts of the designated World Heritage Site, but it would not appear as a prominent feature that would intrude on the experience of those at Brú na Bóinne or which significantly changed the perceived character of the countryside that forms its setting. Unless one regards wind turbines as inherently inimical to modern pastoral landscapes regardless of scale or extent, then the proposed development would not have a significant negative impact on the setting and heritage value of Brú na Bóinne.

7.44 The development as a whole would be visible from the Hill of Tara at a distance of 20-29km. It would be 15.7km from the boundary of the draft Tara – Skyrne landscape conservation area. The panorama available from the hill is an intrinsic element of this site's character which clearly establishes its historic importance. The proposed windfarm would form a clear and noticeable element in the extensive landscape that is visible from the hill and would introduce an element of change into it. However the landscape is a modern rural one where productive agriculture landforms are predominant. The proposed development would be compatible with this landscape and would not alter its character in a substantial way. Therefore it would not have a significant negative impact on the heritage value of Tara. Similarly, the proposed windfarm would be a distinct but distant element in the landscape viewed from Loughcrew and Slieve na Calligh. It would not change the character of the monuments' setting. It would not be likely to interfere with the experience of the equinoctial sunrise at Cairn T, although the mitigation measure proposed by the applicant to still and turn the blades at the relevant time is prudent. The proposed development would not have a significant negative impact on the cultural heritage value of Loughcrew and Slieve na Calligh.

7.45 The proposed windfarm would be much closer to the places of cultural heritage value in and around Kells. The setting of the medieval core of Kells is provided by the town which includes its late 18th and early 19th century centre and more recent accretions around it. The proposed windfarm would not be an intrusive presence in that core and would not impinge on its setting or character. Neither would it unduly intrude into the central part of the Headfort Place ACA at the place itself, although views of the turbines would become available at other places within the ACA. In this circumstance it would be clear that a substantial wind energy development had been built in the vicinity of the Kells, but that would not significantly detract from the historic or architectural qualities of the town. It is not considered, therefore, that the proposed development would have a significant adverse impact on the cultural heritage of Kells.

7.46 The scale and form of the proposed windfarm would be most apparent from the Hill and Tower of Lloyd. The elevation of this place would give it a clear view of the development as a whole, but with a lesser separation distance of 5-17km than from the other elevated places of cultural importance in Meath. It would appear not as a distant element in the landscape but as a prominent part of it. The proposed turbines would not overbear or dominate the hill but they would cause a notable change in the appearance of the landscape viewed from it. So the development would have a significant effect on this place which is the site of prehistoric forts and of an 18th century tower. Whether this effect is a negative one that would render the proposed windfarm contrary to the proper planning and sustainable development of the area depends upon a judgement as to the compatibility of the windfarm with the wider rural landscape. It has been concluded above that the windfarm would be compatible with the rural landscape, and so it is here concluded that the effect of the proposed development on the Hill and Tower of Lloyd would not have a significant negative impact on cultural heritage.

7.47 Notwithstanding a potential for some visibility, the separation distance of the proposed windfarm from the Hill of Slane (9.6km), the Hill of Ward (13.3km) and Trim Castle (20km) and intervening landforms would render the potential impact insignificant in terms of cultural heritage. There would be a lesser separation from the national monuments at Slieve Breagh, 4.6km, but the nearest turbine would be well outside the setting for those monuments. The separation distance from the national monument at Cruicetown Church would be less, as 3.7km,. The impact of the proposed windfarm on its setting would not be severe, but there would be some moderate effect.

7.48 The proposed windfarm would change the landscape setting for the villages in its vicinity, including Carlanstown, Castletown and Lobinstown, and more pertinently for questions of cultural heritage, the estate village of Moynalty that has been designated as an ACA. However this change is considered to be acceptable with regard to the landscape and it would not, therefore, have a significant negative effect on those settlements. The mere fact of visibility from the ACA of turbines in the surrounding countryside does not contravene the objectives of that ACA. Similarly, the fact that turbines in the surrounding countryside would be visible from the ACA at Headfort Demesne or the protected structure at Headfort House would not lead to a significant negative impact on their setting or character if one accepts that such wind turbines are an acceptable part of the rural landscape. If the board does not accept that advice, then permission should be refused.

7.49 There are a series of substantial buildings in the countryside around the windfarm that were developed in tandem with the establishment of modern patterns of pastoral agriculture in the area in the 19th century, although the land ownership patterns associated with them were altered by political action towards the end of that century and the start of the 20th century. Many of these are protected structures, notably Curraghtown House, Dowdstown House, Mountainstown House, Parsontown Lodge, Gravelmount House, Rathkenny Cottage, Rosmeen House, and Fletcherstown Church. Rathkenny House and Kilbeg House would be of similar character. The owners and occupiers of many of those houses objected to the proposed development on the ground that it would compromise their setting and cultural heritage value. Lengthy submissions were made in the regard particularly in relation to Curraghtown House and Kilbeg House. The submission argued that several of the houses, including Curraghtown House, had demesne landscapes that extended beyond the current ownership that are protected by the objective CH OBJ 22 that was cited by the board in its refusal of permission for the Cregg windfarm under PL17.244357, Reg. Ref. No. KA14/0921. Neither argument is convincing. The houses do not have significant demesnes, parklands or designed landscapes associated with them on lands outside their current landholding with which the development would interfere in a manner contrary to CH OBJ 22. The present proposal can therefore be distinguished from that for which the board refused permission at Cregg. Furthermore, as stated numerous times already in this report, wind turbines are not inherently discordant to the agricultural rural landscape that forms the setting of these buildings. Thus the fact of visibility of turbines from those buildings would not give rise to a significant negative impact on their setting or cultural heritage value.

7.50 It is not considered that the proposed turbines or other elements of the development would have a particular visual dominance over any of the above mentioned places of cultural heritage value. However I would draw the board's particular attention to arguments from observers regarding the impact of the proposed turbine 8 on the setting of the motte and bailey and churchyard at Kilbeg, and T 35, T45 and T46 on the churchyard at Killary. Those recorded monuments are prominent medieval remnants with more recent cultural associations. The agricultural landscape around them is clearly of a different era than the monuments, but it is banal and does not detract from them. The size, form and movements of the turbines may have a substantial impact on the character of those sites as experienced by those visiting them. It is considered that the separation distances that are achieved to the relevant turbines from the churchyards, which is over 800m at Kilbeg and more than 500m at Killary,

would mitigate this impact to some extent. However this conclusion is debatable and the board's particular attention is drawn to the description of these sites at pages 20 and 72 of appendix L1 of the EIS respectively. After the development, the churchyard at Killary would be perceived as part of a countryside where a large windfarm stood, as illustrated by the photomontage from viewpoint 03LC05 on the nearby public road at Lobinstown at page 46 of book 2 of the revised photomontages submitted with the further information. Nevertheless the topography and vegetation around the churchyard and the layout of the features within it give this heritage site a relatively enclosed character upon which the proposed windfarm would not have a significant negative effect. This can be distinguished from the relatively open nature of the immediate vicinity of the churchyard and the motte and bailey at Kilbeg upon which turbine number 8 would have an imposing and disruptive influence, notwithstanding the separation distance between them, as illustrated by the photomontage submitted with the further information as viewpoint RFI Kilbeg at pages 18 and 19 of Book 1 of appendix 1 of that submission. It is considered that this would have an adverse effect on the cultural heritage of Kilbeg that would justify the omission of that turbine.

7.51 The status of part of the site and surrounding area as a Gaeltacht is a factor in its cultural heritage. The argument was made that the proposed windfarm would discourage further settlement and house building in the vicinity and so threaten the linguistic character of the Gaeltacht. The argument is not persuasive. As a rural area close to the motorway system and thus with good access to many centres for services and employment are provided for those commuting by car, it is likely that the demand for further housing development would be robust whether or not the proposed development was carried out. It is not likely that the particular preferences of certain persons not to live near wind turbines would reflect their language usage or ability, and so it is not likely that the proposed development would have a significant impact on the cultural heritage of the Gaeltacht.

7.52 Having regard to the foregoing it is concluded that the proposed development would not be likely to have a significant adverse impact on cultural heritage.

Material Assets

Domesticated animals

7.53 Several observers objected to the proposed development on grounds relating to its potential impact on horses which are kept and bred in the vicinity. The observers did not posit a convincing means whereby a significant negative impact in this regard might come about. Wind turbines do not move in a sudden or irregular manner and for this reason they do not give rise to impulsive or startling noises or visual effects. The impact of the proposed development on flight animals such as horses from noise and movement is therefore likely to be less than that which would result from the use of agricultural machinery or vehicles that already occurs in the area. There were references to the reaction of horses to shadow, but the particular shadows cast by the turbines and the blades moved by wind would not be significantly different in their form and scale than that which would already be cast by trees and other vegetation that stands on nearer ground. Neither did the observers provide persuasive empirical evidence of any previous impact on horses from wind turbines. The information contained in the Portuguese master's thesis that was submitted at the hearing described problems with horses at a single stud farm near a wind farm and stated that no definitive conclusion could be drawn as to the relationship between the two. It does not provide evidence that would justify refusing permission or modifying the proposed development. It is concluded, therefore, that the proposed development is not likely to have a significant effect on horses.

7.54 The submissions from several of the observers stressed the economic value of the bloodstock industry to the area and the country, and the importance of maintaining a perception of a quality environment in the eyes of horse owners to protect that economic value. However I would advise the board that it would be more appropriate for a competent authority under the EIA and planning regimes to address the issue on the basis of evidence and rationality with regard to environmental impacts, rather than following an approach based on unsupportable anxieties.

7.55 The applicant has proposed adequate measures to mitigate the potential impact of the development on soil and the spread of soil borne diseases such as blackleg. The references to Japanese reports on an impact on the behaviour of dairy cattle were not sufficient to establish the potential for any effect from the proposed development in this regard. No empirical evidence of a negative impact of wind energy development on poultry was adduced in the

course of the application and hearing. A plausible means for such an impact was not set out having regard to the demonstrable effects of the proposed windfarm with respect to noise, vibration and shadow. It is not likely, therefore, that the proposed development would have negative effects on cattle or chicken or other domesticated animals.

Roads and services

7.56 The area has particularly good access by road, with the adjacent M3 and the associated Kells by-pass bringing national roads of recent construction and high specification close to the location of the proposed turbines. The turbine delivery route would use those roads and then continue along an older national secondary road whose carriageway varies in width but which is typically 6m, although it does pass through the village of Carlanstown and across historic bridges there and at Stephenstown. The route then traverses relatively short distances of county road before access is provided to the various private lands that would accommodate the turbines, although such routes also cross an historic bridge at Ardlonan. As was argued by the applicant, the road access to the current site is more suitable for the delivery of the large loads required to erect wind turbines than the access to the many upland sites where they have been erected before. Nevertheless the size of the turbine delivery loads would have the potential for a negative impact on the network of public roads from the end of the Kells by-pass to the access points to private land. The ground works and concrete production required in the construction would also give rise to traffic by heavy goods vehicles that would have the potential to have negative effects on the road network, as would the extensive laying of cables in public road which is an intrinsic part of the development. These potential effects relate to the physical condition of the roads. Disruption to traffic would be temporary and capable of being managed by the roads and traffic authorities in the same way as other common road works are managed, and so is not considered a significant matter. The operation of the development would not give rise to significant effects on roads or traffic.

7.57 Chapter 13 of the EIS sets out specific routes for the delivery of both materials and turbine components. It provides a prediction of the amount of heavy traffic that would be likely to be generated on those routes based on estimates of the volume of materials and components that would be required during particular phases of the works. The peak for heavy traffic would be 143 trips by HGV per day during month 7. The basis of the prediction was questioned by observers, but it is considered reasonable and the stated results are likely to be accurate. The predicted level of heavy traffic arising from the handling of materials would

not be likely to have a significant negative impact on the road network. The turbine component deliveries would not be particularly heavy loads and so would not compress the structures comprising the road network to an unusual degree, but their length could impinge upon upstanding features. A detailed analysis of the turbine delivery route was provided by the applicant in appendix 32 of the further information, which was further modified by the applicant at the oral hearing by a statement that delivery would occur without any landtake outside the existing public road due to the use of the alternative delivery method which involves carrying the loads at an angle. Adequate information has been submitted to demonstrate that the proposed turbine delivery would not be likely to damage the material assets of which the road network is comprised.

7.58 The proposed development would involve the laying of extensive lengths of cables underneath the public road, as described in section 2.3.6 of the EIS and illustrated on drawing LE1473101_FIG_009. The depth of the trench required for the cabling is shown as 1.25m with a standard width of 1.1m. However this can be reduced to a width of 600mm when required with a trefoil formation for the cables. The use of the latter formation would result in disturbance to only a minor part of the existing public roads where the cables would be laid. Therefore, provided the cabling was carried out in a competent manner following the appropriate guidance from the roads authority, it would not be likely to have a negative impact on the function and structure of the public road. Nor would it be likely to have a significant negative effect or on any watermains or other piped services that have been previously installed in the public road, or on any privately controlled boundary structures or vegetation along the public road such as that at Kilbeg that were cited by Mr O'Reilly.

Houses

7.59 The layout of the proposed development achieves a separation distance of 500m between turbines and houses, as was confirmed at the oral hearing. The appropriate measurement of such a separation distance is from the tower of the turbine to the actual house as opposed to the boundary of its curtilage, partly because the extent of the curtilage on the ground can be the subject of interpretation, but mainly because the amenities of the house itself are more in need of protection than the garden and because the significance of an intrusion into a garden diminishes with its separation from the house. The 500m separation distance is not specified as a requirement of the guidelines, but the citations of that distance at sections 5.6 and 5.12 in relation to noise and shadow flicker do establish reasonable grounds to infer that it is a useful criterion in the assessment of windfarm proposals. The likely impact of the

scheme in terms of noise and shadow flicker have been assessed above. However I would also recommend that the board consider the impact of the proposed development on residential amenity in a more general sense as part of the EIA of the likely effect on the material assets comprised by the houses in the locality. A 170m tall turbine little more than 500m away would be apprehended as a substantial presence by those using those material assets for their intended purpose of living in. The apprehension of its presence would be heightened by the further presence of many other turbines not much further away. I do not consider that such a presence would be so intrusive or overbearing as to be an intolerable or serious injury to the amenities of the affected houses. It is rather a reflection of the fact that residence in a particular property does not exclude the use of other land in its vicinity for appropriate and socially useful purposes, which in the countryside would include turning wind into electricity. However the matter is debatable and the contrary position was expressed by many of the observers on the application. So the board should direct its attention to the question. If it concludes after the EIA that the development would give rise to significant negative effects on houses in this manner, then it would have to weigh that conclusion against the policy objectives in favour of wind energy development and the extensive rural settlement pattern of houses across the state before determining whether those effects would render the current proposal contrary to the proper planning and sustainable development of the area.

7.60 The construction of the proposed windfarm would involve a significant amount of work that might cause disturbance to the amenities of nearby houses. However that work would be carried out over an extensive area and in a relatively short period of time, stated to be 21 months in the EIS. Measures are set out in the various sections of the EIS to control emissions of noise, dust, and other pollutants to the air and to waters during construction and to protect the drainage characteristics of the area. These measures have been assessed in this report above and have been found to be appropriate and likely to be effective. It is not considered, therefore, that the carrying out of the proposed development would be likely to have significant negative effects on the amenities of houses in the area. However I would direct the board's attention to the submission in respect of the house identified as no. 136 in the EIS by Ms Penelope Moorehead. This house stands no more than 12m back from a narrow county road that forms part of the turbine delivery route for the Castletownmoor cluster of 25 turbines as well as delivery route for materials serving the construction compound containing the batching plant. Borrow pit no. 5 would be c160m from the house. This particular house would therefore be exposed to a unusually high degree of activity and potential disturbance

during construction. It would also be 700m from a turbine during the operation of the development. The concerns expressed by Ms Moorehead in writing and at the hearing should therefore be given particular consideration by the board. Nonetheless the potential disturbance that would arise at that house from the carrying out of the proposed development would not be significantly greater than that which would commonly arise at dwellings adjacent to numerous other large scale developments that the board has authorised in rural and urban areas. It would not justify refusing permission or requiring significant alterations to the development proposed in this case. The potential impact would be properly addressed through the implementation of the mitigation measures set out in the EIS, including in the traffic management section of the draft Construction Environment Management Plan. However it would be prudent and reasonable to make a reference in any planning conditions governing that plan to the need for particular consideration to be given to deliveries and facilitation works along that particular stretch of county road.

7.61 The aviation warning lights that would be attached to the turbines would not have significant effects on residential amenity or otherwise as they would be directed away from houses.

7.62 There was extensive discussion at the oral hearing of the likely impact of the development on the price of property, chiefly that of houses but there was also some reference to equestrian facilities. Observers submitted written statements from professional valuers with local knowledge as evidence that the proposed development would reduce the price that people would pay for houses in the area. This evidence was reasonable and compelling. The applicant provided an opinion at the oral hearing from a professional surveyor based on entries on the property price register subsequent to the making of the application and reports of experiences near wind turbines in the UK to demonstrate that the proposed development would not be likely to reduce property prices in the area. This evidence was also reasonable and compelling. The price of any particular property depends upon the location and characteristics of that property, as well as the circumstances of its immediate vicinity. The proposed development would not affect the former. It would affect the latter to some degree. However property prices also depend on variable economic circumstances and upon the sentiments of those participating the market, as well as on estimates by persons participating in the market as to what the sentiments of other persons participating the market might be or might be in the future. So, while informed guesses might be made, the question of the impact of the proposed development of property prices cannot be resolved to any degree of certainty on objective criteria. I would advise the board that

the proposed development would not be likely to undermine the demand for housing in such a rural area with very good road links to employment and service centres to an extent that would lead to widespread underutilisation or vacancy of its housing stock. However I cannot advise the board as to whether the proposed development would be likely to reduce the amount of money that people would offer for those houses to much below what they might have offered in the absence of the development.

7.63 However uncertainty regard the issue of property prices should not constrain the board's consideration of the current application. It does not form part of environmental impact assessment. EIA considers the likely effects on material assets, which in this context means an asset as comprised of matter. It does not consider the effects on financial assets which are not composed of matter. The price of a property is a financial asset but not a material asset, so the likely impact upon it is not an issue for EIA. Depreciation of property values is cited in the planning act. However it is cited in a schedule that refers to the specific topic of compensation to applicants who are refused permission. It does not set down a general objective or duty on the various planning authorities to maintain the price of any particular property or of property in general. It would be fruitless to try to control property prices through decisions on individual planning applications, which should be based on the considerations set out in sections 37G(2) and 143 of the planning act, upon objective assessments of the likely impact of the development on the environment and the amenities of the area (including objective assessments of its impact on the amenities of private properties), and upon matters that relate to the common good and the proper planning and sustainable development of the area. An argument was made that the constitution requires the state to vindicate property rights, which would require the board in this case to stop the proposed development in order to protect the value of the neighbours' property. However a refusal of permission would interfere with the property rights of the owners of the site and could reduce the value of their land. The proper criteria on which to resolve this conflict are the planning and environmental considerations that the board is be obliged to consider anyway. So the argument about constitutional property rights would not support a refusal over a grant of permission, or vice versa, and is not relevant to the case in hand.

7.64 Having regard to the foregoing it is concluded that the proposed development would not be likely to have significant negative effects on material assets.

Cumulative Impacts

7.63 The electricity transmission line proposed under application 02 VA.0017 that is currently before the board, known as the North-South interconnector, would run through the windfarm proposed in this application near turbines 16, 17, 18, 19, 28, 29, 30 and 31. Like the proposed turbines, the line would be an angular structure composed of steel elements. It would therefore amplify the changes to the landscape caused by the proposed development, and thus the changes that would occur to the setting of the various places of cultural heritage in the wider area. It would also increase the perception of the change experienced by those living in the houses near the central part of the proposed windfarm, and the extent to which large structures stood in the vicinity of their houses and impinged upon them. The interconnector would run through an area of forestry, scrub and bog that had a lesser concentration of houses than elsewhere near the windfarm, but there would still be many houses near Drakerath and Clongill where both would form part of the immediate environment. The interconnector would be composed of metal elements that were static and lower than the proposed turbines. Its impact in these regards would be less than that of the turbines but would tend to reinforce it. The works required to erect the interconnector in this locality would also be less than that required for the turbines, as would the traffic which the works would generate. But if there was a coincidence in the carrying out of both works these impacts would also tend to amplify one another. There is no evidence on which to conclude that the interconnector and the windfarm would give rise to electro-magnetic fields either individually or cumulatively that were significant for human health. No other significant cumulative effects on the environment are likely.

7.64 With regard to existing and permitted wind energy developments, it is noted that a total of 62 turbines have been constructed to the northwest of the site within County Cavan (cf section 15.12 of volume 2 and figure 2.11 of volume 2a of the EIS). However due to the nature of the intervening drumlin landscape, they are not readily visible from the area around the current site and would not have a significant cumulative impact with the proposed development. The capacity of that landscape to absorb and screen development would be likely to mitigate any potential cumulative impacts between the proposed development and the permitted wind energy developments to the north-west of the site. There is a cluster of 5 turbines at Dunmore and Leaby Cross to the east of the proposed development in Co. Louth that would have a degree of intervisibility with the proposed development at elevated places between them, including Slieve Breagh and the Hill of Slane. The cluster is also visible from Brú na

Bóinne, with an impact that is much greater than that which is likely to arise from the proposed development. However the respective wind energy developments would not appear in the same view and would not give rise to a sense of clutter or proliferation. It is not considered likely, therefore, that the proposed development would have significant negative cumulative effects on the environment when considered with other constructed or permitted wind energy developments.

7.65 The proposed windfarm at Cregg was refused permission by the board under PL17. 244357 and so would not have cumulative impacts with the current proposal. The proposed Maighne windfarm of 47 turbines which is now before the board under 09. PA0049 would be 34km and more from the proposed Emlagh windfarm. There may be some potential for both windfarms to be seen from elevated locations between them, including the Tara, the Hill of Ward and the top of Trim Castle. However they would both be at a considerable distance from these locations and would not appear in the same view, so it is not likely that there would be significant cumulative impact unless the presence of wind turbines in a rural landscape was considered objectionable in itself. Parts of the two windfarms would stand in the catchment of the Blackwater and Boyne. However it is not considered that the Emlagh windfarm would have a significant impact on water quality or upon habitats and species dependent upon it, so cumulative impacts are not likely either in this regard. The Emlagh windfarm does not pose a significant threat to migratory birds and so the cumulative impact with the Maighne windfarm would simply be the effect of the Maighne windfarm. No other significant cumulative effects on the environment are likely.

Interaction of the foregoing

7.66 The interaction of impacts described under the above headings would be extensive. The impact of the proposed development on the landscape is crucial to assessing its impact on cultural heritage. The impact of the development on human beings operates in many of the same modes as the impact on the material assets that are the houses in the area. The possible impact on air quality during construction is also an impact on human beings and upon those assets. The impact of the development upon soil would have an impact on water, which in turn would have a potential impact on flora and fauna. The interactions of these various effects have been described in the EIS and assessed in the paragraphs above.

Adequacy of the environmental impact statement

7.67 The information in the Environmental Impact Statement submitted with the application provided adequate descriptions of the proposed project including its site, design and size and the measures envisaged in order to avoid, reduce and remedy significant adverse effects. It also provided the data required to identify and assess the main effects that the project is likely to have on the environment, including cumulative effects and with the proposed north-south interconnector. The connection to the national grid at Gorman was described as an intrinsic part of the proposed development in compliance with the law set out in the O'Grianna judgment, and it is assessed as such in this report. The EIS included a non-technical summary whose scope and level of detail was appropriate to its function. The summary and the appendix C of the EIS included an outline of the main alternatives considered by the developer and an outline of the main reasons for their proposed choice taking into account the environmental effects. The EIS therefore contained the information required by law.

7.68 Nonetheless there were defects with the submitted EIS, even though it provided the information necessary to carry out an environmental impact assessment. It was lengthy, repetitive, poorly structured and poorly presented, with an uneven format that did not clearly distinguish between significant information and the minor details that informed that information. The various chapters and appendices were poorly integrated with one another. The consideration of alternatives and reasons for the developers choice was not set out clearly in the main part of the EIS. The time and effort required to read and consider the information that was presented in the EIS was therefore disproportionately and

unnecessarily great. This was a particular issue for third party observers whose opportunity to comment on the initial application was constrained by the statutory time limit of seven weeks, and because it meant that purchasing a physical copy of the EIS was more expensive while downloading and examining a copy required more bandwidth and computing capacity. These complaints were raised by many observers, and they were justified.

7.69 These defects were remedied by the applicant in its submission on 25th March 2015 in response to the board's request under section 37F(1)(c) of the planning act on 25th February 2015. The submission did not contain significant new information on the environment, nor did it need to. The revised locations of turbines 21, 32 and 37 did not require a new application or a new EIS. However the further information did provide a description of the likely environmental effects of the proposed development, based on the information that was already available in the EIS, that was much clearer, much more concise and much more accessible than that which had been provided in the EIS. It was focussed on the particular and relevant concerns that had been expressed by the observers, the planning authority and the prescribed bodies. It therefore properly facilitated the EIA process and public participation in it, which included the subsequent opportunities for written submissions to the board as well as the making of oral submissions at the hearing. The submission of the 25th March 2015 avoided the need for the applicant to make lengthy presentations or to submit significant new information at the hearing. The information and analysis contained in the EIS and the further information was, when considered together, compiled and presented to a high technical and professional standard, as is shown by the fact that this assessment largely concurs with the conclusions that were set out in them. They addressed all the significant effects on the environment that the development would be likely to have. The EIS could not practicably and reasonably address any possible effect that the development might have whether significant or not, as would be implied by some of the criticisms of it made by observers. Considered together, the EIS and further information complied with the statutory requirements that are placed on the developer under section 172 of the planning act. They also adequately served the purposes of the EIA directive.

8.0 ASSESSMENT OF OTHER ISSUES

Tourism

8.1 Several observers argued that the proposed development would have a significant negative economic impact on the area by hindering the exploitation of its potential for tourism. References were made to the marketing efforts to promote the Boyne Valley Drive and Ireland's Ancient East, as well as to the objective in the county development plan to lay a greenway along the disused railway line that runs between proposed Castletownmoor and Isealchriocha clusters. This issue arises in respect of the potential impact of the proposed development on the area's rural landscape and the places of cultural heritage value which are its main attractions for tourists. As this assessment has concluded that the proposed development would not have a negative impact on the landscape and cultural heritage, it is not considered that the proposed development would have a significant negative economic impact on tourism either.

Telecommunications

8.2 Observers expressed concern regarding the potential impact of the development on telecommunications, including mobile telephony, internet services, television broadcasts and a VHF radio service run on a commercial basis by Mr Ronnie McGrain whose transmissions cross the area of the proposed windfarm. Mr McGrain argued that permission should not be granted without the specific advice of ComReg. However, as pointed out by the applicant. ComReg is not a prescribed body under the planning regulations with which statutory submissions can be sought by the board in a similar way to the other prescribed bodies. Furthermore section 5.10 of the guidelines plainly states that interference with broadcast communications can be overcome by the installation of deflectors or repeaters. The board is obliged to have regard to such guidance. The arguments made on this topic by observers would not provide substantial grounds to depart from it. The board is therefore advised that concerns regarding interference with telecommunications would not justify refusing permission or substantially modifying the proposed development. The matter would be properly addressed by a condition specifying the responsibility of the developer to install adequate measures to prevent or remedy such interference. The Irish Aviation Authority is a prescribed body and it was notified of the application, but did not make a submission on it An observer stated concerns as to the impact of the proposed development on hot air ballooning in the area. However there are the county development plan has

particular provisions that support wind energy development at this location, which must be balanced against the desirability of recreational activity suitable to rural areas such as hot air ballooning. It is not considered that the issue would justify refusing permission or substantially amending the proposed development.

Residential development

8.3 It may be inferred from section 5.6 and 5.12 of the guidelines that policy is generally against building turbines within 500m of houses. Observers stated that the proposed windfarm would therefore prevent the building of houses over a significant part of the countryside. However there is no corresponding provision in either the national guidelines on sustainable rural housing or the county development plan's rural housing policy that would prevent a house being built in the vicinity of an existing or authorised wind turbine if the location of that house is otherwise acceptable. The core strategy of the development plan identifies a need for 1,320 houses in the rural area across the entire county during its currency from 2013 to 2019. The carrying out of the proposed development would have no impact on the achievement of this target. It would not inhibit the achievement of the 11,622 housing units needed in the various towns and villages across the county, as the proposed turbines would be setback from all those designated settlements. So the proposed development would not restrict the potential of the area for residential development that is envisaged in the county development plan.

Procedure

8.4 There was criticism from many of the observers about the consultation that the applicant and associated persons engaged in with the local community. It would always be desirable that a prospective developer carry out an active and engaging process of consultation with local communities. However the current application must be considered in a formal process as laid down by law. The applicant has complied with its statutory obligations in this regard. The course of the application so far has provided extensive opportunities for members of the community to be consulted prior to any decision being taken as to whether or not consent would be given for the proposed windfarm. These included two rounds of written submissions and a lengthy oral hearing. The applicant provided the information necessary to allow meaningful consultation to occur in the EIA and planning process as it was obliged to do under article 5(1) of the EIA directive. The applicant also provided reasoned responses to the concerns expressed by members of the community on the topics that were raised. It was

clear that the responses did not satisfy much of the local community. Inferences may be drawn in this regard from the submissions from public representatives and the stated opinion of the county council against this type of development, even though these statements would not have that same weight as policies and objectives duly made under the planning act. The schemes proposed by the applicant to distribute financial benefits to community groups and adjacent householders are proportionate to the scale of the development and its impact on the area. They are also within the scope of the conditions of planning permissions envisaged in section 37G(7)(d) of the planning act. It was apparent at the hearing that the proposed schemes did not hinder the expression of opposition to the development. I would advise the board that, after examining all the written information collected during the course of the application, including the EIS, the NIS, two sets of submissions and the further information from the applicant, as well as conducting an oral hearing over fifteen days, it would be difficult to imagine that there were any relevant planning or environmental matters pertaining to the proposed development that were not fully discussed and argued, despite calls for additional measures to ensure a 'parity of arms' between the applicant and certain of the observers.

8.5 Observers have invited the board to conclude that the current application is invalid on several grounds. The applicant is not the same person as the prospective applicant who entered into pre-application consultation with the board. It is a related but separate company. The drawings and details submitted did not conform to the requirements for planning applications set out in chapter 1 of part 4 of the planning regulations, nor did the site notices. Furthermore a substantial part of the development would involve works to lay cables along public roads. The land on which those public roads run remain in private ownership and the consent of the owner is required for the making of an application for permission for development upon it, following the Frascati judgement and article 22(2)(g) of the regulations. In response the applicant argued that regulations had not been made governing the format of applications under section 37E. If such regulations were to be made, then they would have to be made by the minister under the specific provision in section 37I(1)(c), so the regulations made for applications under section 34 cannot be applied to the current application. The proposed application is not frivolous and would not lead to contradictory permissions being granted in respect of the same land under the public road, so it would not contravene the law set out in the Frascati case. The laying of cables in the public road is subject to licencing regimes by the roads authority and CER so the applicant has a reasonable prospect of acquiring the requisite interest in land to carry out that part of the proposed development.

8.6 Both the observers and the applicant have made reasonable arguments to support their different positions as to whether the application is valid. Those made by the applicant are preferred as they are more in keeping with text of the act and regulations, although as applications under section 34 and section 37E can both result in permissions under Part III of the planning act the observers' position has some merit. The board will have to come to a conclusion on the issue but, as its resolution rests upon an interpretation and application of statute law, no particular weight would attach to its position if it were subsequently challenged. However I can advise the board that no substantial planning or environmental issue arises from the matters that were raised to challenge the application's validity. Adequate public notice was given of the application, and it is highly unlikely that any person who had a pertinent observation to make on it was prevented from doing so by an absence of notice. The drawings and particulars of the proposed works submitted with the application were sufficient to allow a full consideration of its implications for the environment and for the proper planning and sustainable development of the area. They were, for example, rather more detailed then the drawings which are normally submitted with applications for approval for large scale works under the roads act for which EIA and AA must often be carried out. While private legal interests might persist in land that has been taken in charge as public roads and over which public rights of way have been established, this does not affect their role in planning terms as public roads or their function in reality. This role includes accommodating underground services in pipes and cables that may be laid by those with the requisite licence from a utility regulator subject to the control of the roads authority. It does not include development at the behest of or for the private benefit of a person who holds a vestigial title to the land. So I would advise the board that the attack on the validity of the application would not prevent the conclusion of a full and proper environmental impact assessment and planning appraisal of the proposed development or the proper consideration of the observations of any persons. Consideration of the application should therefore proceed.

8.7 The possibility of an apprehension of bias with regard to some board members was raised in certain written submissions. The matter was not allowed to be raised at the hearing. The board will have to satisfy itself on the issue.

8.8 Complaints were made at the hearing regarding the fairness and tone of its conduct. A recording of the entire hearing is available should the board wish to review this question. It should be aware, however, that the number and volume of submissions that people wished to make at the hearing required the

inspector to impose some degree of control and formality on the proceedings in order to be fair to all the observers and to make reasonable provision for all who wished to speak. The inconvenience involved in waiting to appear at a hearing of such length is acknowledged, as is the fact that this difficulty has an unequal impact on different people depending on their personal circumstances and the resources available to them. However observers were given two opportunities to make their arguments in writing to the board, and the applicant was not allowed to submit significant new information at the hearing. By far the greater part of the submission of information and arguments in connection with this planning application occurred in writing. Given the volume of the information and arguments submitted, this is the only fair and practical approach. The hearing allowed a public examination of the information and the ventilation of the arguments about it, and it attracted a certain degree of public interest. However its function is not the equivalent of the hearing of a trial in court. So attending or speaking at the hearing was in no way a prerequisite for making a full contribution to the consideration of the application.

8.9 A planning permission issued on foot of this application would apply to the particular land to which the application relates. This is inherent in its status as a consent for physical development. Planning policy does not set any overarching limit on the amount of wind energy that may be granted across the county or the country, so a grant of permission in this case would not inhibit a grant of permission for wind energy development elsewhere. Nor would it inhibit a grant of permission for any other development to exploit renewable energy sources, nor for any other form of development in general. A grant of planning permission does not imply that the project would be commercially viable. There are constraints on the amount of wind energy development that can be connected to the national grid arising from national or local factors. The choices that have to be made because of these constraints are not made by the planning system. They are made on the basis of European and national law and policy by the grid operator and the energy regulator in accordance with the NREAP made by the government and approved by the European Commission. The board has no role in making these choices or supervising those who do. Its duty is to consider whether a particular proposal for a physical development on a specific site is in accordance with the proper planning and sustainable development of the area after having assessed its likely significant effects on the environment and, if necessary, its implications for Natura 2000 sites. So a grant of permission would not be equivalent to the giving of state aid and it would not be governed by EU law on that matter.

Appropriate period

8.10 Section 40(3) of the act specifies that the appropriate period of a planning permission is five years, but it may be varied by the board under section 41. Section 7.20 of the guidelines refers to possibility of permission of longer duration to ensure that it does not expire before a grid connection is permitted. The applicant in this case has sought permission with a duration of 10 years. The applicant states that the carrying out of the development would take 21 months. The applicant states that it already has a grid connection agreement. When questioned as to why a 10 year period was necessary, no substantial justification was given. Instead a reference was made to a 10 year grant of permission made by the board at Yellow River, Offaly under PA0032. However the board must consider each application on its own merits. The board does not have the power to amend the law or its interpretation, to make policy or to set standards of general applicability. Therefore its previous decisions would not establish a precedent that could be applied in this case without a full and fresh consideration of the matter.

8.11 There is no objective justification for a grant of permission for longer than 5 years in this case. A longer appropriate period would have negative consequences. Five years is more than enough time to complete the development. The local community are entitled to a reasonable degree of certainty as to whether the current proposal will actually proceed. Granting permission for longer than five years would extend the anxiety and rancour arising from the proposal amongst the local community without good cause. The position of local residents whose amenity would be effected during construction should be given particular consideration in this regard, and I would refer the board to the submission from Ms Penelope Moorehead to illustrate that position. The five year period set down in the legislation is not arbitrary or unreasonable. It reflects a balance between the need for a developer to have adequate time to complete his works, and the need for some certainty so that an area's proper planning can be considered without the accumulation of permissions for obsolete and contradictory developments. The latter consideration is particularly relevant in this case. The conclusions of the planning assessment above are largely determined by the targets for 2020 set out in the NREAP and the 2013 county development plan, as well as the provisions of the guidelines. The advice of the guidelines in relation to noise and shadow flicker informed the EIA inasmuch as it related to the likely effects of the development on humans. All of these policies are due to be reviewed

within 5 years, with the review of the guidelines currently in progress. It is entirely possible, therefore, that the policy context that would govern a proposal for the same development in five years' time would have changed significantly in a way that would require a different conclusion as to whether it was in keeping with the proper planning and sustainable development of the area. If the proposed development has not been carried out by that time, then its status should be judged anew in accordance with the policy that actually applies then. A capricious extension of the appropriate period in this case would prejudice the proper planning of the area and would frustrate the effective exercise of policy making functions of those who are charged with them. So it is not recommended that permission granted for a period of more than five years.

Enforceability of conditions

8.12 Concerns were expressed by observers regarding the enforceability of conditions that might be attached to a permission, particularly those regarding the limits on noise and shadow flicker that would be experienced at houses in the vicinity. The limits proposed by the applicant and those set out in the guidelines relate to measurable phenomena. Ascertaining whether they have been met would be a relatively straightforward process. A breach could be remedied by a simple order to cease the operation of the offending turbines. The applicant stated that an identifiable operator would be responsible for the wind farm and thus for compliance with those conditions, even if it were not the applicant company itself. The said operator would be the occupier of the site and would thus be liable to enforcement action by the planning authority or other persons in the normal manner. It is not considered, therefore, that the proposed development raised particular or unusual problems in relation to the enforceability of conditions that would impinge on the consideration of the application.

9.0 CONCLUSIONS AND RECOMMENDATION

9.1 Summary of conclusions -

- Provided it was competently carried out, the proposed development would not be likely to have any significant effects on any Natura 2000 site either individually or in combination with any other plan or project.

- The proposed development would be in accordance with European and national policy to promote renewable energy. The proposed development would be in keeping with national and local planning policy to promote wind energy development. It would comply with the provisions of the county development plan regarding the location of wind energy development, which themselves were made in accordance with the provisions of the national guidelines. While this compliance with policy supports the proposed development in principle, it does not establish an over-riding imperative for this particular windfarm on this particular site that would justify a grant of permission if significant adverse environmental or planning impacts were deemed likely to arise.

- The proposed windfarm would be in keeping with the character of the agricultural rural area in which it would stand and would not have a significant adverse impact on its landscape. The proposed windfarm would not, therefore, have an adverse impact on the setting of the various places and sites in the wider area that are important for cultural heritage including the protected structures, the national monuments, the World Heritage Site at Brú Na Bóinne and those on the tentative list for that status at Tara and Kells, other than a particular local impact of turbine 8 on the churchyard at Kilbeg that would be remedied by the omission of that turbine. Nor would the proposed development be likely to inhibit the exploitation of the area's potential for tourism.

- The proposed development would not be likely to have significant adverse effects on human health. Nor would it give rise to noise or shadow flicker that would breach the limits set down in the guidelines.

- The proposed development would not be likely to have a significant negative impact on flora or fauna, although certain of the turbines would have a potential for a negative effect on bats that should be mitigated by further monitoring and controls on the operation those turbines at certain times.

- The proposed development would not be likely to have significant effects on soil, water or air. It would be likely to have a positive effect on climate. That effect is difficult to quantify as the project's impact on greenhouse gas emissions would depend on the quantity and type of power generation that it would displace. The scale of the impact on climate from this project in itself, however, is unlikely to be significant.

- The proposed development would not be likely to have significant negative effects on material assets, including the cattle, horses and poultry that are reared in the area. It would not be likely to have significant negative effects on the built fabric of the area, including its roads and houses, or to prevent its further sustainable development.

- Adequate information was submitted with the application to describe the proposed development and to allow an environmental impact assessment and planning appraisal of it to be carried out with proper public consultation.

- The possible impact of the development on telecommunications and broadcasting can be mitigated in accordance with the advice on the matter set out in the guidelines.

- As the development can be carried out within 21 months and approval to connect it to the national grid has already been given, there is no objective reason to extend the appropriate period of any permission beyond the normal statutory period of 5 years. To do so would give rise to unnecessary uncertainty regarding the development of the area and would frustrate the review of the applicable public policies in the normal manner by those who have the democratic mandate to do so.

9.2 Having regard to the foregoing, the board is advised that the proposed development would be in keeping with the proper planning and sustainable development of the area.

Recommendation

9.3 I recommend that permission be granted for the reasons and considerations and subject to the conditions set out below –

REASONS AND CONSIDERATIONS

Having regard to –

(a) the European and national policies to increase the proportion of energy that is generated from renewable sources including wind set out in the Renewable Energy Directive 2009/28/EC and the National Renewable Energy Action Plan which sets a target that 40% of the electricity generated in Ireland would be from renewable sources by 2020,

(b) the Guidelines for Planning Authorities on Wind Energy Development issued by the Department of the Environment, Heritage and Local Government in June, 2006 and the limits set therein for noise and shadow flicker,

(c) the provisions of the Meath County Development Plan 2013-2019, including policy EC POL 20 and the landscape character assessment in appendix 7 which identifies the area around the site as having a medium capacity to absorb wind energy development, which is the highest capacity that is identified in the county,

(d) the character of the landscape and the cultural heritage of the area,

(e) the distance to dwellings and other sensitive receptors from the proposed development,

(f) the separation of the site of the proposed development from sites designated as part of the Natura 2000 network and the nature of the connections between them

(g) the environmental impact statement and further information submitted by the applicant, and

(h) the submissions made in the course of the planning application,

It is considered that the proposed development would be in keeping with national energy policy and with national and local planning policy on wind energy development and the protection of landscapes.

After carrying out a screening exercise in relation to the potential for impacts on nearby Natura 2000 sites and, having regard to the nature and scale of the proposed development, the nature of the receiving environment, the Natura Impact Statement

submitted with the application and the submissions on file in relation to ecological matters, it is not considered that the proposed development would be likely to have a significant effect individually or in combination with other plans or projects on any European site.

After carrying out an environmental impact assessment of the proposed development, it is considered that it would be compatible with the character of the productive, agricultural and rural area in which it would stand and so would not have a significant adverse impact on the landscape. Neither would it be likely to have significant effects on the health of human beings. Subject to compliance with the conditions set out below it would not give rise to a nuisance arising from noise or shadow flicker, nor would it be likely to have significant negative effects on flora and fauna, soil, water or air. It would be likely to have a positive effect in relation to climate, but the scale of that effect is not readily quantifiable and would not be significant in itself. The proposed development would not have a direct impact on archaeological remains or protected structures. Given its compatibility with the established rural landscape, it would not have significant negative indirect effects on places of value to cultural heritage either. The proposed development would not be likely to have significant adverse impacts on material assets including roads and houses, or upon the various form of livestock kept in the area.

The proposed development would, therefore, be in keeping with the proper planning and sustainable development of the area.

CONDITIONS

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as amended by the further information received by the Board on the 25th day of March, 2015 as clarified at the oral hearing at Kells between 16th June and 21st July 2015, except as may otherwise be required in order to comply with the following conditions. In particular the mitigation measures identified in the environmental impact statement and the further information shall be implemented in full by the developer. Where the conditions below require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

   Reason: In the interest of clarity.

2. Turbine no. 8 shall be omitted from the proposed development.

   Reason: The particular impact of that turbine on the churchyard and the motte and bailey at Kilbeg would have a significant negative impact on the character and setting of a site of value to cultural heritage due to the specific circumstances of that site in relation to the that proposed turbine.

3. The appropriate period of this permission during which the authorised development may be carried out shall be five years from the date of this order.

   Reason: Having regard to the nature and extent of the proposed development and the time required to carry it out, as described in the EIS, it is considered inappropriate to specify a period of validity of this permission in excess of five years.

4. The authorised windfarm shall operate for no more than 30 years from the date on which electricity is first exported from it or from date of the expiry of the appropriate period, whichever is the sooner.

Reason: To clarify the nature of authorised development in accordance with the details submitted with the application.

5. Prior the commencement of the operation of the authorized windfarm, the developer shall inform the planning authority of the name and address of the person who shall occupy the site as its operator and who shall be responsible for the subsequent decommissioning of the windfarm and compliance with the various other conditions set out hereinunder. The operator shall inform the planning authority if there is any change in these details and provide the name and address of any new operator at least 3 months before the latter person assumes responsibility for the windfarm. There shall only be a single operator of the entire authorised windfarm at any one time.

Reason: To facilitate the enforcement of the various conditions of this permission that pertain to the operation and decommissioning of the authorised development.

6. Prior to the commencement of development the developer shall submit for the written agreement of the planning authority a plan for the decommissioning of the authorised windfarm and the reinstatement of the site which shall provide for the removal of the turbines, towers, meteorological monitoring masts and all plant and equipment and the reinstatement of the turbine bases and hard standing areas, as well as a time frame for the completion of such works which shall not be greater than 12 months from the cessation of the operation of the windfarm.

Prior to the commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company or such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site in accordance with the details agreed under this condition. The developer shall also enter into an agreement empowering the planning authority to apply such security or part thereof to secure the necessary reinstatement of the site at the end of the period during which the operation windfarm is authorised or before that time if the operation of the windfarm has ceased for at least 12 months and the planning authority

does not consider it reasonably likely to resume. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

The operator of the windfarm may, at any time more than 12 months before the cessation of the operation of the windfarm, submit a revised decommissioning plan for the authorised windfarm. However it shall not become the operative plan for the purposes of this condition until the planning authority has certified that it is acceptable and that adequate financial security has been lodged to ensure its implementation.

Reason: To ensure the satisfactory reinstatement of the site and to prevent an accumulation of obsolete functional structures in the interests of orderly development.

7. The mitigation measures identified in the environmental impact statement and the Natura Impact Statement and other particulars submitted with the planning application and as further information and at the oral hearing, shall be implemented in full by the developer and by the operator of the authorised windfarm, except as may otherwise be required in order to comply with the other conditions of this permission. The developer shall appoint a person with appropriate ecological and construction expertise as Environmental Manager to ensure that the mitigation measures identified in the above documents are implemented in full during construction.

   The required mitigation measures include –

   The stilling and alignment of the blades with the equinoctial sunrise to conserve its observation from Cairn T at Loughcrew

   The stilling of the blades at turbines 37 and 43 during the hours of darkness in June and July, as well as the monitoring and reporting to the planning authority of bat mortality in the vicinity turbines 14, 19 and 20 and the consequent restriction of the hours of their operation as directed by the planning authority

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

8. Noise levels emanating from the authorised development following commissioning, when measured externally at noise-sensitive locations, shall not exceed the greater of 45dB(A)L90, 10 min or 5dB(A) above background levels between the hours of 0700 and 2300, or 43dB(A)L90, 10 min between 2300 and 0700. All noise measurements shall be made in accordance with I.S.O. Recommendations R1996/1 and 2 “Acoustics – Description and measurement of Environmental Noise”.

   The noise mitigation measures described in the environmental impact statement shall be implemented in full. Prior to the commencement of the export of electricity from the proposed windfarm, the developer shall submit certification from a suitably qualified person who was not previously engaged in the construction of the windfarm that the equipment necessary to implement those measures has been properly installed and is functional

   Prior to the commencement of development, the developer shall agree a noise compliance monitoring programme for the operational wind farm with the planning authority. The operator shall maintain and make available for inspection by members of the public a register in relation of complaints made about noise. The operator shall submit to the planning authority a yearly compliance report on noise emissions from the development. This report shall include, but not be limited to, noise surveys undertaken at noise receptors, methodology for noise monitoring, and a list of complaints and remedial measures taken. The report shall be prepared by a suitably qualified noise specialist.

   Reason: In the interest of residential amenity.

9. Shadow flicker arising from the proposed development shall not exceed 30 hours per year or 30 minutes per day at existing or permitted dwellings or other sensitive receptors.

   The measures to mitigate the impact of shadow flicker described in the environmental impact statement shall be implemented to ensure that any turbines which might cause an exceedance of this limit are stilled. Prior to the commencement of the export of electricity from the proposed windfarm, the developer shall submit certification from a suitably qualified person who was not previously engaged in the construction of the windfarm that the equipment necessary to implement those measures has been properly installed and is functional

The operator shall submit to the planning authority a yearly compliance report on shadow flicker arising from the development. This report shall include the results of monitoring, a list of complaints and remedial measures taken. The report shall be prepared by a suitably qualified person.

Reason: In the interest of residential amenity.

10. Prior to the commencement of development, the developer shall submit a comprehensive Construction-Stage Drainage Report and Construction Management Plan for the written agreement of the planning authority, which shall include:

    (a) Details of the proposed water monitoring protocol and drainage inspection regime.
    (b) Full details of measures for the control of drainage during and after construction (including tree-felling prior to construction), including the use of settlement ponds, swales and silt traps, and measures for the control of run-off from temporary spoil storage areas.
    (c) Details of the nature of all materials used in constructing access tracks to the turbines.
    (d) Full details of storage proposals for hazardous materials, cement leachate, hydrocarbons and other materials to be used during construction.
    (e) Details of all aspects of the management of excess spoil, such that slope stability measures and prevention of water pollution are fully implemented. Soil, rock, peat and sand/gravel excavated during construction shall not be left stockpiled on site following completion of works.

    Reason: In the interest of environmental protection and orderly development.

11. The construction of the development shall not give rise to emissions of dust that exceed 350mg/m^2/day, or emissions of noise that result in recorded levels at the facades of houses above 65dB(A)LAeq 1hour. The hours of work shall normally be restricted to between 0700 and 1900 Monday to Saturday and not at all on Sundays or public holidays, unless the prior written agreement of the planning authority has been obtained. Prior to the commencement of construction activities the developer shall agree, in writing, with the planning authority a plan to control such emissions for the duration of the construction

works. The plan shall include details of the method and locations dust monitoring, measures to be implemented to reduce emissions and actions to be taken in the event of complaints.

Reason: In the interest of environmental protection and orderly development.

12. Prior to the commencement of development, the following details shall be submitted and agreed in writing with the planning authority –

    (i) a Transport Management Plan, including details of the road network/haulage routes and the vehicle types to be used to transport materials and parts on and off site,
    (ii) a condition survey of the roads and bridges along the haul routes to be carried out at the developer's expense by a qualified engineer both before and after construction of the wind farm development. This survey shall include a schedule of required works to enable the haul routes and, in particular, regional and local roads in to cater for construction-related traffic. The extent and scope of the survey and the schedule of works shall be agreed with the planning authority prior to commencement of development.
    (iii) detailed arrangements whereby the rectification of any construction damage which arises shall be completed to the satisfaction of the planning authority.
    (iv) detailed arrangements for temporary traffic arrangements/controls on roads.
    (v) a programme indicating the timescale within which it is intended to use each public route to facilitate construction of the development.

    The Transport Management Plan shall include drawings at a scale of no less than 1:500 of all works, including the removal of vegetation, along the county road that will provide access to the site in the vicinity of proposed turbine 33 from its junction with the N52 that are required to facilitate the construction of the proposed development. The developer shall also provide funds to allow the planning authority to carry out condition surveys of the residential properties along that county road before and after the carrying out of the development, if so requested by the occupants or owners of those houses, and to remedy any defects that may arise as a probable consequence of the construction of the authorised development.

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

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

13. During construction stage the developer shall employ a suitably qualified and experienced geotechnical engineer to monitor the stability of all existing slopes adjacent to the works and all temporary slopes created by the works. Should any land slippage occur during the course of the works the developer shall immediately inform the planning authority and provide details on how further slippage shall be prevented and necessary measures to remediate the site.

    Reason: In the interest of environmental protection and orderly development.

14. With regard to the Water Quality Monitoring Plan as detailed in the outline Construction Management Environment Plan, the developer shall submit to the planning authority, on a monthly basis, the results of the monitoring from the previous month. The developer shall include in the CEMP a list of Meath County Council personnel to contact in the event of an environmental emergency or incident. Any event or incident that may cause threat to groundwater or receiving waters shall be notified immediately to the planning authority and all works cease until authorised to continue by the planning authority. Mitigation measures as outlined in the EIS for the protection of ground water shall be adhered to and implemented in full. The works shall be supervised and monitored as detailed in the EIS.

    Reason: In the interest of environmental protection and orderly development.

15. The developer shall prepare prior to commencement of the works and for the approval of the planning authority a detailed Waste Management Plan for the construction and commissioning stage of the proposed project. The developer shall manage all waste stream during the construction and commissioning stage of the project in accordance with the DOECLG " Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (2006)and shall take cognisance of the current Regional Waste Management Plan in particular to the upper tiers of the Waste Hierarchy.

The developer shall prepare, for the planning authority's approval, a Coal Tar Waste Management Plan. This plan shall include but not be limited to locations of coal tar (verified by intrusive works and laboratory results), extent of coal tar, methodology for removal of coal tar and segregation from other bituminous materials, storage of coal tar, if necessary, and details of compliance with legislation relating to same, details of end destination of coal tar and any other items relevant to removal, temporary storage and transportation of coal tar. The developer shall retain and make available for inspection all records relating to the movement, recovery or disposal of waste from the site.

The developer shall provide to the planning authority , on completion of the works, a comprehensive report detailing the management of the all waste streams generated during the construction and commissioning stages of the project. This shall include but not be limited to type of waste streams, amount of each waste stream generated, destination of waste streams (including final destination if applicable), percentage of waste re-used, recycled, recovered and disposed, and prevention and minimisation initiatives undertaken.

Reason: In the interest of environmental protection and orderly development.

16. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall:

    (a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development,

    (b) employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and prepare a report on the results of such monitoring to be submitted to the planning authority and to the Department of Arts, Heritage and the Gaeltacht,

    (c) provide arrangements, acceptable to the planning authority, for the recording and removal of any archaeological material which the authority considers appropriate to remove. In particular, archaeological excavation shall be carried out at Areas of Archaeological Potential identified in the environmental impact statement submitted,

A comprehensive report on the completed archaeological excavation shall be prepared and submitted to the planning authority and to the National Monuments Service within a period of six months or within such extended period as may be agreed with the planning authority.

Reason: In order to conserve the archaeological heritage of the site, it is considered reasonable that the developer should facilitate the preservation and protection or the preservation by record of any archaeological features or materials which may exist within it.

17. Cables within the site shall be laid underground. The wind turbines shall be geared to ensure that the blades rotate in the same direction.

Reason: In the interest of visual amenity.

18. Prior to commencement of development, details of aeronautical requirements shall be submitted to, and agreed in writing with, the planning authority. Subsequently, the developer shall inform the planning authority and the Irish Aviation Authority of the coordinates of the 'as constructed' turbines and the highest point of the turbines.

Reason: In the interest of air traffic safety.

19. In the event that the proposed development causes interference with telecommunications signals in the area effective measures shall be implemented to minimise such interference. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the planning authority prior to commissioning of the turbines, and following consultation with the relevant authorities.

Reason: In the interest of orderly planning and residential amenity.

20. Any significant works to bridges over rivers or streams shall be carried out in accordance with the National Roads Authority guidelines for the treatment of otters.

Reason: To comply with requirements for the protection of breeding otters.

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

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

22. Removal of hedgerows shall be carried out only between September and February inclusive. Replacement hedgerows shall be of native species.

Reason: In the interest of avian ecology and visual amenity.

23. The developer shall institute a programme and provide it with €3,500,000 to support voluntary projects, educational scholarships and small scale enterprises which are deemed to benefit the local community over the lifetime of the authorised windfarm. The developer shall also provide funds to allow a programme of grants of €5,000 to be made before the operation of the windfarm commences towards expenditure by the owners who occupy houses within one kilometre of any of the authorised turbines in respect of electricity bills or home improvement works. Prior to the commencement of development, the developer shall submit details of the operation of these programmes in accordance with section 5.7.1 of the non-technical summary of the EIS for the agreement of the planning authority. In default of agreement, the matter may be referred to an Bord Pleanála who may direct the developer to pay the sums required to operate the programmes directly to the planning authority, who would then take responsibility for their implementation.

Reason: In order to ensure that the a substantial gain is provided for the local community in accordance with the proposals made in the application and section 37G(7)(d) of the Planning and Development Acts 2000-2015.

24. Prior to the commencement of development, the developer shall lodge with the planning authority, a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads which may be damaged by the transport of materials to the site, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and amount of the security shall be as agreed between the planning authority and the developer

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

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

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

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Stephen J. O'Sullivan,
12th November, 2015