Cork County Council

Planning and Development Act 2000 (as amended)

Planning and Development (Strategic Infrastructure) Act 2006

Planning Authority report to An Bord Pleanála in accordance with Section 182A of the Planning and Development Acts (as amended).

An Bord Pleanála Ref. No:	ABP Ref. 312606-22
Applicant:	Ballinagree Wind DAC
Agents:	Fehily Timoney
Site Location:	Within the townlands of Annagannihy, Aughinida, Ballynagree East, Ballynagree West, Bawnmore, Caherbaroul, Carrigagulla, Carrigduff, Clonavrick, Derryroe, Drishane More, Dromagh, Drominahilla, Dromskehy, Finnanfield, Inchamay South, Kilberrihert, Knocknagappul, Rahalisk and Tullig, Co. Cork.
Description of Development:	• Construction of 20 no. wind turbines with a blade tip height range from 179m to 185m, a hub height range from 102.5 to 110.5m and a rotor diameter range from 149m to 155m; • Construction of turbine foundations and crane pad hardstanding areas including associated drainage infrastructure; • Construction of new permanent site tracks and associated drainage infrastructure - 14.4 km of new internal access tracks will be required; • Upgrading of existing tracks and associated drainage infrastructure -11.1 km of internal access tracks will be required to be upgraded as part of the project; • Upgrade of 2 no. existing forestry and agricultural access junctions for construction and operational access from 1) the Local Roads L2750-0/L1123-62 in the townlands of Finnanfield and Ballynagree East and 2) from the Local Road L7461-0 in the townland of Ballynagree West, Co. Cork; • Upgrade of 2no. existing forestry access junctions for temporary construction access from the Local Road L7461-17 in the townland of Knocknagappul, Co. Cork; • Use of 1 no. existing forestry and agricultural access junction for operational access only from the Local Road L-7461-44 in the townland of Knocknagappul, Co. Cork; • Installation of new permanent watercourse and drain crossings and the reuse and upgrade of existing internal watercourse and drain crossings to include 1) the replacement of an existing stone bridge structure with a new clear span concrete bridge structure along theLocal Road L-7461-0 in the townland of Ballynagree West and 2) a new clear span concrete bridge structure along a proposed new track in the townland of Carrigagulla, Co. Cork; • 3 no. on site borrow pits and associated ancillary drainage within the townlands of Carrigagulla and Knocknagappul, Co. Cork;

	• 2 no. Temporary construction site compounds and associated ancillary infrastructure including parking within the townlands of Ballynagree West and Carrigagulla, Co. Cork; • Use of proposed wind farm access tracks and existing forestry and agricultural tracks as permanent recreational amenity trails for community use including the installation of associated signage and information boards and; the partial reinstatement and re-purposing of the proposed temporary construction compound as a permanent trail head car park and picnic area including associated landscaping within the townland of Ballynagree West. Overall, 15.05 km of tracks will be made available as recreational amenity trails for community use; • Construction of 1 no. permanent on-site 110kV electrical substation including control buildings, electrical plant and equipment, welfare facilities, carparking, water and wastewater holding tanks, security fencing, lightening protection and telecommunications masts, security cameras, external lighting and, all associated infrastructure within the townland of Ballynagree East, Co. Cork; • Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works; • Installation of permanent high voltage 110kV underground electrical and communication cabling between the proposed on-site substation within the townland of Ballynagree East to the boundary of the existing Clashavoon substation within the townland of Aughinida, Co. Cork. The cabling will be laid primarily within the public road in the townlands of Knocknagappul, Ballynagree East, Ballynagree West, Bawnmore, Clonavrick, Derryroe, Rahalisk, Kilberrihert, Caherbaroul and Aughinida, Co. Cork. • Associated works including the installation of 15 no. pre-cast joint bays and communication chambers; and horizontal directional drilling under 4 no. watercourse crossings in the townlands of 1) Knocknagappul, 2) Knocknagappul and Rahalisk, 3) Rahalisk and Bawnmore and 4) Bawnmore and Clonavrick; • Tree felling to accommodate the construction and operation of the proposed development. Area of replant lands has not been specified; • Erection of 2no. meteorological masts with a height of 100m above existing ground levels for the measuring of metrological conditions within the townlands of Ballynagree East and Carrigagulla, Co. Cork. A lightning rod will extend above the masts by 4 meters; • Temporary accommodation works at 6 no. locations adjacent to the public roads to facilitate delivery of turbine components to site within the townlands of Dromagh, Dromskehy, Liscahane, Tullig, Drominahilla, Finnanfield and Ballynagree East, Co. Cork. These works will primarily relate to trimming of trees and hedgerows, temporary lowering of boundary walls, temporary removal of boundary walls, temporary ground reprofiling and installation of temporary stone hard standing; • Installation of a temporary off-site staging area for turbine components within the curtilage of Drishane Castle which is a Recorded Protected Structure (00319) and National Monument (296), within the townland of Drishane More. The works will include removal of a masonry wall and installation of temporary stone hard standing area and associated access track and entrances to and from the public road R583; • All related site works and ancillary development including landscaping and drainage.

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(i) Summary

This application is being made directly to An Bord Pleanála as 'Strategic Infrastructure Development' (SID) under the provisions of Section 37E of the Planning and Development Act 2000 as amended.

This planning report sets out the relevant planning issues in relation to the proposed Wind Farm Development (and all associated works). For ease of reference to be referred to as the Ballinagree windfarm.

The proposed windfarm is located in the townlands of Annagannihy, Aughinida, Ballynagree East, Ballynagree West, Bawnmore, Caherbaroul, Carrigagulla, Carrigduff, Clonavrick, Derryroe, Drishane More, Dromagh, Drominahilla, Dromskehy, Finnanfield, Inchamay South, Kilberrihert, Knocknagappul, Rahalisk and Tullig.

This project involves the construction of 20 turbines with 110kv electrical substation and all related site works and ancillary development.

An Environmental Impact Assessment Report (EIAR) has been prepared in respect of the overall project. It is considered that An Bord Pleanála is the "competent authority" for the purposes of assessing the adequacy of the EIAR.

An Appropriate Assessment Screening (AA) and a Natura Impact Statement (NIS) have also been prepared in respect of the proposed development.

The key points arising from the assessment by Cork County Council of the proposal are:

- The proposed development complies with the objectives of the County Development Plan 2014 and specifically policy objectives ED 1-1 (energy) and ED 6-1 (electricity).
- The proposal is consistent with the aims/ objectives of the draft County Development Plan 2022.
- The proposed development is fully justified, having regard to European, National, Regional and Local energy and infrastructural policy.
- The proposed layout is likely to need material amendments/ revisions on the basis of internal reports/assessments. In particular, Ecology considers that four turbines be omitted (T2, T3, T13 and T 17); and County Archaeologist recommends the omission of two turbines (T9 and T8).

It is the considered view of Cork County Council that based on the information submitted and the assessment of same that further information should be sought by the Bord in the first instance to enable a full (or further) assessment of the application to determine the acceptability or otherwise of the proposed development. The key issues which the Planning Authority deem relevant are set out in Appendix B, which the Board may wish to investigate further and/or follow up with a further information request.

1. Introduction

On 28th January an application was made to An Bord Pleanala of a 'Strategic Infrastructure Development' (SID) under the provisions of Section 37E of the Planning and Development Act 2000 (as amended) for the construction of 20 turbine windfarm with 110kv electrical substation and all related site works and ancillary development, to be referred to as the Ballinagree windfarm. An Environmental Impact Assessment Report (EIAR), an Appropriate Assessment Screening (AA) and a Natura Impact Statement (NIS) has been prepared.

An Bord Pleanála informed Cork County Council in a letter dated 1st February 2022, of their receipt of the strategic infrastructure development application and the requirement of Cork County Council to submit a Chief Executive's report setting out the views of the Planning Authority on the effects of the proposed development on the environment and the proper and sustainable development of the area. In addition, An Bord Pleanála requested that the Chief Executive address in his report, all the issues identified in their "guidelines for Planning Authorities" in respect of Strategic Infrastructure Developments.

In accordance with the requirements of Section 37E (4) the of the 2000 Act, the purpose of this report is to set out the views of the Planning Authority on the effects of the proposed development on the environment and on the proper planning and sustainable development of the area. An Bord Pleanála have requested that the report addresses, where relevant all the issues identified in Section 7 of the Guidelines for Planning Authorities in respect of Section 37A of the 2000 Act. Accordingly, all the relevant issues to the proposed development have been identified and are assessed below in the report.

Section 37E (5) of the 2000 Act requires that before this report is submitted to the Bord, the Chief Executive shall submit it to the elected members, in order to seek their views on the proposed development. The members may, by resolution, decide to attach recommendations to the report (Section 37E (6) of the 2000 Act refers).

Section 37E (6) of the 2000 Act also provides that the views expressed by the members on the proposed development during the Council meeting, can also be attached to this report i.e. the 'meetings administrator's record'.

There are three appendices to this report:

- Appendix A: Suggested Conditions
- Appendix B: Suggested Further Information
- Appendix C: Copies of Internal Technical Reports

2. Description of Development

The proposal involves the construction of 20 turbines with 110kv electrical substation and all related site works and ancillary development. The project includes for the:

- Construction of 20 no. wind turbines with a blade tip height range from 179m to 185m, a hub height range from 102.5 to 110.5m and a rotor diameter range from 149m to 155m.
- Construction of turbine foundations and crane pad hardstanding areas including associated drainage infrastructure.
- Construction of new permanent site tracks and associated drainage infrastructure.
- Upgrading of existing tracks and associated drainage infrastructure.
- Upgrade of 2 no. existing forestry and agricultural access junctions for construction and operational access from 1) the Local Roads L2750-0/L1123-62 in the townlands of Finnanfield and Ballynagree East and 2) from the Local Road L7461-0 in the townland of Ballynagree West, Co. Cork;
- Upgrade of 2no. existing forestry access junctions for temporary construction access from the Local Road L7461-17 in the townland of Knocknagappul, Co. Cork.
- Use of 1 no. existing forestry and agricultural access junction for operational access only from the Local Road L-7461-44 in the townland of Knocknagappul, Co. Cork.
- Installation of new permanent watercourse and drain crossings and the reuse and upgrade of existing internal watercourse and drain crossings to include 1) the replacement of an existing stone bridge structure with a new clear span concrete bridge structure along the Local Road L-7461-0 in the townland of Ballynagree West and 2) a new clear span concrete bridge structure along a proposed new track in the townland of Carrigagulla, Co. Cork;
- 3 no. on site borrow pits and associated ancillary drainage within the townlands of Carrigagulla and Knocknagappul, Co. Cork.
- 2 no. Temporary construction site compounds and associated ancillary infrastructure including parking within the townlands of Ballynagree West and Carrigagulla, Co. Cork.

- Use of proposed wind farm access tracks and existing forestry and agricultural tracks as permanent recreational amenity trails for community use including the installation of associated signage and information boards and; the partial reinstatement and re-purposing of the proposed temporary construction compound as a permanent trail head car park and picnic area including associated landscaping within the townland of Ballynagree West;
- Construction of 1 no. permanent on-site 110kV electrical substation including control buildings, electrical plant and equipment, welfare facilities, carparking, water and wastewater holding tanks, security fencing, lightening protection and telecommunications masts, security cameras, external lighting and, all associated infrastructure within the townland of Ballynagree East, Co. Cork;
- Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works.
- Installation of permanent high voltage 110kV underground electrical and communication cabling between the proposed on-site substation within the townland of Ballynagree East to the boundary of the existing Clashavoon substation within the townland of Aughinida, Co. Cork. The cabling will be laid primarily within the public road in the townlands of Knocknagappul, Ballynagree East, Ballynagree West, Bawnmore, Clonavrick, Derryroe, Rahalisk, Kilberrihert, Caherbaroul and Aughinida, Co. Cork. Associated works including the installation of 15 no. pre-cast joint bays and communication chambers; and horizontal directional drilling under 4 no. watercourse crossings in the townlands of 1) Knocknagappul, 2) Knocknagappul and Rahalisk, 3) Rahalisk and Bawnmore and 4) Bawnmore and Clonavrick;
- Tree felling to accommodate the construction and operation of the proposed development.
- Erection of 2no. meteorological masts with a height of 100m above existing ground levels for the measuring of metrological conditions within the townlands of Ballynagree East and Carrigagulla, Co. Cork. A lightning rod will extend above the masts by 4 meters.
- Temporary accommodation works at 6 no. locations adjacent to the public roads to facilitate delivery of turbine components to site within the townlands of Dromagh, Dromskehy, Liscahane, Tullig, Drominahilla, Finnanfield and Ballynagree East, Co. Cork. These works will primarily relate to trimming of trees and hedgerows, temporary lowering of boundary walls, temporary removal of boundary walls, temporary ground reprofiling and installation of temporary stone hard standing.
- Installation of a temporary off-site staging area for turbine components within the curtilage of Drishane Castle which is a Recorded Protected Structure (00319) and National Monument

(296), within the townland of Drishane More. The works will include removal of a masonry wall and installation of temporary stone hard standing area and associated access track and entrances to and from the public road R583.

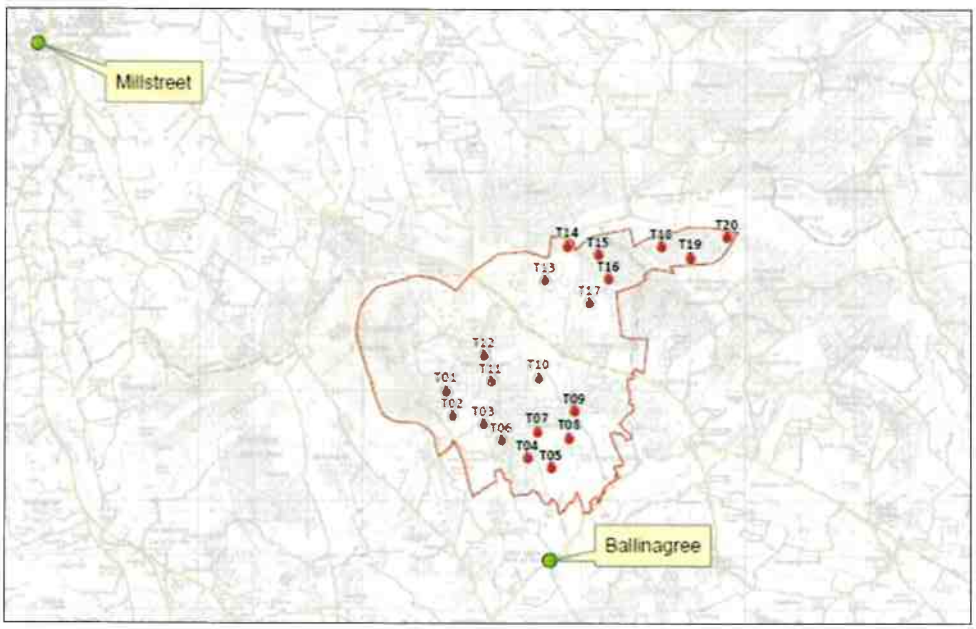
- All related site works and ancillary development including landscaping and drainage.
- A 35-year operational life from the date of commissioning of the entire wind farm is being sought.

It is stated that the plans and particulars submitted with this application for consent are precise and provide specific dimensions for the turbine structures which incorporates a small range in dimensions. The turbine specifications will have a blade tip height range from 179m to 185m, a hub height range from 102.5 m to 110.5m and a rotor diameter range from 149m to 155m. The documents go on to request that the following three fixed dimensions for turbines are consented:

- Tip height of 185m, hub height of 107.5m, rotor diameter of 155m
- Tip height of 185m, hub height of 110.5m, rotor diameter of 149m
- Tip height of 180m, hub height of 102.5m, rotor diameter of 155m

It is stated that each of these 3 no. fixed dimensions within the proposed range have been fully assessed as part of the assessment of the full range proposed as part of the EIA and AA process.

The map below illustrates the geographical context of the proposed development in County Cork.



In relation to Construction Phase Activities, it is expected that the construction phase, including civil, electrical and grid works, and turbine assembly will take between approximately 18 - 24 months.

Permission is sought for a 35-year operation period commencing from full operational commissioning of the wind farm.

3. Pre-Planning Consultation

The applicant has provided details of the pre-planning consultation with An Bord Pleanála (Case Number PC04.306948). The Bord concluded that the proposed development does constitute Strategic Infrastructure Development under the meaning of Section 37A of the Planning and Development Act, 200 as amended.

4. Justification for The Proposal

The Non-Technical Summary of the Environmental Impact Assessment Report (EIAR) outlines the reasons that have precipitated the subject application. It is stated that the proposed Ballinagree Wind Farm is necessary to produce renewable energy for the Irish national grid in order to transition Ireland to a low carbon economy. **The proposed wind farm has an estimated Maximum Export Capacity (MEC) from 118MW to 132MW.** The exact MEC will be dependent on the output power of the models available at procurement stage. The project will play a significant role in providing renewable electricity in the Republic of Ireland, accounting for approximately between 2.7% and 3% of the current installed wind energy capacity (Wind Energy Ireland, 2021).

The rationale behind this argument is noted and accepted.

5. EIAR

In Ireland, Schedule 5 (Part 1 and Part 2) of the Planning and Development Regulations 2001, as amended, transposes Annex I and Annex II to amended EIA Directive 2014/52/EU. **As the proposed development has more than 5 no. turbines and generating capacity of greater than 5MW the application includes an Environmental Impact Assessment Report (EIAR)**, prepared in accordance with the Planning and Development Regulations.

The EIAR is to assist the Irish Competent Authority (An Bord Pleanála) in carrying out EIA for this project.

6. Site Location

The proposed development is located to the North of Ballinagree. The relevant townlands in County Cork are Annagannihy, Aughinida, Ballynagree East, Ballynagree West, Bawnmore, Caherbaroul, Carrigagulla, Carrigduff, Clonavrick, Derryroe, Drishane More, Dromagh, Drominahilla, Dromskehy, Finnanfield, Inchamay South, Kilberrihert, Knocknagappul, Rahalisk and Tullig.

The site forms part of the **"Rural Area Under Strong Urban Pressure"** as set out in the Cork County Development Plan 2014. This reflects the location within the Greater Cork Ring Strategic Planning Area.

The site falls within the SPA Screening Zone – Mullaghanish to Musheramore

Scenic route in proximity to the development site **(Ref. No. S20)** Roads at Mushera in the Boggeragh Mountains and roads from Mushera to Ballynagree, Lackdoha and Rylane Cross

7. Planning History

Relevant planning history in the vicinity of the proposed site.

21/4476 - Coillte CGA - The continued use of an existing, temporary lattice type meteorological mast, 80m in height. The structure is fixed to ground mounted anchors by guy wires and includes associated instruments to measure local meteorological conditions. Permission is sought for a period of 5 years. The mast was erected on site as exempted development pursuant to Class 20 (A), Part 1 Schedule 2 of the Planning & Development Regulations 2001 (as amended) in November 2019. Permission granted by the Planning Authority

20/5342 - Coillte CGA - The erection of a temporary 100m lattice type meteorological mast for a period of 5 years. The structure will be fixed to ground anchors by guy wires and will include instruments for measuring local climate conditions and all ancillary works. Permission granted by the Planning Authority

13/6504 - Greenway Renewable Energy and Coillte Teoranta - The provision of a new road (0.380 km in length). The new road will alter the access road layout previously approved for a wind farm

development (granted planning permission under Planning Reg. No. 10/8067) and will be used by construction and maintenance traffic associated with the previously permitted wind farm. Application withdrawn

10/8067 - Greenway Renewable Energy Ltd., Coillte Teoranta - A wind farm consisting of 38 no. wind turbines with a maximum ground to top blade tip height of up to 136.5 metres with ancillary structures, 4 borrow pits, 1 no. permanent meteorological mast, 1 no. substation, upgrading of existing roads/access tracks, underground cabling and provision of new access track and new entrances onto public roads and all associated infrastructure (at the Boggeragh Mountains in the townlands of Ballynagree East, Carrigagulla, Annagannihy, Knocknagoun, Kilcullen North, Barrahaurin, Commeenaplaw, Meenahony, Gowlane North, Carrigduff, Crinaloo South, Inchamay South, Glenaneatnagh South, Nadanuller Beg and Knock). Permission granted on appeal PL 04.239775

07/12433 - Con Lehane - Construction of building comprising of pumps and water treatment equipment, connection to existing Council Reservoir and retention of existing bored well - Permission granted by the Planning Authority

05/1587 - Midas Energy Ltd. - Re-routing of approx. 1.5 km of 110kV overhead line - Permission granted by the Planning Authority

04/6419 - Midas Energy Ltd. - Construction of overhead transmission line of single circuit 110kv from approved wind farm substation at Carrigduff to ESB Clashavoon substation at Aughinida - Permission granted by the Planning Authority

Other windfarm developments of note

07/4102 - Carriganimma Community Wind Farm Ltd - Wind farm with 6 no. wind turbines (80m hub height and 80m blade diameter with total height not exceeding 120m), a 38kV substation to include pylon and control building within a fenced compound, 1 no. 80m high meteorological mast, construction and upgrading of site entrances, site tracks and associated works – Permission granted by the Planning Authority

08/7158 - Green Energy Company Ltd - Alterations to locations of 4 no. wind turbines(permitted under 01/1248) and increase in hub height from 65m to 80m and construction of on site tracks and associated works – Permission granted by the Planning Authority

09/5118 - The Electricity Supply Board - Erection of new 38kV line from an 110kV station at the wind farm in Boggeragh to the ESB station at Carrigcannon wind farm. The proposed line will consist of 3no. conductors at 2 metres apart supported on double wood poles & approx. 150m apart. Angle structures will consist of lattice steel towers. Total length of the tower is approx 3.5kms passing

through the townlands of Inchamay North, Crinnaloo South & Carrigcannon – Permission granted by the Planning Authority

10/8067 - Greenway Renewable Energy Ltd., Coillte Teoranta - A wind farm consisting of 38 no. wind turbines with a maximum ground to top blade tip height of up to 136.5 metres with ancillary structures, 4 borrow pits, 1 no. permanent meteorological mast, 1 no. substation, upgrading of existing roads/access trakcs, underground cabling and provision of new access track and new entrances onto public roads and all associated infrastructure (at the Boggeragh Mountains in the townlands of Ballynagree East, Carrigagulla, Annagannihy, Knocknagoun, Kilcullen North, Barrahaurin, Commeenaplaw, Meenahony, Gowlane North, Carrigduff, Crinaloo South, Inchamay South, Glenaneatnagh South, Nadanuller Beg and Knock) – Permission granted on appeal PL 04.239775

14/5602 - Esk Windfarm Ltd. - Permission for wind farm comprising the provision of a total of 14no. Wind turbines with a maximum overall blade tip height pf up to 136.5m, upgrading of existing and provision of new internal access roads, provision of a wind anemometry mast (height up to 90m), 4no. borrow pits, an electricity substation with control room and associated equipment, underground electricity connection cabling, 3no. temporary construction compounds, and all ancillary site works including the upgrading of site access junctions - Permission granted on appeal PL 04. 245196

8. Technical Reports & Recommendations

The Strategic Infrastructure Development application was referred to relevant internal departments within Cork County Council. A copy of each of the internal department reports is attached as Appendix C. Where Further Information is recommended the relevant points are set out in Appendix B and where a grant of permission is recommended a list of conditions is included in Appendix A.

Summary of recommendations:

Area Engineer - Indicated no overall objection to the proposal however some concern over the impact on the local road network.

Ecology Section- Highlights concerns about the proposal. Proposes that Further Information be sought and recommends the omission of 4 no turbines (T2, T3, T13 & T17) at a minimum.

Environment (Surface Water and Ground Water) - Officer report-no overall objection to the proposal.

Environment (Air, Noise and Vibration) – The assessment does not identfy any significant issues with the proposal. In conclusion some points that may require a Further Information request are highlighted along with a set of suggested conditions.

Archaeology – Highlights concern about elements of the proposal. It is recommended that two of the turbines (T9 & T8) be omitted. T9 due to proximity to an archaeological monument (CO049-008 Stone Circle) and T8 because it is considered that it will negatively impact on the setting on the archaeological monument (CO049-020 Stone row).

9. Planning Policy and Context

EU Directives and Policies

EU Renewable Energy Directive 2009/28/EC

This directive promotes the use of energy from renewable resource and set targets for each EU member state that are to be achieved by 2020. Ireland has legally binding targets to meet 16 % of its energy consumption by 2020 from renewable sources. It sets a target of 20% of EU energy consumption from renewable sources by 2020 and a 20% cut in greenhouse gas emissions by 2020. The Directive also outlines methods by which member states can coordinate their activities/policies on achieving targets.

European 2020 Strategy for Growth

Europe 2020 is the EU's ten-year growth strategy which identifies five headline targets. One of these targets is Climate Change and Energy Sustainability:

- A reduction in greenhouse gas emissions of 20% (or even 30%, if conditions are right).
- 20% of energy from renewables.
- 20% increase in energy efficiency.

Ireland's mandatory national target is to supply 16% of its overall energy needs from renewable sources by 2020.

2030 Climate and Energy Framework

In October 2014 EU leaders adopted the 2030 Climate and Energy Framework (European Commission 2014) which was subsequently updated in 2018. The framework provides a long-term perspective beyond 2020 targets. The 2030 Climate and Energy Framework sets out three key targets for the year 2030:

- At least 40% cuts in greenhouse gas emissions (from 1990 levels).
- At least 32% share of renewable energy.

- At least 32.5% improvement in energy efficiency.

In 2016 the European Commission published its 2030 emissions targets break down for each state. Ireland is to reduce its emissions by 30% relative to its 2005 emissions.

Energy Roadmap 2050

Energy 2050 roadmap sets out a number of different scenarios for developing a decarbonised energy sector over the coming decades. It is clear under all of these scenarios that, subject to agreement between the Member States, there will be a significant increase required in renewable energy deployment in Europe well over and above the 2020 target levels.

Recast Renewable Energy Directive (RED2)

The regulatory framework includes a binding renewable energy target for the EU for 2030 of 32% with an upwards revision clause by 2030.

European Green Deal

The European Green Deal is a growth strategy for the EU. The EU aim to become climate neutral by 2050.

National Policy

Climate Action and Low Carbon Development Act 2015

The Climate Action and Low Carbon Development Act was published in January 2016. The Act sets out the national objective of transitioning to a low carbon, climate resilient and environmentally sustainable economy in the period up to and including the year 2050. The Act provides for a solid statutory foundation to the institutional arrangements necessary to enable the State to pursue and achieve the "national transition objective". While there are no explicit targets set out within the Act, the legislation obliges the state to consider any existing obligations of the state under the law of the EU or any international agreement.

Project Ireland 2040: The National Planning Framework

The National Planning Framework is a planning framework to guide development and investment over the coming years. Its sets out key goals and objectives for the state. One of the themes is the transition to a low carbon energy future. The three most relevant strategic outcomes to the proposed development are:

- National Strategic Outcome 3: Strengthened Rural Economies and Communities
- National Strategic Outcome 6: A strong economy supported by enterprise, innovation, and skills
- National Strategic Outcome 8: Transition to sustainable energy

National Policy Objectives: 15, 21, 23, 52, 54 are relevant to the proposed development.

Project Ireland 2040: National Development Plan 2018-2027

The National Development Plan 2018-2027 (NDP) published in February 2018, in tandem with the NPF, seeks to drive Ireland's long terms economic, environmental, and social progress in accordance with the spatial planning context of the NPF.

Climate Action Plan 2019

This Plan identifies how Ireland will achieve its 2030 targets for carbon emissions throughout various sectors with several actions.

Climate Action and Low Carbon Development (Amendment) Bill 2020

This Act commits Ireland in legislation to move to a climate resilient and climate neutral economy by 2050.

Department of Environment Heritage and Local Government Planning Guidelines for Wind Energy (June 2006)

These Guidelines offer advice to Planning Authorities on planning for wind energy through the Development Plan process and in determining applications for planning permission. The guidelines are also intended to ensure a consistency of approach throughout the country in the identification of suitable locations for wind energy projects and in the treatment of planning applications for wind energy developments.

Relevant points include:

Visual impact is among the more important considerations and advice is given on spatial extent, spacing, cumulative effect, layout, and height. There is an emphasis on the distinctiveness of landscapes and their sensitivity to absorbing different types of development.

Environmental considerations such as the impact on habitats and birds and the need for habitat management. It is noted that designation of an area of natural and cultural heritage does not in itself preclude development, unless it is judged to be such that it would impact on the integrity of such sites and their natural heritage interests;

The need for information on the underlying geology of the area including a geotechnical assessment of bedrock and slope stability and the risk of bog burst or landslide. Geological consultants should be employed to ensure that sufficient information is submitted.

Impacts on human beings such as noise and shadow flicker.

Draft Revised Wind Energy Guidelines (Published for Consultation on 12th December 2019)

The main points include:

More stringent noise limits: The draft guidelines propose a noise limit, referred to as Relative Rated Noise Limit (RRNL) in the range of 35 – 43 dB(A), while not exceeding the background noise level by more than 5dB(A) with an upper limit of 43 dB(A).

A setback of 4 times the turbine tip height between a wind turbine and the curtilage of a residential property, subject to a mandatory minimum setback distance of 500 metres.

Elimination of shadow flicker.

New requirements concerning engagement with local communities along with the provision of community benefit measures; and

Undergrounding of grid connection, except where ground conditions prevent it.
The government has issued Planning Circular Letter PL 5/2017 and the "Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change July 2017". Local Authorities shall, in preparing Development Plans, acknowledge and document national policy on renewable energy and indicate how the plan will contribute to realising overall national targets on renewable energy (particularly in any proposal to introduce or vary a mandatory setback distance or distances for wind turbines).

National Landscape Strategy for Ireland 2015-2025 (DAHG)

The strategy provides a framework for the protection of cultural, social, economic, and environmental values embedded in the landscape, and includes policies aimed at understanding, managing, protecting, and planning the landscape. It is also sets out specific measures to integrate and embed landscape considerations in all sectors, as well as measures to improve and enhance the quality of decision-making by those who have an impact on it. The strategy recognises that there are concerns regarding the siting of national infrastructure development within the country's landscape.

Regional Level

Southern Regional Spatial and Economic Strategy (RSES)

The Regional Spatial and Economic Strategy sets out a strategy to implement the NPF in the Southern Region.

The most relevant objectives of the Strategy are:

RPO 50 Diversification

It is an objective to further develop a diverse base of smart economic specialisms across our rural Region. Renewable energy is included in the list of such specialisms.

RPO 56 Low Carbon Economy

Recognises urgency to transition to a low carbon future.

Objective to develop enterprises that create and employ green technologies.

Local authorities should ensure that the development of green industry and technologies incorporates careful consideration of potential environmental impacts at project level including the capacity of the receiving environment and existing infrastructure to serve new industries.

Local authorities shall include objectives in statutory land use plans to promote energy conservation, energy efficiency and the use of renewable energy sources in existing buildings.

Objective to support investment in energy efficiency of existing commercial and public building stock.

RPO 95 Sustainable Renewables

It is an objective to support implementation of the National Renewable Energy Plan (NREAP) and the Offshore Renewable Energy Plan and the implementation of mitigation measures outlines in their respective SEA and AA and leverage the Region as a leader and innovator in sustainable renewable energy generation.

RPO 99 Renewable Wind Energy

It is an objective to support the sustainable development, maintenance and upgrading of electricity and gas network grid infrastructure to integrate renewable energy sources and ensure our national and regional energy system remains safe, secure and ready to meet increased demand as the regional economy grows.

County Development Plan and Local Area Plans

Cork County Development Plan 2014

Wind energy

In relation to Wind Energy, Chapter 9 "Energy and Digital Economy" of the Cork County Development Plan 2014 defines three areas as follows:

"Acceptable in Principle."

"Open to Consideration."

"Normally discouraged."

The proposed windfarm lies within an Area "Open to Consideration".

Landscape Character type

The subject land is not designated as High Value Landscape.

The site is located within different landscape character types as set out in the Cork County Development Plan, 2014. Namely (i) Ridged and Peaked Upland (15b), (ii) Fissured Marginal and Forested Rolling Upland (14b) both these are given a Medium landscape sensitivity and Medium Landscape Value, and (iii) Valleyed Marginal Middle ground (13a) with a High landscape sensitivity; High Landscape Value; and County Landscape Importance.

Scenic Routes

Scenic routes run in closest proximity to the site, namely Scenic Routes (Reference No. - S20) - Roads at Mushera in the Boggeragh Mountains and roads from Mushera to Ballynagree, Lackdoha and Rylane Cross. The scenic routes are denoted highlighted in a red line on the map set out below.

Figure 2 Scenic routes - highlighted in blue

Other relevant planning policies

Relevant planning policies of the County Development Plan 2014 in relation to this windfarm include:

ED 1-1 Energy: Ensure that through sustainable development County Cork fulfils its optimum role in contributing to the diversity and security of energy supply and to harness the potential of the county to assist in meeting renewable energy targets.

ED 6-1 Electricity Network: Support and facilitate the sustainable development, upgrade and expansion of the electricity transmission grid, storage, and distribution network infrastructure. Support the sustainable development of the grid including strategic energy corridors and distribution networks in the region to international standards.

ED 6-1 and ED 6-2 facilitate practical and feasible infrastructure and feasibility of undergrounding especially in high landscape character areas.

ED 3-5 Open to Consideration

Commercial wind energy development is open to considerations in these areas where proposals can avoid adverse impacts upon:

- Residential amenity particularly in respect of noise, shadow flicker and visual impact.
- Urban areas and metropolitan /Town green belts.

- Natura 2000 sires (SPA and SAC), Natural Heritage Area (pHNA's) or adjoin areas affecting their integrity.
- Architectural and archaeological heritage.
- Visual quality of the landscape and the degree to which impacts area highly visible over wider areas.

GI 2-1 Develop and implement a Green Infrastructure Strategy for County Cork. Help to identify, protect, manage, and develop green infrastructure resources.

GI 3-1 Require new development to contribute to the protection and enhancement of the existing green infrastructure of the County.

GI 6-1: Landscape

a) Protect the visual and scenic amenities of County Cork's built and natural environment.

b) Landscape issues will be an important factor in all land-use proposals, ensuring that a proactive view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability.

c) Ensure that new development meets high standards of siting and design.

d) Protect skylines and ridgelines from development.

e) Discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or other distinctive boundary treatments.

GI 7-2: Scenic Routes Protect the character of those views and prospects obtainable from scenic routes and in particular stretches of scenic routes that have very special views and prospects.

GI 7-3: Development on Scenic Routes Demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features including mitigation measures to prevent significant alterations to the appearance or character of the area and encourage appropriate landscaping and screen planting.

GI 13-1 Minimise Noise Pollution associated with development having regard to relevant standards published guidance and the receiving environment and support Noise Action Plans.

GI 13-2 Minimised Light Pollution.

GI 10-3 Preserve and protect groundwater.

HE 2-1 Protect all Natural Heritage sites including Special Area of Conservation, Special Protection Area, Natural Heritage Areas, Statutory Nature reserves, Refuges for Fauna and Ramsar.

HE 2-2 Protect plant and animal listed species.

HE 2-7 Control of invasive plant and animal species including Japanese knotweed.

HE 3-1: Protection of Archaeological Sites Safeguard sites and settings, features, and objects of archaeological interest generally. b) Secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments including the Sites and Monuments Record (SMR) (see ww.archeology.ie) and the Record or Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, as amended and of sites, features and objects of archaeological and historical interest generally. In securing such preservation, the planning authority will have regard to the advice and recommendations of the Department of Arts, Heritage and Gaeltacht as outlined in the Frameworks and Principles for the Protection of the Archaeological Heritage.
HE 3-3: Zones of Archaeological Potential Protect the Zones of Archaeological Potential (ZAPs) located within historic towns and other urban areas and around archaeological monuments generally. Any development within the ZAPs will need to take cognisance of the potential for subsurface archaeology and if archaeology is demonstrated to be present appropriate mitigation (such as preservation in situ/buffer zones) will be required.

HE 3-4 Industrial and Post Medieval Archaeology Protect and preserve the archaeological value of industrial and post medieval archaeology such as mills, limekilns, bridges, piers,

harbours, penal chapels, and dwellings. Proposals for refurbishment, works to or redevelopment/conversion of these sites should be subject to careful assessment.

TM 3-1 Seek to support the NRA in the national road network, to restrict individual access points and avoid the creation of new access points, etc.

TM 3-3 Ensure all new vehicular access are designed to appropriate standards of visibility to ensure the safety of other road users. Improve the safety and standards of public roads.

Draft Cork County Development Plan 2022-2028

The new draft County Development Plan does not include any significant change to the approach of the County Council regarding Windfarm development. The approach to Windfarm developments is set out in Chapter 13 – Energy & Telecommunications and specifically in Section 13.5 dealing with Wind Energy.

The review is nearing completion. After the 15th February 2022, the Executive have 4 weeks to prepare a Section 12(8) Chief Executive's Report on submissions/observations made in relation to the Proposed Amendments to the Draft Plan and associated Environmental Reports and the Updated Cork County and Cork City Councils' Draft Joint Housing Strategy 2022-2028. This report and all proposed amendments to the Draft Plan will be considered by the Elected Members not later than 6 weeks after receiving the Section 12(8) Chief Executive's Report.

Having considered the Section 12(8) Chief Executive's Report, the Elected Members will make the Plan with or without the Proposed Amendments and adopt the Plan on 25th April 2022 which will come into effect on 6th June 2022.

Local Area Plans

The site is located within the area covered by the Blarney Macroom Municipal District Local Area Plan, 2017. This rural area is not zoned for any specific purpose in that plan.

10. EIAR Assessment

This part of the report comments on the content of the Environmental Impact Assessment Report (EIAR) included with the application. There will be some level of overlap in terms of the issues raised in the internal reports, as submitted by the various internal departments of Cork County Council.

Chapter 1 - Introduction

The chapter sets out and gives an overview of the applicant, the proposed development (20 turbines, 2 permanent met masts and 1 substation compound and associated infrastructure) and the legislative context of the EIAR and provides a synopsis of its structure. Figure 1.1 maps the site location (north of Ballinagree Village). Table 1-1 lists the names and qualifications of the contributors to each chapter of the EIAR. It is stated in this chapter that the applicant is requesting a 10-year permission with a 35 year operational period from the date of commissioning of the wind farm. The proposed site has a stated area of 615.64hectares.

Chapter 2 – Need for the Development and Alternatives Considered

Need for the Proposed Development

The need for the project, as set out in Section 2.2, cites the development of wind energy as necessary to produce renewable energy for the Irish National grid in order to transition Ireland to a low carbon economy. It states that the proposed development will have an estimated maximum export capacity (MEC) of between 118MW and 132MW and will play a significant role in providing renewable energy electricity in the Republic of Ireland, estimating that it will account for between 2.7% and 3% of the current installed wind energy capacity.

Alternatives Considered

Chapter 2 also details the reasonable alternatives considered by the applicant and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. Included in this is the site selection process and considered alternatives including design and site layout. Alternative processes including alternative renewable energy technologies were also considered.

A do nothing scenario was considered but discounted as it would contribute to the strain on the existing energy infrastructure and may impact on economic growth if energy demand could not be met and socio-economic benefits from the development would be lost.

Chapter 2 details the site selection process and considered alternatives including design and site layout. Once selected the site was further examined in the context of planning policy, designated sites, population density and wind speed and grid constraints. Alternative layouts for the proposed wind farm were developed in an iterative design process which aimed to avoid environmental

sensitivities, minimise potential environmental impacts both on and off site and to maximise the wind potential on site.

A number of different turbine heights were considered before settling on the maximum tip height of 185m as now proposed. The relationship between the turbine height and density (number of turbines) required to achieve a particular output was a key design consideration. It is stated that an initial design iteration consisted of a 24turbine layout. This changed to 19turbines and then 21 turbines before reaching the final layout of 20 turbines. A comparison of potential environmental impacts of the wind farm site design iteration options and the chosen option for the proposed Ballinagree Wind Farm project is detailed in Table 2-4. The proposed option was developed to present the least potential environmental impact through the project philosophy of mitigation by design. Various grid connection, borrow pit and turbine delivery routes options were also examined.

The need for the proposed development is accepted.

Chapter 3 – Description of Proposed Development

Chapter 3 describes the existing site and the main components of the proposed project and provides details on the construction, operation and decommissioning of the wind farm in compliance with the EIA Directive.

The development will comprise of construction of 20 no. wind turbines with a blade tip height range from 179m to 185m, a hub height range from 102.5 to 110.5m and a rotor diameter range from 149m to 155m. it is stated that the plans and particulars submitted are precise and provide specific dimensions, with a limited range in dimensions. It is stated that the ultimate final turbine selection will fall within the parameters of the range. The exact make and model of the turbine will be dictated by a competitive tender process, but it will not exceed the maximum or minimum size envelope set out above.

Details are submitted on proposed turbine delivery route, connection to the national grid. The grid connection route will consist of underground 110kV cable and will connect the on-site substation to the existing 110/220kV substation at Clashavoon. The grid connection will be 11.4km in length, with 9.4km to be constructed within the existing road corridor and the remainder located along forestry tracks within private lands.

Details on decommissioning and reinstatement have been included.

The chapter appears to be thorough and considered.

Chapter 4 - Policy

This chapter of the EIAR outlines current EU, national, regional and local policy and legislation relating to the proposed Ballinagree wind farm.

Both the Cork County Development Plan 2014 and Draft County Development Plan 2022 - 2028 which sets out the wind energy strategy for the county have been considered. Lands located within the wind farm development are identified as being 'open for consideration' for wind energy development (the proposed development is all within the area identified as 'open for consideration' while a small part of the southwestern end of the overall site is within an area identified as 'normally discouraged'.

In general principle terms, the proposal meets the requirements of the current County Development Plan (CDP), in particular objective ED 1-1: (energy) and objective ED 3-1, 3-2 and 3-3 (wind energy). It is also noted the draft CDP 2022 includes objective ET 13.4 (Wind Energy) whereby it states;

> In order to facilitate increased levels of renewable energy production consistent with national targets on renewable energy and climate change mitigation as set out in the National Energy and Climate Plan 2021-2030, the Climate Action Plan 2019, and any updates to these targets, and in accordance with Ministerial Guidelines on Wind Energy Development, the Council will support further development of on-shore wind energy projects including the upgrading or expansion of existing infrastructure, at appropriate locations within the county in line with the Wind Energy Strategy and objectives detailed in this chapter

The general principle is therefore supported by the CDP.

All of the proposed site is on rural lands located within the 'Rural Area Under Strong Urban Influence' as set out in the 2014 CDP. The site is traversed by a main road which is designated as a scenic route – Road at Mushera in the Boggeragh Mountains and roads from Mushera to Ballinagree, Lackdoha and Rylane Cross. There are other scenic routes in the vicinity which have been

considered. Landscape character types have been considered. It is noted that the site falls within three landscape character types.

In light of the foregoing it is considered the that the proposed development is in accordance with the aims/ objectives of the current County Development Plan 2014 and draft County Development Plan 2022, and will assist in the delivery of key strategic energy objectives and land use development policies, set out in European, National, regional, and local documents, statements, policies and plans.

It is noted in the Draft Cork County Development Plan, 2021 "if Ireland is to meet our renewable energy target then we need to double capacity nationally over the next ten years. On a pro rata basis, that could see capacity in Cork expand to 1,100MW. At present they are valid but unimplemented permissions in the county for a further 200MW of wind power".

The issues which are likely to need further assessment are the acknowledgement that the proposal is supported by policy and the need to measure that against the likely impacts that the proposed development will have on the receiving landscape in all other respects. Financial benefits and recreational offerings to the community are also mentioned.

Chapter 5 – EIA scoping, consultation, and key issues

This section of the EIAR describes the EIA scoping process and the stakeholder consultation that was conducted throughout the development of the Ballinagree Wind Farm project. It is stated that due to Covid community engagement events could not take place and instead the proposal was presented through online exhibition where the public could view the proposal and send feedback.

It states that the purpose of the EIA scoping process is to identify the key points and issues which are likely to be important during the environmental impact assessment (EIA) and to eliminate those that are not.

In accordance with guidelines, An Bord Pleanála should take into account the degree to which the applicants have meaningfully and properly consulted with the local community and facilitated public participation in developing their proposals.

Chapter 6 - Air Quality and Climate

This section describes the existing air and climate environment of the proposed Ballinagree Wind Farm project as a whole. It examines the various elements of the construction, operational and decommissioning phases of the proposed project. Mitigation measures and the residual impacts after the proposed mitigation measures have been implemented are also described. A cumulative impacts assessment is also carried out.

It is stated that there are no significant impacts expected on Air Quality or Climate as a result of the construction, operation and decommissioning of the proposed project.

There are no significant cumulative impacts expected on Air Quality and Climate as a result of other existing or proposed projects.
There will be a long term positive residual impact on air quality and climate as a result of the development due to the displacement of fossil fuels.

The mitigation measures identified in this Chapter will be adopted and implemented by the Contractor and have been incorporated into the construction stage CEMP.

The cumulative benefit of the proposed wind farm with other renewable energy projects in reducing carbon dioxide emissions by displacing fossil fuel in the production of electricity is recognised.

The Environment Department reviewed Chapter 6 of the EIAR (Appendix C) and notes that In the context of the potential dust nuisance impacts on receiving receptors that may have the potential to arise during the construction phase, it should be clarified by the developer if it is proposed or if any background dust monitoring has been conducted in the vicinity of the proposed development. This could be used to quantify the existing Environment and as a baseline for any future monitoring undertaken to support and evaluate the effectiveness of the proposed mitigation measures.

Chapter 7 – Noise and Vibration

The site is in a rural area with predominantly forestry and agricultural activity. This chapter contains an assessment of the potential noise and vibration impacts associated with the proposed Ballinagree Wind Farm project.

It is stated that the assessment has considered the whole range of proposed turbine dimensions, including minimum and maximum tip heights, hub heights and rotor diameters. The EIAR describes

the methodology and the noise modelling software employed in the assessment of noise associated with the proposed development as well as the potential impacts of noise. The assessment also details the special characteristics of turbine noise. Vibration associated with the proposed development is also discussed in this chapter.

Baseline noise monitoring has been carried out at sixteen receptor locations around the proposed windfarm to establish the existing levels of background noise in the vicinity of the site and enable noise criteria for the site to be derived.

Cumulative noise from the proposed windfarm, substation and adjacent existing and proposed windfarms has also been assessed. When cumulative noise is considered, noise mitigation is required to reduce noise from the proposed development at one property. This mitigation is provided by limiting noise from two of the turbines when wind speeds operate at 7m/s or 8m/s, using noise reduced turbines.

It is stated that the nearest noise sensitive locations from the on-site construction works are sufficiently distant that vibration will not be perceivable by residents at their dwellings and building damage will not occur from construction incurred vibration. As such, construction vibration is not considered further. Operational vibration has also been scoped out.

This chapter of the EIAR was reviewed by the Environmental Department of Cork County Council. (Appendix C). The Environment report recommends that the Bord should seek their own acoustic expertise to peer review the methodologies and modelling followed in the noise impact assessment.

Some issues whereby further information might be requested are included in the Environment Report in relation to Air and Noise and Vibration. Planning conditions are also included. (See Appendix C).

Chapter 8 – Biodiversity

Chapter 8 of the EIAR describes the flora and terrestrial fauna in the receiving environment and assesses the potential impacts of the project upon terrestrial ecology. The EIAR assesses the potential for the construction, operation and decommissioning phases of the proposal to result in significant effects on Biodiversity. The submitted NIS report was prepared to inform the appropriate assessment process required for the proposal. A comprehensive summary of the contents of both

Chapter 8 and the Natura Impact Statement is contained within the report of Cork County Council Ecology Office, the full report can be found at Appendix C.

It is noted that a Biodiversity Enhancement Management Plan (BEMP) has also been prepared to outline a set of land management prescriptions (commitments and monitoring) as part of the proposed Ballinagree Wind Farm Project. It is stated that with the implementation of the BEMP there will be a predictable local gain for biodiversity in the area and the residual terrestrial biodiversity impacts are considered to be likely significant positive at the local level in the long-term.

Cork County Council's Ecologist has concerns in relation to the potential impacts and effects that the proposed windfarm development will have on populations of a number of species recorded at the site with particular reference to Hen Harrier and Golden Plover and to a lesser extent Bats and Badger within the locality and their ability to maintain viable populations. It is therefore considered that significant additional information is required which takes into consideration a number of direct, indirect and cumulative impacts to complete both Appropriate Assessment and Environmental Impact Assessment of this proposal. (See Appendix C).

Furthermore, it is recommended that 4 no turbines (T2, T3, T13 & T17) be omitted, at a minimum, to ensure the avoidance of impacts on upland peatland habitats of biodiversity value. Additional turbines may need to be omitted on completion of impact assessment in relation to species such as Hen Harrier and Golden Plover.

Chapter 9 – Land, Soils, Hydrogeology & Geology

Chapter 9 examines the existing environment and notes that the subsoils across the site comprise predominantly Till derived from Devonian Sandstones, Bedrock outcrop or subcrop, Blanket Peat and Alluvium. The majority of the proposed grid connection route is underlain by Till derived from Devonian Sandstones with limited areas of bedrock subcrop or outcrop and alluvium indicated along the grid connection route.

It is stated in the EIAR that areas of blanket peat are largely concentrated in the northern part of the wind farm site, with the peat deposits ranging from 0.2 to 3m across the site.

The EIAR states that the proposed development is not expected to contribute to any significant, negative cumulative effects with other existing or known developments in the vicinity. Slight residual

cumulative effects from the excavation of fill material from local quarries are considered to result from the proposed development by placing demand on existing quarries during the construction phase of the development. However, it is envisaged to use as much site-won material as possible therefore, the cumulative impact will be negligible.

The Councils Ecology report (full report in Appendix C) notes as per the pre-planning advice issued by the Cork County Council Ecology Office, this office recommends that no such development take place on intact peatland habitats and be avoided on degraded peatland habitats or any habitats of high natural value. Taking this into consideration, he recommends that the following Turbines at a minimum be removed from the proposal design:

- T2 - located in wet/acidic grassland GS3/GS4;
- T3 - located in degraded dry heath HH3; and
- T13 & T17 - located in cutover bog/wet heath mosaic habitat HH3/PB4.

It is the recommendations of Cork County Council Ecology Office that no development should take place on intact peatland habitats and development should be avoided on degraded peatland habitats or any habitats of high natural value.

The Councils Ecologist recommendations must be considered and taken on board and may lead to a revised layout and reduction in turbines.

Chapter 10 – Hydrology and Water Quality

Chapter 10 describes the existing hydrology and water quality in the receiving environment in the study area and examines the aspects of the hydrology and water quality of the local environment that could be affected by the activities associated with the proposed development.

The chapter also includes information on any historical flooding within the site, internal site drainage and cable route watercourse crossings. It also identifies potential impacts during construction, operation and decommission phase. The Chapter also includes a flood risk assessment, the proposed drainage layout and mitigation measures.

It is noted that the wind farm site is situated within three sub-catchments. These are: Sullane_SC_020, Blackwater (Munster)_SC_050 and Blackwater (Munster)_SC_070.

The site is not situated within any environmentally designated areas however it is hydrologically linked with the Blackwater River SAC (002170), approximately 4.5km downstream of the wind farm site.

It is stated that Due to the mitigation measures proposed, the residual and cumulative impacts of the proposed development on hydrology and water quality are not significant.

The Councils Ecologist notes that while he generally has concerns regarding such a large proposal, with a hydrological connection to watercourses within the highly sensitive catchment of the Blackwater, this office considers that the mitigation measures and procedures to be implemented should provide sufficient protection of water quality and aquatic fauna.

The Environment Department also notes that during the construction period, the development has the potential to have impacts on hydrology and water quality unless appropriate mitigations are applied. Tree felling, new access tracks and upgrade of existing tracks, turbine hardstanding areas, the on-site substations and other new, hard surfaces have the potential to contribute to an increase in runoff.

The applicant has identified that the risk to hydrology is relatively low because the development will not have a major impact on run-off rates.

A Surface Water Management Plan was submitted in Appendix 10.2 of the EIAR. The Surface Water Management Plan will be finalised following the appointment of the contractor for the main construction works.

This chapter has been considered and fully assessed by the Environment Section of Cork County Council and the Area Engineer and a more detailed assessment has been outlined in their reports (See Appendix C). It is felt that any potential impacts can be mitigated with appropriate planning conditions good management to ensure same.

Chapter 11 – Population, Human Health & Material Assets

Chapter 11 examines the potential effects of the proposed wind farm on Population, Human Health and Material Assets during construction, operation, and decommissioning. It examines these under the following headings:

- Population
- Socio-Economics
- Land-use
- Recreation, amenity, and tourism
- Human Health
- Renewable resources, non-renewable resources, and utility infrastructure.

The area is predominantly rural in character consisting of one-off houses focused around the local road network. According to Eircode data 2020, there are 60 no. residential dwellings within 1.55km of the turbine locations. Of these 60 dwellings, 10 no. are also registered as commercial (farmsteads). There is one permitted dwelling yet to be constructed within 1.55km of the proposed turbine locations.

This chapter is detailed and would appear to present adequate information under each topic heading.

Chapter 12 – Shadow Flicker

This chapter considers potential shadow flicker effects at nearby buildings and proposes mitigation measures.

It is noted that Government guidelines recommend that shadow flicker should be limited to no more than 30 days a year or 30 minutes a day for any sensitive receptor within 500 m of a wind turbine. Other European guidance documents, however, state that shadow flicker effects may occur at up to 10 rotor diameters away from a turbine, therefore, the shadow flicker assessment for the proposed development has assessed shadow flicker effects for all residential and commercial properties within a 10 rotor diameter study area, which is equivalent to up to 1550 m from the nearest turbine. The shadow flicker assessment assesses the full range of turbine parameters proposed.

A total of 60 sensitive receptors were identified within the adopted 1550 m shadow flicker study area. The closest receptor is 809 m from the closest wind turbine. There are no sensitive receptors located within the 2006 WEDG 500 m assessment area.

The assessment approach and modelling parameters etc. have all been explained and set out in the chapter. Three different scenarios were considered and the results for each scenario outlined. In all cases there are over 30 receptors where there is potential for shadow flicker. (This amounts to more than half of the overall number of receptors which is stated as 60).

Cumulative impacts were considered and it was concluded that the potential cumulative impact of shadow flicker is negligible when considering the potential impacts of Ballinagree Wind Farm in combination with other developments.

Mitigation measures are proposed and it is stated that the proposed method of mitigation will be used to mitigate all shadow flicker effects resulting in zero shadow flicker, allowing for a short time for the rotor to come to a stop.

It is therefore considered that Ballinagree Wind Farm will comply with the recommended limits of 30 hours per year and 30 minutes per day detailed within the Wind Energy Development Guidelines (2006) and the zero shadow flicker policy as set out in the Draft Revised Wind Energy Development Guidelines (2019). Following
implementation of mitigation measures described in Section 12.4, the residual impact as a result of shadow flicker will be imperceptible. Accordingly, it is considered that there will be no residual impact as a result of shadow flicker.

It is the Planning Authorities opinion, that every effort should be made to avoid the impacts of shadow flicker occurring in the first instance. If this is not possible, should An Bord Pleanála decide to grant planning permission then it is considered that any conditions imposed with regards to shadow flicker should require the applicant to implement mitigation measures to ensure zero shadow flicker is attained and therefore protect residential amenity in accordance with best practice.

Chapter 13 – Traffic & Transportation

This chapter of the EAIR describes the existing road network and study area along with the traffic and transportation in the vicinity of the proposed wind farm. The section examines the potential impact and any necessary mitigations required in relation to the construction, operation and decommissioning of the wind farm.

The construction of the project in its entirety is expected to take between 18 – 24 months. This chapter outlines how the construction programme will involve site establishment, site access road and drainage construction, hardstanding construction and substation works. The grid connection works are likely to be done in parallel with the site works and the turbine installation works will be completed before commissioning, reinstatement and landscaping. However, it is also possible that the grid route could commence prior to the on-site infrastructure or subsequent to the construction of the on-site infrastructure. Carrying out the grid connection works in parallel with the site works represents the worst case scenario.

The assessment has considered the whole range of proposed turbine dimensions, including minimum and maximum tip heights, hub heights and rotor diameters.

A number of measures will be employed during construction to reduce and minimise disruption to the public and road users. These include;

- A Traffic Management Plan to be implemented
- A Traffic Management Coordinator to be appointed
- Road pre-condition survey to be carried out
- Road reinstatement on completion of the works
- Site inductions – all workers will receive an induction
- 24-hour emergency contact
- Traffic management guidance – all temporary traffic management will be planned and executed in accordance with best practice
- Letter drops will be carried out to notify the public living nearby of upcoming traffic related measures
- Signage – clear signage relating to the development will be displayed
- Road sweeper – if necessary a road sweeper will be used
- Site entrance – the entrances will be secured when not in use and when necessary a flagman will be used.

Chapter 13 concludes that the mitigation measures identified in this Chapter will be adopted and implemented by the Contractor and have been incorporated into the construction stage CEMP and TMP for the project.

The Area Engineer has considered Chapter 13 and his report is included in Appendix C. he has commented on the cable route, delivery route for turbines, borrow pits (access to etc,), requirement for a road condition survey, requirement for security bond, suggested development charges and has listed prohibited roads for construction traffic. His report includes various conditions in the event of a grant of planning permission.

The Area Engineer notes that Turbine T-09 and part of the site access track appear to be shown on or adjacent to public road L-34182-0. The applicants need to confirm that this is not the case.

Chapter 14 – Archaeology, Architectural and Cultural Heritage

This chapter assesses the impacts of the proposed wind farm, grid connection, biodiversity enhancement and management areas and turbine delivery routes on the known and potential cultural heritage resource within their environs. The term 'Cultural Heritage' encompasses heritage assets relevant to both the tangible resource (archaeology, architecture heritage); and non-tangible resources (history, folklore, tradition, language, place names etc.).

The methodology is set out and a description of the study area is included. The study area extends for 1km from the proposed locations of turbines, access roads, compounds, borrow pits and substations within the wind farm site and was reviewed in order to assess the potential for direct impacts on the cultural heritage resource. Potential impacts are described at each stage, construction, operational and decommissioning and cumulative impacts were considered.

Mitigation measures are proposed.

The County Archaeologist reviewed Chapter 14 and has considered each element of the development i.e. windfarm, grid connection, turbine delivery routes and non-designated cultural heritage. She has made some recommendations. She is recommending the omission of Turbine 9 given its proximity to the Stone Circle CO049-008 which is designated High value status in the EIAR, and because the proposed development will have a high negative and significant indirect impact on the archaeological monument CO049-008 Stone Circle and its setting along with and the surrounding prehistoric archaeological landscape CO049-7 stone circle, CO049- 20 stone row, CO049-57-59 & 68 Fulacht fiadh. She is also recommending the omission of Turbine 8 as currently proposed as it will negatively impact on the setting on the archaeological monument CO049-020 Stone row and

surrounding prehistoric archaeological landscape. Conditions in the event of a grant of planning permission are recommended.

The County Archaeologists recommendations must be considered and taken on board and may lead to a revised layout and reduction in turbines. (full report contained within Appendix C).

Chapter 15 – Landscape & Visual

The Landscape chapter describes the landscape context of the proposed Ballinagree Wind Farm and assesses the likely landscape and visual impacts of the scheme on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately. The assessment has considered the whole range of proposed turbine dimensions, including minimum and maximum tip heights, hub heights and rotor diameters.

It is explained that Landscape Impact Assessment (LIA) relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. Visual Impact Assessment (VIA) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people.

Cumulative landscape and visual impact assessment is concerned with additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.

The study area and methodology are rationalised and described. A refined set of VPs was selected for assessment. This includes the capture of reference images and grid reference coordinates for each VP location for the visualisation specialist to prepare photomontages.

The principal landform within the study area is that of the Boggeragh Mountains. Musheramore Mountain is the highest of the Boggeragh Mountains rising to a height of c.644m AOD and contains the westernmost portions of the proposal site. North and northwest of the site the elevated hills and ridges of the Boggeragh Mountains swiftly transition to a low rolling landscape where the terrain drains into numerous small rivers and streams that flow into the River Blackwater. The River Blackwater is the most prominent watercourse in the wider northern half of the study area where it

flows in a general easterly direction entering the study area at the settlement of Rathmore and exiting it southwest of Mallow.

The principal land uses within the study area is that of agricultural farmland bound by networks of mixed hedgerow vegetation. Much of the site and its immediate surrounds are contained in extensive conifer forest plantations.

The nearest centre of population in relation to the proposed development is the small rural village of Ballinagree situated c. 1.5km south of the nearest proposed turbine. The most notable major routes in relation to the proposed project include the N72, N22 and N20. All of these occur within the wider study area with the N22 the nearest of the three and situated just under 10km south of the nearest turbine where it passes through the settlement of Macroom. Various heritage and amenity features within the study area and outside have been considered.

The site is within 3 different landscape character types as per the Council's landscape character assessment and the site is not within the 'high Value landscape' designation.

It is noted that the development can never be screened out of view given the size of the turbines therefore landscape and visual mitigation for wind farms must be incorporated into the early stage site selection and design phase. This is what happened in this case.

In terms of LIA, the principal landscape impact will be the change in character of the immediate area due to the introduction of large-scale structures with moving components. Overall, it is not considered that the proposed wind farm will give rise to significant landscape impacts.

In terms of VIA, the visual impacts of the proposed Ballinagree Wind Farm development were assessed across 34 different viewpoints where the sensitivity of each receptor varied widely from Low to High. The most notable impacts are likely to occur along sections of the S20 scenic route which pass immediately north of the southern turbine cluster on the L2758 local road, and are representative of 'Designated Scenic Routes', Local Community Views' and 'Amenity Features'.

It is considered that the site and its surrounds can accommodate an additional large-scale wind energy development. The assessment has considered the whole range of proposed turbine dimensions, including minimum and maximum tip heights, hub heights and rotor diameters.

Overall, this is considered to be an intensively managed working landscape where wind existing energy development is already a strongly characteristic feature in combination with forest plantations and upland farming. The proposed Ballinagree Wind Farm is considered to contribute an additional cumulative effect that is in the order of High-medium within the Boggeragh Mountains, which will reduce to Low in the wider surrounds of the study area where the proposed turbines will appear as an extension to the existing developments within the Boggeraghs.

A very detailed assessment has been provided as to the likely visual impacts of the proposed development on the landscape. There were 6 viewpoints from which the impact was deemed to be 'medium-high' to 'high'. The proposed (under construction) new Macroom bypass route should also be considered in terms of visual impact from the route and should possibly be an additional viewpoint.

Chapter 16 – Telecommunications and Aviation

The implementation of a suitable mitigation strategy will ensure that local telecommunications are not adversely affected by the development. Following the implementation of mitigation measures, no significant residual effects are likely on telecommunications and broadcasting or aviation as a result of the development.

Chapter 17 – Interactions of the Foregoing

Chapter 17 of the EIAR outlines interactions and inter-relationships of various environmental aspects and details these in a table format. It states that the EIAR has considered these interaction s and inter-relationships through the assessment, first through the design of the wind farm site, the grid route and turbine delivery route to avoid impacts where possible and also in the definition of suitable mitigation measures to minimise potential impacts. The EIAR concludes that the significant impacts associated with the inter-actions of environmental effected will be avoided due to the implementation of mitigation measures outlines throughout the EIAR

Part 11. Appropriate Assessment

A Natura Impact Assessment Report has been submitted. This has been reviewed by CCC Ecology section (see full body of report under Appendix C below). The Ecologist highlights significant concerns in relation to the potential impacts and effects that the proposed windfarm development

will have on populations of a number of species recorded at the site with particular reference to Hen Harrier and Golden Plover and to a lesser extent Bats and Badger within the locality and their ability to maintain viable populations. I consider that significant additional information is required which takes into consideration a number of direct, indirect, and cumulative impacts to complete both Appropriate Assessment and Environmental Impact Assessment of this proposal.

It is considered that these issues should be dealt with by way of further information before undertaking the full assessment of the proposal.

The report includes suggested Further information points (Set out in Appendix B), but also includes a set of recommended conditions in the event that a Grant of permission is to be considered (Set out in Appendix A).

Part 12. Concluding opinion

The (current) County Development Plan 2014 is the primary land-use policy document for a Planning Authority in determining whether or not a proposal that comes before the authority is in accordance with the proper planning and sustainable development of an area is the relevant County Development Plan.

Having regard to the relevant policies of the County Development Plan 2014 in relation to the growing importance of renewable energy and taking into account the supporting documentation accompanying the application, it is considered that the proposed development complies with the policies and objectives of the CDP 2014 and draft County Development Plan 2022 and would constitute proper planning and sustainable development. The Planning Authority therefore has no objection to the proposed development subject to application of suitable conditions/ resolution of some elements of concern as highlighted.

Conditions

If An Bord Pleanála, (being the 'competent authority') considers granting planning permission for the proposal, a schedule of suggested conditions, as requested in the Advice Guidelines that accompanied the publication of the Planning and Development (Strategic Infrastructure) Act 2006 is attached under Appendix A.

However, the conditions that are recommended assume that any issues identified and that form the basis of further information requests have already been dealt with. Therefore, it is proposed to provide recommendations for conditions more as a topic heading, rather than an exhaustive list. Exact conditions are also included as part internal officer reports (Appendix C).

If An Bord Pleanála, (being the 'competent authority') considers that further information is required, a schedule of items as requested in the Advice Guidelines that accompanied the publication of the Planning and Development (Strategic Infrastructure) Act 2006 is attached under Appendix B.

Community Gain

Section 37G of the 2006 Planning and Development (Strategic Infrastructure) Act allows An Bord Pleanála to attach conditions requiring the "construction of financing, in whole or in part of the construction of a facility, or the provision or the financing, in whole or in part, of the provision of a

service..." in the area where the development is situated, provided it would constitute a substantial gain to the community. The Planning Authority has no objection to a condition being attached in relation to community gain.

In this regard it is noted that the applicant has indicated willingness to contribute in this way and has outlined that for every Megawatt hour (MWh) of energy produced by the windfarm, the project will contribute €2 into a community benefit fund for the RESS period i.e. the first 15 years of operation. In addition to the RESS commitment the developer proposes voluntarily to continue this payment for the remaining lifetime of the wind farm at a rate of €1 per MWh. It is calculated that the community benefit fund for the proposed Ballinagree Wind Farm has potential to deliver over €600,000 per year to the local community for the first 15 years of operations following the commissioning of the project, and over €300,000 per year for the remaining lifetime of the project.

It is recommended to the Board that should it decide to grant permission for the proposed development, a condition should be attached clearly detailing the structure, particulars and procedures under which funding and grants are to be administered and implemented.

General Development Contributions

General contribution applies in respect of the proposed buildings on site control room (420 m^2) and IPP building (210.1 m^2). General contributions shall be levied at a rate of €16.32 per sqm. The total general contributions due to Cork County Council would be calculated as: 630.1m^2 x €16.32 = €10, 283.23

Special Development Contribution

Many of the roads on the approaches to the proposed windfarm are in poor structural condition requiring extensive rehabilitation. To address this the Area Engineer recommendation seeks a Special Contribution towards works on the local road network as follows:

- L-2750-0: 3800m of surfacing in 2020 and 2021: Total cost €234200: Recoup 25% of this cost = **€58,550**
- L-7461: 1000m of strengthening planned: Total cost €80,000: Recoup 25% of this cost = **€20,000**
- L-3418: 2000m of resealing complete: Total cost €50,000: Recoup 25% of this cost = **€12,500**
- L-7473-0: 800m of strengthening planned: Total cost €64,000: Recoup 25% of this cost = **€16,000**

- L-1123-0: 6020m of strengthening/surfacing: Total cost €602,000: Recoup 25% of this cost = **€150,500**
- ***Total suggested contribution = €257,500***

Bond

It is recommended by the Area Engineer that the developer provide a bond to Cork County Council to the Value of €300,000 to ensure satisfactory reinstatement of any public roads that may be damaged by the development.

Thomas Watt
Senior Planner
23rd March 2022

~~Mr Tim Lucey~~
~~Chief Executive~~
~~23rd March 2022~~
Acting CE
6th April

Appendix A: Suggested Conditions

Ecology

No.	Condition	Reason
1	Turbines 2, 3, 13 and 17, and their associated connection tracks, hardstanding areas etc shall be omitted from the proposed scheme.	In the interests of minimising negative impacts on habitats and species of high biodiversity value within the site.
2	Turbines within 500m of active or historical Hen Harrier nesting sites and their associated connection tracks, hard standing areas etc. shall be omitted from the proposed scheme. Revised drawings showing compliance with this requirement shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.	In the interests of minimizing negative impacts on species of high biodiversity value within the site.
3	Prior to the commencement of development, an Ecological Protection Plan shall be submitted to, and agreed in writing with, the planning authority. The Plan shall include the following: a) Development of a habitat's protection plan for the overall site. b) Specific proposals to deal with the Hen Harrier, Golden Plover, Bats and Badger during the construction and operational phases. c) Ongoing monitoring of the conservation status of protected habitats and species within the site. The developer shall review usage by protected species, with a focus on birds and bats, of the wind farm site and document any casualties through the monitoring programme. An annual report on the ecological monitoring shall be submitted to the planning authority including for seven years post commissioning of the project.	To protect the ecological value of the site.
4	Prior to the commencement of development, the applicants shall submit a Conservation and Habitat Management Plan for the site. This should be based on revised design of the proposal. The plan shall provide details and programmes for the implementation of all habitat management / enhancement proposals required to mitigate / compensate for the loss of or damage to habitats of biodiversity value, including habitats of value to Hen Harrier and Golden Plover. The plan shall include a map identifying the areas to be managed and shall also provide detailed information in	To minimise impacts on habitats and species of biodiversity value within the site.

	relation to the measures to be implemented to achieve this. The plan shall also include a timeline for implementation of described measures and shall provide for ecological monitoring of management/enhancement works to examine the effectiveness of the proposal. The plan shall be prepared by a suitably qualified ecologist.	
5	Prior to construction works being carried out between March and August, a survey for breeding Hen Harriers shall be carried out by a suitably qualified ornithologist. The survey shall cover the area within a boundary of 500m of the works to be carried out during the above period. No construction works shall be carried out during the above period within 500m of a presenting breeding site and / or nest without the consent in writing of the planning authority.	To avoid disturbance to breeding Hen Harrier, a species listed in Annex I of the EU Birds Directive.
6	A survey for breeding sites and resting places of protected terrestrial species, in particular Bats (all roost types), Otter, Badger, Red Squirrel and Pine Marten, will be carried out prior to construction works commencing. If these features are found, then appropriate mitigation measures shall be submitted to and agreed in writing with the planning authority, prior to commencement of development. Any mitigation measures in relation to otter or bat populations shall be carried out only under licence from the National Parks and Wildlife Service and details of any such licence shall be copied to the planning authority.	In the interest of wildlife protection.

Area Engineer

Cable Route:

- All roads where the cable route is installed shall receive full road width regulating and resurfacing. Surface dressing alone will not suffice. The resurfacing type shall match existing surfaces.
- All surface water culverts crossed or exposed during cable trench excavation shall be mapped and notified in writing weekly to the Planning Authority as cable trench excavations proceed.
- All surface water culverts crossed by the trench excavation works are to be replaced in full across their entire length unless otherwise agreed. HDPE twin wall pipe of equivalent area or bigger with a minimum size of 225mm shall be used unless otherwise agreed with the Planning Authority.
- Before cable trench works commence all water tables along the route are to be photographed and mapped. These must be submitted to the Planning Authority.
- No cable infrastructure shall be affixed to any bridge or culvert structure.

- All cable infrastructure shall pass beneath surface water culverts.
- Any road level increase adjacent to parapet walls or retaining walls as a result of the works shall require all such elements raised to the appropriate standard.
- At Horsemount Cross, Coppeleen Bawn Cross, Awboy Bridge, Bawnmore Cross, Clonavrick Bridge, specific proposals in relation to line of trenching works, location of directional drill pits, receptor pits, and reinstatement to be agreed with the Planning Authority, before excavations commence.
- Specific locations of joint bay locations are to be agreed on site with the Planning Authority. Final level of joint bay must match existing road levels.
- The contractor must maintain any temporary trench surface at all times and provide a 24hr phone contact to the Planning Authority for this purpose.
- The contractor must maintain any diversion routes proposed to facilitate the works. Hedgecutting works must be carried out and passing bays must be provided if so, directed by the Planning Authority. The cost of all such work will be borne by the contractor.
- If directed by the Planning Authority a road condition survey shall be carried out on any diversion route before it is used as such. The contractor shall carry out repair work as directed by the Planning Authority to ensure that the diversion route is fit for purpose. The contractor shall maintain the diversion route for the duration of the diversion. Once the diversion is complete the route shall be repaired to its original condition or better as agreed with the Planning Authority.

Delivery Route for Turbines:

- Turbine Delivery Contractor to contact the Planning Authority before any accommodation works necessary for the turbine delivery in the Mallow area are carried out.
- The section of the public road L-7461-0 from its junction with the L-2750 as far as Access Point 1 shall be widened and resurfaced prior to turbine delivery. This work shall be agreed with the Planning Authority before works commence.
- The developer shall liaise with Office of Public Works and shall apply for any necessary legal consents required to replace the bridge structure at WF-HF8.
- No turbine components shall be delivered through Access Points 3 or 4.

Borrow Pits:

- At Access Point 4 the contractor shall provide a suitably surfaced crossing point before haulage of material from the Borrow Pit commences. The surface shall be either concrete or Hot Rolled Asphalt finish and shall be such that minimal maintenance is required. At completion of the works the surface shall reinstated as directed by the Planning Authority.
- At all times while construction traffic is using Access Point 4 the contractor shall ensure that traffic control is provided at all times for motorists, pedestrians, and cyclists.

Road Condition Survey:

- Prior to construction commencing the developer shall carry out a full road condition survey on the public roads from Millstreet Town to Access Point 4. This survey shall include PSCI, IRI and Video. The results shall be submitted to the Planning Authority prior to the works commencing.

Within three months of project completion the developer shall submit a post road condition survey on the same route. The contractor, on direction from the Planning Authority, will carry out works on the route in question to ensure that the roads, post completion of the development, are in the same or better condition.

Prohibited Roads for Construction Traffic

- No construction traffic shall be allowed on public roads:
- L-7464-0, L-34192-0, L-7463-0, L-34183-0, L-34182-0 (except at northern end), L-34181-0, L-7461-44(south of the site boundary), L-5245-26,
- L-3418 between Coppeleen Bawn Cross and Annaganihy Cross.

Environment Department (surface water and ground water)

No.	Condition	Reason
1	The construction of the development shall be managed in accordance with a Construction & Environmental Management Plan, which shall be submitted to, and agreed in writing with the Planning Authority prior to commencement of development. This plan shall include a detailed Surface Water Management Plan.	In the interests of environmental protection.
2	During the construction phase operations on site shall be carried out in such a manner that no polluting material, rubble, waste material or contaminated surface water enters any adjacent watercourses or public roadway around the site. No burning of waste material shall take place on site.	In the interests of environmental protection.
3	All watercourses in or adjacent to the works area shall be monitored on a daily basis by the Environmental Clerk of Works, or designate, to ensure they are not being impacted by silt/sediment laden storm water run-off from works area. A record of this monitoring shall be maintained on site.	To protect surface water quality.
4	All over ground tanks containing hydrocarbons shall be contained in a waterproof bunded area, the capacity of the bund is to be the greater of the following; 110% of the largest tank size or 25% of total volume stored in the bunded area. All valves on the tank shall be contained within the	In the interests of environmental protection

	bunded area. The bunded area shall be fitted with a locking valve that shall be opened only to discharge storm water. The developer shall ensure that this valve is locked at all times.	
5	Hydrocarbon spill kits shall be in place on all site vehicles/plant. Suitable interceptor drip trays shall be used when refuelling vehicles/plant & when vehicles/plant are parked. No servicing of vehicles/plant shall be carried out on site.	To prevent water pollution
6	All drainage and sediment /silt traps shall be in place before any other works are undertaken on the site. All work shall be carried out in favourable weather conditions to minimise the generation of silt & fines.	To prevent water pollution.
7	Silt fencing shall be constructed to protect watercourses on site from run-off of silt laden water prior to commencement of development. These silt fences shall be maintained as required during the construction phase, & on an ongoing basis, until the site is fully vegetated & the risk of silt run-off is minimised.	To protect water quality.
8	The service roads shall be cambered to deflect surface water to the adjoining lands for attenuation. Service roads shall not discharge directly to open drains on site.	To prevent water pollution.
9	Instream works shall only take place during the period July to September. All instream works shall take place in written agreement with the IFI.	In the interests of environmental protection.

Environment (Air, Noise and Vibration)

1. The relative rated wind turbine noise levels (LArated,10 min) arising from the development, by itself or in combination with any other permitted wind energy development in the vicinity, shall not exceed:

   (A) Where background noise levels (L9010 min ≥ 30 dB(A))

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

(ii) 43 dB(A) L90 10 mins

(B) Where background noise levels (L9010 min < 30 dB(A)

(ii) 37 dB(A) L90 10 mins

when measured externally at noise sensitive locations.

Reason: In the interest of residential amenity.

2. A noise compliance monitoring programme shall be submitted for agreement with the planning authority within 3 months of the commissioning of the development. All results should be submitted to the Planning Authority within 1 month of the completion of any survey. The developer shall carry out any additional noise mitigation measures as may be deemed necessary following a review of such survey.

   Reason: In the interest of residential amenity.

3. A designated member of the company's staff shall interface with the Planning Authority or member of the public in the event of complaints or queries in relation to environmental emissions. Details of the name and contact details and the relationship to the operator of this person shall be available at all times to the Planning Authority on request whether requested in writing or by a member of staff of the Planning Authority at the site.

   Reason: In the interest of residential amenity.

4. The construction of the development shall be managed in accordance with a Construction Environmental Management Plan which shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of development. In relation to air and noise, this plan shall provide details of the construction practice for the development including;
   a. Proposals for the suppression of on-site noise
   b. Proposals for the suppression of dust on site
   c. Proposals for the suppression of any vibration
   d. Proposals to minimise any odours.

   This plan shall include a comprehensive monitoring plan to include inter alia noise and dust with regular reporting to the planning authority.

5. **Reason:** In order to protest the Environment and Local amenities during construction.

Appendix B

Suggested items of Further Information

1. The assessment of the proposal has identified concerns in relation to the potential impacts and effects that the proposed windfarm development will have on populations of a number of species recorded at the site with particular reference to Hen Harrier and Golden Plover and to a lesser extent Bats and Badger within the locality and their ability to maintain viable populations. It is considered that additional information is required which takes into consideration a number of direct, indirect, and cumulative impacts to complete both Appropriate Assessment and Environmental Impact Assessment of this proposal. The following information would be required:

- A more detailed assessment in respect of potential impact of loss of foraging habitat and a reduction in prey availability to breeding and wintering Hen Harrier in the area through direct, indirect, and cumulative effects. This should be informed by a foraging habitat analysis.
- A more detailed assessment in respect of collision risk analysis (for all avian species of conservation concern) and displacement of Hen Harrier given the known historic and current use of the site and surrounding landscape by both breeding and foraging Hen Harrier.
- A more detailed assessment in respect of potential loss (direct and indirect) of staging habitat for Golden Plover given what is proposed in-combination with the large concentration of existing wind turbines in an area.
- A more detailed assessment regarding the potential displacement of Golden Plover from migratory routes i.e. the barrier effect, and subsequent reduction in foraging and roosting time and additional energy expenditure from increased flight times etc.
- A detailed assessment in respect of avian species of conservation concern recorded at the site such as Kestrel from both a construction and operational standpoint.
- A more detailed assessment in respect of potential disturbance / displacement impacts on Hen Harrier, Golden Plover and other avian and faunal species which would be generated during the post construction phase by the proposed amenity trails.
- A revised impact assessment having regard to the core sustenance zone (CSZ) of bat species identified as occurring within the site and the potential impact of loss of habitat, reduction in prey abundance, collision risk and the potential for colony collapse. Cumulative impacts should also be addressed. The revised assessment should also confirm whether the mitigation measures proposed are sufficient to ensure the avoidance of significant effects on any potentially vulnerable species and their resting place. The mitigation measures should have cognisance to the resilience and conservation status of bat roosts.
- A revised impact assessment on the short to long term impacts on badger social group(s) recorded within the site and immediate vicinity of the site. This assessment should be informed by quantifying the loss of badger territory/habitat associated with each social group.

2. Furthermore, it is considered that layout should be revised to omit 4 no turbines (T2, T3, T13 & T17) at a minimum to ensure the avoidance of impacts on upland peatland habitats of biodiversity value. Additional turbines may need to be omitted on completion of impact assessment in relation to species such as Hen Harrier and Golden Plover.

3. Turbine T-09 and part of the site access track appears to be shown on or adjacent to Public Road L-34182-0. Please confirm that this is not the case.

4. In the context of dust nuisance/soiling impacts on receiving receptors that may have the potential to arise during the construction phase, it should be clarified by the developer if it is proposed or if any background dust monitoring has been conducted in the vicinity of the proposed development. This

could be used to quantify the existing Environment and as a baseline for any future monitoring undertaken to support and evaluate the effectiveness of the proposed mitigation measures.

5. A noise contour map detailing the study area relative to the proposed turbines. In addition, the respective locations and distances of all noise sensitive receptors within 500m, 1000m,1500m and 2000m of the turbines should be presented and quantified, with all occupied, unoccupied and permitted dwellings identified. Dwellings that have a specific interest in the project and are associated with it should also be highlighted. For the purpose of completion the number of receptors that were identified as farm buildings or unoccupied derelict buildings and were not considered as part of the impact assessment and not assessed against the derived daytime and night time noise levels should also be quantified and indicated

6. The referenced noise sensitive receptors that each background noise monitoring location is considered to be representative off should be quantified and also shown on a suitably scaled map. A clear trail should be presented and evident between the selected background noise monitoring locations, the clusters of identified sensitive receptors they are deemed to be representative off and the background noise levels for each of the selected noise monitoring locations.

7. The background night-time noise levels and at each of the selected noise monitoring locations should be clarified.

8. In relation to construction noise impact, It is noted as per Table 7.12 in respect of the grid connection works, that in some instances the maximum predicted levels may be above the applied and adopted noise limit of 65 dB LAeq 1 hr. It is submitted that these elevated noise levels will only occur for short durations at a limited number of dwellings. Mitigation is proposed which includes the usage of a temporary barrier or screen in cases where the works are to occur over an extended period. In terms of clarification, the potential number and location of dwellings impacted should be confirmed. Similarly in relation to site traffic as discussed per pg 25 of 67 of the submission, it is noted that '...there is potential for the night criteria as set out in Section 7.3.3.1 to be exceeded at properties within 40m of the road edge..' Again the number of properties potentially impacted should be clarified.

Appendix C- Internal Reports

Ecology Office Report

This report relates to proposals for the development of new 20 turbine windfarm development and all associated site works and considers potential for the proposals to give rise to impacts on sites designated for nature conservation, on habitats of high conservation value, and on protected species, having regard to information which has been provided in the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS).

Cork County Council Ecology Office has reviewed the EIAR, the NIS and all of the supporting ecological survey information which has been provided by the applicants prior to completing this report.

Particular attention is paid in this report to the potential for the development to cause or contribute to impacts on the following:

- Sites designated for nature conservation, in particular Natura 2000 sites.
- Terrestrial and aquatic habitats of conservation value outside designated sites; and
- Impacts on protected flora and fauna, in particular mammal and bird species listed under the Habitats & Birds Directives.

The primary considerations from an ecological perspective in respect of this windfarm are the following:

- Potential for the proposed development to give rise to negative effects on conservation objectives of Natura 2000 sites, in particular the Blackwater River (Cork/Waterford) Special Area of Conservation and the Mullaghanish to Musheramore Mountains Special Protection Area.
- Potential for the proposed development to give rise to negative effects on protected terrestrial mammals and avian species, including and in particular, Hen Harrier, Golden Plover, Badger and Bats.
- Potential for the proposed development to give rise to negative effects on habitats of high natural value, including semi-natural grassland and peatland habitats, and habitats deemed to be a potential critical resource (foraging, commuting and/or breeding habitat) to protected species; and
- Potential for the proposed development to give rise to negative effects freshwater habitats and species, including Salmonids, Lamprey and Freshwater Pearl Mussel.

All impacts / potential impacts of the proposal on habitats and species to be considered of particular concern to this office are discussed further below.

Please note that a full assessment of the potential impacts and effects in relation to certain protected species, namely Hen Harrier, Badger and Bats, cannot be completed as Cork County Council does not have full access to all the relevant data / information referenced within the Environmental Impact Assessment Report.

Brief Project Description

Project Elements: The proposed project development comprises the following.

- Construction of 20 no. wind turbines with a blade tip height range from 179m to 185m, a hub height range from 102.5 to 110.5m and a rotor diameter range from 149m to 155m;
- Construction of turbine foundations and crane pad hardstanding areas including associated drainage infrastructure;

- Construction of new permanent site tracks and associated drainage infrastructure - 14.4 km of new internal access tracks will be required;
- Upgrading of existing tracks and associated drainage infrastructure -11.1 km of internal access tracks will be required to be upgraded as part of the project;
- Upgrade of 2 no. existing forestry and agricultural access junctions for construction and operational access from 1) the Local Roads L2750-0/L1123-62 in the townlands of Finnanfield and Ballynagree East and 2) from the Local Road L7461-0 in the townland of Ballynagree West, Co. Cork;
- Upgrade of 2no. existing forestry access junctions for temporary construction access from the Local Road L7461-17 in the townland of Knocknagappul, Co. Cork;
- Use of 1 no. existing forestry and agricultural access junction for operational access only from the Local Road L-7461-44 in the townland of Knocknagappul, Co. Cork;
- Installation of new permanent watercourse and drain crossings and the reuse and upgrade of existing internal watercourse and drain crossings to include 1) the replacement of an existing stone bridge structure with a new clear span concrete bridge structure along the Local Road L-7461-0 in the townland of Ballynagree West and 2) a new clear span concrete bridge structure along a proposed new track in the townland of Carrigagulla, Co. Cork;
- 3 no. on site borrow pits and associated ancillary drainage within the townlands of Carrigagulla and Knocknagappul, Co. Cork;
- 2 no. Temporary construction site compounds and associated ancillary infrastructure including parking within the townlands of Ballynagree West and Carrigagulla, Co. Cork;
- Use of proposed wind farm access tracks and existing forestry and agricultural tracks as permanent recreational amenity trails for community use including the installation of associated signage and information boards and; the partial reinstatement and re-purposing of the proposed temporary construction compound as a permanent trail head car park and picnic area including associated landscaping within the townland of Ballynagree West. Overall, 15.05 km of tracks will be made available as recreational amenity trails for community use;
- Construction of 1 no. permanent on-site 110kV electrical substation including control buildings, electrical plant and equipment, welfare facilities, carparking, water and wastewater holding tanks, security fencing, lightening protection and telecommunications masts, security cameras, external lighting and, all associated infrastructure within the townland of Ballynagree East, Co. Cork;
- Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works;
- Installation of permanent high voltage 110kV underground electrical and communication cabling between the proposed on-site substation within the townland of Ballynagree East to the boundary of the existing Clashavoon substation within the townland of Aughinida, Co. Cork. The cabling will be laid primarily within the public road in the townlands of Knocknagappul, Ballynagree East, Ballynagree West, Bawnmore, Clonavrick, Derryroe, Rahalisk, Kilberrihert, Caherbaroul and Aughinida, Co. Cork. Associated works including the installation of 15 no. pre-cast joint bays and communication chambers; and horizontal directional drilling under 4 no. watercourse crossings in the townlands of 1) Knocknagappul, 2) Knocknagappul and Rahalisk, 3) Rahalisk and Bawnmore and 4) Bawnmore and Clonavrick;
- Tree felling to accommodate the construction and operation of the proposed development. Area of replant lands has not been specified;

- Erection of 2no. meteorological masts with a height of 100m above existing ground levels for the measuring of metrological conditions within the townlands of Ballynagree East and Carrigagulla, Co. Cork. A lightning rod will extend above the masts by 4 meters;
- Temporary accommodation works at 6 no. locations adjacent to the public roads to facilitate delivery of turbine components to site within the townlands of Dromagh, Dromskehy, Liscahane, Tullig, Drominahilla, Finnanfield and Ballynagree East, Co. Cork. These works will primarily relate to trimming of trees and hedgerows, temporary lowering of boundary walls, temporary removal of boundary walls, temporary ground reprofiling and installation of temporary stone hard standing;
- Installation of a temporary off-site staging area for turbine components within the curtilage of Drishane Castle which is a Recorded Protected Structure (00319) and National Monument (296), within the townland of Drishane More. The works will include removal of a masonry wall and installation of temporary stone hard standing area and associated access track and entrances to and from the public road R583;
- All related site works and ancillary development including landscaping and drainage.

The associated grid connection route (GCR) will consist entirely of underground cable and is proposed to connect the on-site substation to an existing 110 / 220kV substation at Clashavoon, within the townland of Aughinida, Co. Cork. The proposed GCR is ca.11.4km in length, with ca. 9.4km proposed to be constructed within the existing road corridor.

It is proposed that large components associated with the wind farm construction will be transported to site via the Port of Foynes and includes the N69 towards Limerick, the M7, the N21, south along the N20 through the towns of Charleville and Buttevant before turning West onto the N72 at Mallow, the R583 towards Millstreet before turning onto the L2758 to the proposed wind farm site.

Project Timeline: A ten-year consent is being requested for this development. The proposed construction duration of proposal is estimated to be 18-24 months, with a 35-year lifetime of the operational life from the date of commissioning of the entire wind farm.

Management Plans: A Construction and Environmental Management Plan (CEMP) has been provided as part of the proposal which incorporates a number of outline management plans including a Soil Management Plan and Surface Water Management Plan.

A Biodiversity Enhancement Management Plan (BEMP) has also been prepared to outline a set of land management prescriptions (commitments and monitoring) as part of the proposed Ballinagree Wind Farm Project. Four private landowners with a combined total of c. 304 ha of lands in the vicinity of the wind farm, but beyond 250m of any proposed turbine, have agreed to a long-term commitment to detailed land management measures designed to maintain and enhance local biodiversity. In addition, Coillte, a 50% stakeholder in Future Energy Ireland, has undertaken to create wildlife corridors through strategic tree-felling between areas of upland habitat in the vicinity of the proposed wind farm area. The measures include those designed to protect watercourses, prevent overgrazing and to clear invasive and site inappropriate plants.

The plan when implemented will see a considerable length of new hedgerow (>15km) established. It will also involve the establishment of several hectares of native woodland and the establishment and maintenance of c.20ha of wild bird cover.

The overall objectives of this plan are manifold but may be summarised as follows:

- To improve the ecological connectivity between patches of attractive habitat in the wider area;
- To significantly increase the amount and quality of hedgerow across a number of landholdings;
- To establish a number of high resource value habitats including the hedgerows, small areas of native woodland and wild bird cover across the BEMP lands;
- To commit to biodiversity friendly farming practices through control of stocking densities, minimising the use of herbicides and pesticides and to protect watercourses from livestock;
- To erect and maintain bird and bat boxes and night roosts for Lesser Horseshoe Bats; and
- Monitoring of local biodiversity and the implementation of the biodiversity prescriptions through the lifetime of the wind farm.

The programme is stated to run for the lifetime of the windfarm and many of the proposed features (e.g. tree and hedgerow planting) will have a longer-lasting biodiversity benefit to the lands included in this plan.

It is stated that with the implementation of the BEMP there will be a predictable local gain for biodiversity in the area and the residual terrestrial biodiversity impacts are considered to be likely significant positive at the local level in the long-term.

Site Description: The proposed wind farm site is located in County Cork, approximately 35km north west of Cork City. The project is located along the southern slope of the Boggeragh Mountains, approximately 8km south east of Millstreet and approximately 10km north of Macroom. The total study area of the proposed wind farm site assessed is 1,932.5 hectares.

Located in close proximity to the proposal site i.e. approximately 500m from the closest proposed turbine and 0m from the proposed grid connection is the Mullaghanish to Musheramore Mountains Special Protection Area. This designated site is of significant ecological value for the presence of the breeding Annex I species Hen Harrier, with the area around the proposed development site known to be of high importance for Hen Harrier. Furthermore, located north of the site is the Boggeragh Mountains Natural Heritage Area which consists primarily of upland blanket bog habitat and is utilised by the Annex I species Golden Plover. A small section of the proposal site overlaps with the boundary of the NHA.

The site is located in a predominantly agricultural area which is dominated by pasture, conifer plantations and existing windfarm developments. Pockets of recently felled conifer woodland, heath and scrub occur across the site. Pockets of upland peat bog are present in the northern part of the site. The elevation range of the overall wind farm site varies between approximately 640 mOD and 210m OD, and it has a mountainous topography. Turbines will be installed in the range between approximately 460m OD and 255 mOD. The Boggeragh Wind Farm which consists of 39 turbines is located directly to the north of the site with a number of other windfarms occurring in the surrounding area. Cork County Council Wind Energy Policy for the site is that of 'Open to Consideration'.

The main hydrology features within the wind farm site are the Laney River, Nadanuller Beg and its tributaries. The River Laney is the most significant watercourse draining the wind farm site. The northern eastern part of the windfarm site drains ultimately into the Nadanuller Beg Stream which forms Blackwater River (Cork/Waterford) Special Area of Conservation approximately 3.6km northeast of the site

The subsoils present within the development site and wider study area comprise; Till derived from Devonian sandstones (TDSs), Bedrock outcrop or sub-crop (Rck), Blanket peat (BktPt) and Alluvium

(A), with the majority of turbine locations and associated infrastructure located within areas classified as Till derived from Devonian Sandstones.

It is stated in the EIAR that areas of blanket peat are largely concentrated in the northern part of the wind farm site, with the peat deposits ranging from 0.2 to 3m across the site.

Natura Impact Statement (Summary): A total of fourteen European sites were considered within the potential Zone of Influence (ZOI) of the proposed development, namely;

1. Mullaghanish to Musheramore Mountains SPA (004162);
2. Blackwater River (Cork/Waterford) SAC (Site Code 002170);
3. The Gearagh SAC (000108);
4. The Gearagh SPA (004109);
5. Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (000365);
6. Mullaghanish Bog SAC (001890);
7. St. Gobnet's Wood SAC (000106);
8. Lower River Shannon SAC (002165);
9. Curraghchase Woods SAC (000174);
10. Askeaton Fen Complex SAC (002279);
11. Barrigone SAC (000432);
12. River Shannon and River Fergus Estuaries SPA (004077);
13. Cork Harbour SPA (Site Code 004030);
14. Great Island Channel SAC (Site Code 001058).

The NIS identified that the works and activities associated with the construction and/or operation phase of the proposal have the potential to significantly affect three European sites. These European sites are:

1. Mullaghanish to Musheramore Mountains SPA (004162);
2. Blackwater River (Cork/Waterford) SAC (Site Code 002170);
3. The Gearagh SPA (004109).

Potential Impacts Identified: Although the proposed development is not located within the boundary of any European site, its construction and operational phase could potentially affect hydrologically connected riverine habitats that support the European sites Qualifying Interests (QIs) and /or Species of Conservation Interests (SCIs), through the decrease of river water quality. Additionally, a potential pathway for indirect effects were identified in the form of disturbance/ displacement and direct effect through collision risk to qualifying bird species, namely; Hen Harrier and Mallard. The main potential effects identified are as follows;

- Land-take / Excavations of the site and BEMP
- Physical changes to the environment / change in existing environmental pressures
- Emissions to air (dust)
- Noise emissions
- Emissions to water
- Waste emissions
- Duration of construction, operation, decommissioning
- In-combination.

The potential for adverse effects on Hen Harrier the qualifying interest of the Mullaghanish to Musheramore Mountains SPA has been ruled out due to low level of occurrence, lack of recording

breeding sites within 2km, lack of regular Hen Harrier flightpaths recorded within the site and low level of collision risk.

In respect of Mallard, a qualifying interest of the Gearagh SPA, the potential for adverse effects on this species has been excluded given the lack of significant foraging, loafing or roosting features recorded within the site.

Mitigation measures proposed to avoid/manage impacts: The NIS includes details of measures and procedures to be implemented on site to provide for the protection of water quality and prevent the release of sediment and toxic contaminants during construction. Specific details of surface water management mitigation measures for the proposal has been detailed in the CEMP and its associated management plans.

Examples of proposed mitigation measures detailed within the NIS include;

- A self-imposed buffer zone of 50m will be maintained for all watercourses with the exception of existing road upgrades and stream crossings.
- Biological sampling (SSRS or Q sampling as applicable) and physico-chemical sampling will be carried out at the established baseline sampling points. Commencement will occur prior to construction to provide an updated baseline and will continue for the duration of the construction and operational phases of the project.
- Silt traps and silt fencing measures for the proposed wind farm site are provided at outfalls from roadside swales to silting ponds, at the end of the drainage channels, at the outside of the tree felling buffer zone and strategically placed down-gradient within forestry drains near streams. The traps and fences will be maintained regularly ensuring that they are clear of sediment build-up and are not severely eroded.
- Settlement ponds as detailed in the surface water management plan within the CEMP, will be put in place in advance of works as construction progresses across the site. The settlement ponds have a diffuse outflow and will mitigate any increase in surface water runoff and treat suspended solids in the surface water runoff. This will prevent sediment reaching the waterways within the catchment of the main wind farm site.
- Silt Protection Controls (SPCs) are proposed at the location of the drain crossings. The SPCs will consist of a minimum of silt traps containing filter stone and filter material staked across the width of the swales and upstream of the outfall to any watercourse.

NIS Conclusion: The conclusions of the NIS states the likely significance of all potential impacts arising from the proposed project on the integrity of the relevant European sites is as follows;

'In the light of the conclusions of the assessment which it shall conduct on the implications for the European sites concerned, the competent authority is enabled to ascertain that the proposed project will not adversely affect the integrity of any European site.'

Environmental Impact Assessment Report Biodiversity Chapters (Summary): Desktop survey and field survey methods are described and the results of data gathering, and survey work are provided within Chapter 8 Biodiversity of the EIAR. The chapter includes an assessment of the potential for the proposed project to impact negatively on sites designated or proposed to be designated for nature conservation, on protected species and on habitats of high natural value.

Potential for the development to give rise to impacts on designated nature conservation sites: Potential negative indirect impacts on European designated sites due to their connectivity e.g. hydrological, have been addressed in the submitted NIS. In relation to potential impacts on pNHAs/NHAs, while it is noted that 16.3Ha of the Boggeragh Mountains NHA (002447) extends into the proposed development planning boundary, in the north-west part of the site and part of the underground cabling will be located within the NHA, as this works required to facilitate the cable will involve the burying of cable and associated resurfacing within the existing road corridor there will be no direct impact upon the habitats for which the NHA is designated.

Potential for the development to give rise to negative impacts on terrestrial habitats and protected plant species: As per the EIAR, the dominant habitat types associated with the proposal footprint are Commercial Conifer Plantation WD4, Improved Agricultural Grassland GA1, Semi-natural to semi-improved Wet Grassland GS4 (incl. Wet Grassland/Poor Fen and Flush GS4/PF2), Wet Heath and Cutover bog HH3/PB4 Mosaic, Wet Heath HH3 and Buildings and Artificial Surfaces BL3. These habitats are assessed in the EIAR to be of low local to higher local ecological importance due to their botanical diversity.

16 of the 20 proposed turbines and associated access tracks are proposed to be located within conifer plantation (WD4) of mixed ages and rotations, as well as improved agricultural grassland (GA1). The remaining 4 proposed turbines are proposed to be located in other habitat types i.e. T2 is proposed to be located in wet/acidic grassland GS3/GS4, T3 is proposed to be located in degraded dry heath HH3 and T13 & T17 are proposed to be located in cutover bog/wet heath mosaic habitat HH3/PB4. It is stated that these turbine locations have been micro-sited to avoid high value Annex I habitat.

Two habitats listed on Annex I of the EU Habitats Directive: northern Atlantic wet heaths with *Erica tetralix* (4010) and European dry heath (4030) are present within the study area boundary, however they are located outside proposed development footprint. No Flora Protection Order (FPO) species or Red List Floral species have been described within the EIAR as occurring within the proposed development site. It is stated that the botanical species recorded at the site are considered typical of the habitats present within the study area, with such habitats also common in the wider environment.

Per the EIAR the direct impacts upon habitats within the proposed windfarm layout will be largely confined to habitats of commercial conifer plantation (WD4) and improved agricultural grassland (GA1). The permanent loss of sections of such habitats, which are of Local importance (Lower value), as a result of the proposed project are assessed to be neutral - imperceptible impact at the local scale. It is stated that the proposed windfarm development will also require the removal of smaller sections of partially degraded semi-natural habitats considered to be of higher local importance i.e. Semi-natural to semi-improved Wet Grassland GS4 (incl. Wet Grassland/Poor Fen and Flush GS4/PF2), Wet Heath and Cutover bog HH3/PB4 Mosaic and Wet Heath HH3. The removal of these semi-natural habitats are assessed to be likely to have a long-term significant negative impact at the local scale due to permanent loss of a habitat type that is of Local Importance (higher value). Furthermore, indirect negative effects through impact on drainage patterns and the hydrological functionality of adjacent peatland and heathland habitats, in particular T17, T12 and T02, which could cause indirect habitat loss are also identified. Such impacts are considered to be indirect and would affect habitats of higher local importance to National Importance, contributing to a significant negative impact at the local scale.

Third Schedule non-native high risk species encountered within the study area during the site surveys include Japanese knotweed (*Fallopia japonica*) and Rhododendron (*Rhododendron ponticum*). The Knotweed stands were not in the construction footprint of the windfarm, along the grid connection route or at POIs? requiring work along the turbine delivery route. The potential impact from the spread of invasive alien plant species during the project construction phase is considered to be long

term significant negative at the local scale and could impact in-situ and adjacent habitats such as conifer woodland, high quality and degraded peatland and heathland habitats. Given the location of the site with hydrological connections and proximity to Natura 2000 sites, the potential impact from the spread of non-native invasive plant species is assessed to have the potential to lead to significant negative impact at the local to international scale.

Potential operational and decommissioning stage impacts on habitats have been evaluated as being imperceptible.

Potential for the development to give rise to negative impacts on Bats: General active surveys and static surveys were completed for the site, as detailed within the EIAR. The information submitted indicates that area is used by a number of bat species, with bat activity overall at the site being assessed as moderate. The most-abundant species in all cases was Common pipistrelle with lesser numbers of Soprano pipistrelle, Leisler's Bat and Brown Long-eared Bat. Recordings of Whiskered Bat, Daubenton's Bat, Natterer's Bat, Lesser Horseshoe Bat and Myotis species were also recorded.

One confirmed bat roost was located in an old farmhouse where an emergence survey in June 2018 recorded several Pipistrelles (both Common & Soprano Pipistrelle) departing from the roof-space around dusk. This roost is not located within the footprint of the proposed windfarm infrastructure, with the nearest proposed turbine (T10) located ca. 700m south-west of the roost. Per the EIAR, potential indirect impacts may occur to the bat species associated with this roost due to loss of foraging and commuting habitat. However, it is stated that this is unlikely to be a significant effect, given the extent of habitat loss that will be required to construct the wind farm, as well as the nature and extent of these habitats.

The EIAR, further notes that given the number of suitable features in the area, in particular some old farm buildings at the south of the study area and towards Ballinagree village, it is highly likely that there are a number of unrecorded bat roosts in the wider area. Mitigation measures will be applied to minimise the potential impacts on bats associated with construction related disturbance on any individual bats or small groups of bats may roost in trees or existing structures within the study area.

The site is noted to contain extensive conifer woodland blocks that have potential to support bats, particularly as foraging and commuting habitats. These areas have been considered to be of moderate to high value, local importance for bats, particularly in their capacity to provide large, contiguous foraging and commuting habitat. Construction phase activities will result in the loss of c. 88ha of commercial conifer plantation, to facilitate turbine footprint, hard standing and access tracks, and associated infrastructure. The impact of this loss will be to reduce foraging and commuting habitat for bats locally. It is stated that proposed roadways through existing forestry will continue to provide some additional foraging and commuting opportunities for most bat species throughout the operational phase.

Potential impacts on bats, in the absence of mitigation during construction of the proposed new wind farm are assessed to be slight to moderate negative short-term impacts at the local scale.

As stated within the EIAR, considering the moderate levels of bat activity throughout the site, there is a 'Moderate' autumn, and 'Moderate to High' in spring and summer collision risk to Common pipistrelle and a lesser extent to both Leisler's Bat and Soprano pipistrelle. Mitigation measures have been proposed to reduce the potential risk.

Potential for the development to give rise to negative impacts on Terrestrial Mammals: Several terrestrial (non-volant) mammals were identified within the study area during surveys. Of particular interest are the following species:

- Badger – Badger setts were recorded during the site surveys (exact locations treated as confidential) along with a number of latrines and tracks, with the report making reference to two potential social groups within the study area. Per the chapter, while Badger was confirmed to breed in the southern part of the study area, no setts were located within 50m of any proposed wind farm infrastructure. It is stated within the report that while the improved agricultural grassland may be of foraging potential to Badger, this habitat is widespread at the study area and wider area and the loss of small areas of this modified habitat is not expected to have any negative impacts on the local Badger population.

  In relation to displacement of Badger from the direct loss of habitat, the EIAR states that there are extensive areas of similar suitable habitat in the vicinity of the site and affected or disturbed individuals may move into the surrounding area. As such any displacement or disturbance that may occur is likely to be highly localised, both temporally and spatially.

  During construction the EIAR notes that it is possible that the increase in site traffic might lead to an increase risk of road casualties of Badgers and other mammals occurring in the area. However, it is stated that given the bulk of construction traffic and movement of machinery and personnel will occur during daylight hours and the relatively low site speed limits which will be imposed the risk of any significant increase in fatalities of Badger and other mammals is considered insignificant.

- Pine Marten - There were two records of Pine Marten (one direct sighting in July 2017) and one observation of a scat (north of the study area in October 2019).

- Red Squirrel - Red Squirrel were present at 8 of the 35 trail camera deployment locations and were observed on site in clearfell at eastern site boundary. Two individuals were also seen at north end of breeding bird transects, foraging on beech trees.

- Red Deer – Red Deer were recorded at 9 of the 35 camera deployment locations, although there were relatively few records of the species overall (12 registrations only). The distribution of Red Deer records are concentrated within forestry or forest edge but the species was found relatively widely throughout the study area.

There has been no evidence of the presence of Otter *Lutra* recorded in the study area. It is possible that Otters occur on the River Laney on occasion, but no sightings, scats, couches, or holts have been recorded.

As per the EIAR, potential impacts on non-volant mammals from the construction of the proposed wind farm are considered imperceptible neutral overall.

Potential for the development to give rise to negative impacts on Avian Fauna: As per the Chapter 8 Biodiversity, bird surveys completed at the site followed SNH (2017) guidance. In a very broad summary of the field survey results of very highly sensitive species recorded within the EIAR is detailed below.

- Hen Harriers were recorded during all four-breeding season and winter season vantage point surveys, with the number of flight lines recorded per season ranging from 4 to 13 (breeding) and 7 to 11 (winter). During the breeding season surveys, individuals were recorded successfully catching and/or carrying prey on a number of occasions. Male Hen Harrier accounted for the bulk of the flightline activity at the site in both survey seasons, although at least one Ringtail Hen Harrier (female or immature) flightline was recorded each breeding

season with at least two individuals recorded during the wintering seasons. Hen Harriers were generally present in all survey months, with no clear temporal pattern of activity noted. The predominant habitat where Hen Harriers were recorded was heath/bog, conifer plantation and grassland.

No courtship/display behaviour was noted during the VP surveys and it is stated that no nesting activity took place at the study area or within 2km of the study area boundary in any of the survey years. However, two active nest sites were recorded between 2.5 and 5km from the study area boundary, one to the southwest and one to the southeast. The same nest sites were used in all three breeding seasons. An increase in Hen Harrier nesting activity within the 5km hinterland area was confirmed during the 2020 breeding season. A total of five nest sites were recorded, including the two historically used nest sites (2017-2019) and three newly confirmed nest sites.

Relatively regular flightlines were noted in the Dooneen Hill area to the southeast of the site, outside of the terrestrial biodiversity study area boundary in association with a known nest site in the wider area.

Hen Harriers were recorded during all four-winter season vantage point surveys with the number of flightlines ranging from 7 to 11.

Per the EIAR, given that no nest sites are located within 2km of the study area and there were low levels of activity at the site and the proposed turbine locations are not located along regular Hen Harrier flightpaths, the loss of wet grassland/cutover bog/heath habitat associated with four turbines (T2, T3, T13 & T17) and associated access tracks is assessed to be likely to have an imperceptible impact on Hen Harrier. The loss of conifer plantation (including compensatory replanting off site) and improved agricultural grassland as a result of the proposed project, it is expected the proposal will have a neutral impact on Hen Harrier. The potential disturbance impacts on Hen Harrier as a result of the proposed construction works and operational phase of the proposal is stated to be negligible at the proposed project site.

- Golden Plover – This species is a conservation interest of the Boggeragh Mountains NHA and were recorded in all breeding season vantage point survey years apart from summer 2017. However, this species was recorded in March and April only and was therefore considered likely to be commuting between wintering and breeding areas. Golden plover was the most commonly recorded species during the winter VP study, with flocks present throughout the survey period in most survey months. Flock sizes varied from 3 to 200 during the breeding season and from single individuals to 500 birds during the winter period.

  As per the EIAR, the VP survey results indicate that upland bog/heath/wet grassland habitats within the study area are of ecological significance to wintering and migrating Golden Plover. It is stated that the loss/fragmentation of sections of bog/heath/wet grassland within the study area as a result of the proposed project (i.e. turbines T2, T3, T13 & T17 and associated access tracks) will have a slight negative impact on the wintering population of this species given availability of alternative habitat in the wider area. Furthermore, given the alternative habitat located within the surrounding area the impact of displacement on this species has been assessed as temporary slight negative.

  According to the EIAR, previous studies have shown that while there is some evidence that Golden Plover can initially be displaced from the area immediately around an active turbine

following the construction period, populations may become habituated to operational wind farms. It is stated that it is therefore considered likely that Golden Plover will continue to use the wind farm site at Ballinagree post construction, and no significant disturbance/displacement impacts on the local wintering/migrating Golden Plover population are therefore considered likely as a result of the operation of the proposed development.

In relation to collision risk, the assessment provided states that the potential collision impacts on the local Golden Plover population as a result of the operation of the proposed wind farm are considered to be negative but not significant. This is based on available research which shows that Golden Plover are relatively adept at navigating around operational turbines.

- Peregrine Falcon – This species was consistently recorded on the terrestrial biodiversity study area during all breeding and winter survey years, however activity levels were generally low (< 0.5% (winter) and < 0.7% (breeding) of the total survey time 'on-site'). The loss of habitat as a result of the proposal has been assessed as an imperceptible impact on Peregrine Falcon.

- Merlin - Two confirmed Merlin observations took place at the terrestrial biodiversity study area during the four breeding seasons VP studies and Merlin were only recorded 'on-site' during the 2020/2021 winter season. The loss of habitat as a result of the proposal has been assessed as an imperceptible impact on this species.

- Marsh Harrier - A female Marsh Harrier was recorded in May 2019 flying over heath/bog in the northeast of the site. Given the limited recordings of this species, no impact assessment was completed in respect of this species as it is considered that the proposal site is not of ecological significance for the species.

- White-tailed Sea Eagle - A juvenile White-tailed Sea Eagle was recorded flying through the terrestrial biodiversity study area in a south-westerly direction in March 2020. Given the limited recordings of this species, no impact assessment was completed in respect of this species as it is considered that the proposal site is not of ecological significance for the species.

- Red Kite - A single Red Kite was recorded flying through the site in a south-westerly direction in October 2019. Given the limited recordings of this species, no impact assessment was completed in respect of this species as it is considered that the proposal site is not of ecological significance for the species.

- Red Grouse - No Red Grouse responses, signs or sightings were recorded during the dedicated Red Grouse tape-lure field survey completed in late March 2019. This species was, however, confirmed at the terrestrial biodiversity study area during the VP study where a total of 11 sightings were casually noted over the survey period. Red Grouse observations occurred primarily in the winter months between January 2019 and March 2021. It is considered likely that at least one pair of Red Grouse were breeding in the vicinity of VP9 and also near VP10 as pairs of birds were observed in suitable habitat at both locations. However, given the absence of any proposed wind farm infrastructure within known Red Grouse habitat recorded, the proposed project in these areas is considered likely to have an imperceptible impact on this species.

- Whooper Swan - Whooper Swan were recorded at two locations in the wider area of the study area. A flock of 61 individuals were noted at a field >5km south of the study area in early March 2019. A flock of 13 individuals were casually observed flying north over Rylane at a height of > 150m in October 2020 *c.* 4km off-site. Per the EIAR, while in general, large/heavy

species such as swans/geese are more susceptible to collision mortality as they are less maneuverable than other species, no flightlines of protected wildfowl species such as Whooper Swan or Greenland White-fronted Goose were recorded over the study area during the VP surveys and there is no evidence that the site is located on regular commuting or migration route for any such bird species.

A total of six *Red-Listed* species of high conservation concern in Ireland have been recorded at the study area during the dedicated transect/point count surveys or on a casual basis during the four breeding seasons; Grey Wagtail, Kestrel, Meadow Pipit, Redwing, Snipe and Swift. The species with the highest maximum abundance on the transect surveys was Meadow Pipit.

A total of eight *Red-Listed* species of high conservation concern in Ireland have been recorded at the study area during the dedicated transect/point count surveys or on a casual basis during the winter seasons; Grey Wagtail, Kestrel, Meadow Pipit, Redwing, Snipe, Song Thrush, Stock Dove and Woodcock.

Potential for the development to give rise to negative impacts on Marsh Fritillary - Marsh Fritillary larval webs were confirmed at two of the seven areas subject to dedicated survey. At one survey area active larval webs were noted at an overall total of 25 locations along all six transects combined. The number of active webs varied from 1-5 at any one location. At the second survey site, active larval webs were noted at an overall total of two locations along all two transects combined. While one location comprised of one active web, the other comprised of three active webs. Three casual Marsh Fritillary observations were noted from other terrestrial biodiversity surveys.

Per the EIAR, there will be no direct loss of suitable Marsh Fritillary habitat at the study area as a result of the proposed project as the proposed new infrastructure does not overlap with areas of suitable habitat. Potential impacts from the proposed new wind farm are considered imperceptible neutral overall.

Potential for the development to give rise to negative impacts on Reptiles & Amphibians – Both Common Lizard and Common frog were recorded at the site. It is stated that track widening and construction of hard-standing areas and turbine bases could potentially reduce the amount of suitable breeding habitat for Frogs at the site. However, given that this species has been shown to be adaptable (utilising man-made drainage ditches) and relatively tolerant of disturbance, it is predicted therefore, that potential localised disturbance associated with the construction phase, will be offset by the availability of settlement ponds and other drainage features associated with the proposed wind farm infrastructure.

Potential for the development to give rise to negative impacts on Aquatic Habitats & Species - A total of n=40 locations were selected for detailed aquatic assessment, with an additional *n*=5 surveys locations added in June 2021 to reflect the updated site infrastructural layout. A fisheries assessment (including electro-fishing and fisheries habitat appraisal) and white-clawed crayfish survey was undertaken at *n*=35 sites in June-July 2020. A freshwater pearl mussel survey was undertaken on sections of the River Laney and Awboy River in June 2020.

A total of *n*=14 survey locations (36% of total locations) did not support fish at the time of survey (i.e. non-perennial/seasonal channels). Where fish were present, brown trout (*Salmo trutta*) dominated across the survey area, with low abundances of European eel (*Anguilla anguilla*) also recorded. *Lampetra* sp. larvae (ammocoetes) were recorded at a single site only on the Carrigthomas Stream. A single Atlantic salmon (*Salmo salar*) was recorded via electro-fishing on the River Laney at Knocknagappul Bridge.

Based on a desktop review, a total of *n*=6 records for freshwater pearl mussel (*Margaritifera margaritifera*) were available for the River Laney, with multiple records also available for the River Blackwater downstream of Banteer. A single record overlapped with proposed wind farm infrastructure (grid connection route crossing) at Clonavrick Bridge on the River Laney (record from 2007). However, no freshwater pearl mussel or white-clawed crayfish were recorded during the aquatic surveys.

Aquatic vegetation communities representative of the Annex I habitat 'Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation and aquatic mosses [3260]' ('floating river vegetation') were recorded at one site each on the Glen and Awboy Rivers and five sites on the River Laney.

A total of *n*=18 sites achieved ≥Q4 'good status'. Three unnamed River Laney tributaries achieved high status (Q4-5) water quality. Two sites were of Q3 (poor status). Siltation and afforestation pressures (siltation, eutrophication etc.) were evident on numerous watercourses within the survey area which were not achieving good status.

With the exception of a survey site on the Glen River within the Boggeragh Mountains NHA (0002447) which was considered of national importance. None of the other aquatic survey locations were evaluated as being of greater than local importance (higher value). Over half of the sites surveyed in the vicinity of the proposed Ballinagree wind farm (22 of 40, 55% of sites) were evaluated as being of local importance (higher value) in terms of their aquatic ecology. This was primarily due to the presence of overall moderate to good salmonid habitat and the presence of brown trout at the survey sites, in addition to good status (Q4) water quality.

Per the EIAR, the principle impacts from the proposed project on the aquatic environment are expected to occur during the construction phase where access tree felling, track construction, concrete pouring for turbine bases and watercourse crossings are required. Ongoing operational activities including the maintenance of the turbines and infrastructure are considered unlikely to result in significant impacts on the receiving aquatic environment due to more localised footprints and the absence of direct disturbance to habitats.

In relation to tree felling the risk of impact has been assessed as significant negative, short-term and at the local scale in the absence of mitigation given the close proximity of and potential hydrological connectivity of the River Laney, Nadanuller Beg Stream and Glen River and their respective associated tributaries. In the case of freshwater pearl mussels in the downstream connecting Blackwater River SAC (002170), potential impacts are considered as significant negative, permanent and the context of the European site.

With regard to site excavation e.g. borrow pits and turbine bases etc., potential impacts to aquatic ecology resulting from excavations (earthworks) are considered significant negative, short-term and in the local context, in the absence of mitigation. For pearl mussel, potential impacts resulting from site excavations are considered significant negative, permanent in context of the Blackwater River SAC, in the absence of mitigation.

The potential impacts of grid connection installation (both trenching and HDD) to aquatic ecology of the receiving riverine watercourses, in the absence of mitigation, has been assessed as being significant negative, short-term and at the local scale.

Mitigation measures as proposed within the EIAR & CEMP to manage identified impacts include the following:

An appropriately qualified and experienced Ecological/Environmental Clerk of Works (ECoW) will be appointed to monitor the day-to-day construction activity and implementation of the environmental and ecological mitigation measures.

Habitats & Botanical Species - All turbines were sited based to avoid high sensitivity habitats. No removal/clearance of habitats or movement of construction machinery will occur outside of the development works area/footprint during the construction phase, where the works area/footprint will be clearly marked for associated site staff.

Invasive Species - Prior to the development works and landscaping/reinstatement activity begins, a survey by an appropriately experienced ecologist will be carried out to confirm the full extents of the invasive plant species within the proposed development site boundary. The Contractor's will implement an Invasive Species Management Plan (ISMP) for the works.

Aquatic Habitats & Species – During clear felling check dams/silt fences will be required within the on-site drainage channels which provide potential surface water pathways to receiving watercourses. Drains and silt traps will be maintained throughout all felling works, ensuring that they are clear of sediment build-up and are not severely eroded. Brash mats will be used to support vehicles on soft ground, reducing peat and mineral soils erosion and avoiding the formation of rutted areas, in which surface water ponding can occur. Brash mat renewal will take place when they become heavily used and worn. Provision will be made for brash mats along all off-road routes, to protect the soil from compaction and rutting. Where there is risk of severe erosion occurring, extraction will be suspended during periods of high rainfall.

During the grid connection installation via horizontal directional drilling (HDD) an Ecological Clerk of Works (ECoW) will monitor both turbidity and observe the riverbed during the drilling process to detect any leakage (frac-out) of drilling fluid. Should this leakage be observed, works will cease immediately.

Mammals – A pre-construction mammal survey will be carried out immediately before the commencement of vegetation clearance. This will include an active and passive bat survey.

In addition to the creation of buffers between the proposed turbines and surrounding vegetation reduced rotation speed will be implemented when turbines are idling. Automatic 'feathering' of idling blades will be implemented (through SCADA) to reduce rotation speed of blades to below 2 RPM while idling in order to reduce the fatality rates to bats.

An ecologist will supervise/check areas where tree-felling and vegetation removal will occur prior to and during construction. This will ensure that any site-specific issues in relation to wildlife will be highlighted and appropriate mitigation measures (e.g., NRA guidelines) are applied.

Bat activity will be monitored at the site in the year(s) of construction with two active detector night-time surveys between May and October. A passive detector will be deployed at several locations close to the construction footprint for the duration of the construction period to monitor the pattern of bat activity in the area throughout the tree felling and construction period.

During operation, monitoring of bats will be implemented for at least 3 years once the wind farm is operational. Surveys will be conducted from March/April to October/November inclusive, during temperate weather conditions (i.e. air temperatures not lower than 10°C, calm, dry and overcast conditions).

A total of 30 bat boxes (woodcrete and/or recycled plastic) will be erected at suitable locations in the area, with the type of boxes and the deployment locations selected by a suitably qualified ecologist. Bat boxes will be inspected by a suitably qualified ecologist for the first three years of operations of

the wind farm and inspected every other year for the lifetime of the windfarm. Any boxes requiring maintenance or replacement will be identified and removed/replaced under the supervision of an ecologist.

Avifauna – Tree-felling and removal of mature vegetation will be undertaken outside of the bird breeding season (March 1st – August 31st).

Bird activity will be monitored in the year(s) of construction and for three years post construction by a suitably qualified ecologist. Upland breeding bird surveys will be carried out and winter VP surveys will be undertaken with reference to standard methodology (e.g. SNH, 2017, Gilbert et al. 2011). Annual reports will be prepared and submitted for the attention of NPWS and the planning authority.

A fatality monitoring programme will be instigated for the first three years of operation of the wind farm. At least a portion of the fatality searches will be carried out using specially trained cadaver dogs and their handlers. This will involve monthly searches around each turbine base during the winter period (October-March) and three further breeding season (April-August) carcass searches

A total of 30 bird nest boxes (woodcrete and/or recycled plastic) will be erected within the application site during the year of construction with the selection of boxes and suitable deployment locations decided by a suitably qualified ecologist. Bird boxes will be checked and maintained annually for the first three years of operation, and every other year for the lifetime of the wind farm and by a suitably qualified ecologist.

Assessment

It is my view that the primary considerations from an ecological perspective in respect of the Ballinagree windfarm development are the following:

- Potential for the proposed development to give rise to negative effects on designated sites.
- Potential for the proposed development to give rise to negative effects on freshwater habitats and associated species.
- Potential for the proposed development to give rise to negative effects on habitats of high ecological value.
- Potential for the proposed development to give rise to negative effects on populations of protected species including Hen Harrier, Golden Plover, Badger and Bats.

In respect to the first and second points, the proposed works have the potential to pose a significant risk of water pollution, changes to flow regimes and disturbance/displacement of species associated with both the construction and operational phases. Releases of contaminants in surface waters have the potential to directly affect riverine habitats and aquatic species, and to give rise to indirect impacts on other species including Otter and birds.

Regarding designated sites considered within the zone of influence of the proposal and their associated aquatic environments, I note the conclusions of the NIS and the EIAR. I consider that the applicants have submitted enough information to allow the assessment of the possible implications of the proposed development on freshwater habitats and species. While I generally have concerns regarding such a large proposal, with a hydrological connection to watercourses within the highly sensitive catchment of the Blackwater, this office considers that the mitigation measures and procedures to be implemented should provide sufficient protection of water quality and aquatic fauna.

However, while the principle of the mitigation measures proposed look reasonable and sufficient, due to the potential significant risk of increased contamination and/or sedimentation of watercourses located within the highly sensitive Blackwater catchment and those located within the Lee, Cork Harbour and Youghal Bay catchment that are known to be inhabited by sensitive aquatic species such as Freshwater Pearl Mussel and Salmonids, it is recommended that details of environmental monitoring and surface water monitoring programs should be assessed and confirmed by competent person from a technical point of view in terms of specification and design. The specified mitigation measures, monitoring programs and peat stability assessment should be agreed with and resolved prior to a grant of permission. It is advised that due to the hydrological connection of the site to Salmonid habitat and to a lesser extent Freshwater Pearl Mussel habitat, turbidity monitoring should be conducted daily during the construction phase.

Habitats

In respect to third point above, I note that the EIAR states that the loss of high valued habitats on site constitutes a long-term significant negative impact at the local scale due to permanent loss of said habitats. With regard to the loss of these high valued habitats, the EIAR lacks information pertaining to the calculated size of each habitat to be lost, along with extent of any similar habitats occurring within the study area. This detail is critical in order for a reasoned and informed assessment to be made on the potential loss of habitat as a result of the proposal from a site perspective but also from a local one. A map indicating the location of areas of higher value habitat relative to the proposed works should also be provided given the degree of habitats occurring and the varying ecological value of the same. Furthermore, I have concerns that the loss of habitat overall as a result of the proposal may have significant negative direct and indirect implications on populations of Hen Harrier, Golden Plover and potentially Badger and Bats which are found within the locality.

As per the pre-planning advice issued by the Cork County Council Ecology Office, this office recommends that no such development take place on intact peatland habitats and be avoided on degraded peatland habitats or any habitats of high natural value. Taking this into consideration, I recommend that the following Turbines at a minimum be removed from the proposal design:

- T2 - located in wet/acidic grassland GS3/GS4;
- T3 - located in degraded dry heath HH3; and
- T13 & T17 - located in cutover bog/wet heath mosaic habitat HH3/PB4.

Hen Harrier

The proposed development site is located within an upland area of Cork known to support breeding Hen Harrier on a recent and historical basis and individual birds using this area are generally considered to form part of the population of this species which is associated with the Mullaghanish to Musheramore SPA. This population survives in an increasingly afforested area in Cork, which is also subject to considerable windfarm development and agricultural intensification. In relation to afforestation of the area, this means that the breeding population can decline and increase cyclically corresponding to the availability of foraging and nesting habitat (primarily pre-thicket plantations aged less than 10 -12 years). This is demonstrated by the Hen Harrier Project 'Hen Harrier Monitoring 2021 program', which notes that between 2015 - 2019 the population fluctuated between one and two pairs. There was a significant recovery in 2019 when the population increased to five territorial pairs. In 2021 there were three confirmed and one possible breeding pairs of Hen Harrier in the SPA.

Based on information available to the Cork County Council Ecology Office it is known that a considerable proportion of all recent breeding activity for Hen Harrier of the Mullaghanish to Musheramore Mountains SPA took place towards the eastern side of the SPA (both within and outside the SPA boundary) and proximal to the Boggeragh Mountains. Furthermore, based on the information available to the Cork County Council Ecology Office, it would appear that both wind turbines T02 & T03 are located within an area proximal to a known historical nesting site for Hen Harrier. Given the habitats identified as occurring at this general location, it is considered that there is still the potential of this area to be utilised once more by a breeding pair.

As noted within the EIAR, Hen Harriers were recorded during all four-breeding and winter seasons, with no clear temporal pattern of activity noted. Given the foraging behaviour of Hen Harrier, this is to be expected. Typically, Hen Harrier habitat use patterns vary across the breeding season and between female and male birds. Per the EIAR the loss of habitat associated with the proposal is predicted to have an imperceptible impact on Hen Harrier. This assessment was based on the fact that no nest sites are located within 2km of the study area and based on data indicating that 2km is considered the core foraging habitat range for female adult Hen Harrier during the breeding season. However, male Hen Harriers, who are for the most part the primary hunter during the breeding season, can range much further i.e. up to 10km. Given the concentration of nests recorded within 5km of the site and the degree of recordings of male Hen Harrier, it can be assumed that the birds recorded within the development site were part of breeding pairs in the locality.

The idea of a core foraging range of a set distance e.g. 2km is largely based on the idea that prime foraging habitat exists, however, given the degree of afforestation and/or reclamation and degradation of wetland / peatland habitats in the general area of the Boggeragh Mountains, foraging Hen Harrier maybe forced further afield. The availability of alternative suitable foraging habitat (heath, rough grassland) has declined significantly in recent decades in the area and this has resulted in significant pressures on the Hen Harrier population, which as stated within the supporting documentation, the Hen Harrier population in the Mullaghanish to Musheramore Mountains SPA has undergone serious decline in the last 10 years. Additionally, prey availability is an important factor in determining the usage of a site by Hen Harrier. Small birds make up a significant proportion of the Hen Harrier diet during the breeding season. Bird densities have been found to be lower at wind farm sites and particularly lower within 100m of the turbines. Naturally with the clearance of forestry as a result of the proposal will also result in a decrease in densities of prey species associated to these habitats. Open habitat species densities have also been found to be lower at wind farms but was not related to distance from turbines but was negatively related to size of the wind farm. As such I have concerns that the proposal in combination with other driving factors of habitat loss / alteration in the area will negatively impact the carrying capacity of the site and wider area to sustain a population of breeding Hen Harrier along with other competing species e.g. Merlin, Owls and Kestrel.

Taking all of the above into consideration, I have concerns that the assessment provided underestimates potential for impact to Hen Harrier which could be caused by the loss of available foraging habitat proximal to known nest sites. It is recommended that a foraging habitat analysis of the site and wider area should be conducted. This should also factor in the considerable development of wind turbines in the area along with the known displacement range turbines have on harries i.e. available research indicates displacement of foraging (100m) and flight behaviour (250m) close to wind turbines as reported in the literature. Some further report that disruption may occur up to 500m from a turbine.

I have concerns about potential displacement of birds during the operational period as a result of increased human disturbance brought on by the creation of proposed new amenity trails which form part of the application. Naturally in this environment, dog walkers will also likely be present. This form of anthropogenic pressure within the breeding range of the Hen Harrier could have a negative impact on the breeding population associated with both the SPA and local area itself. The increased presence of humans within the area has the potential for disturbance of prospecting Hen Harriers early in the breeding season, disturbance of breeding sites potentially resulting in abandonment, and/or displacement from foraging territories. No assessment of potential impacts of same has been provided in the EIAR or NIS. Consideration may want to be given to requesting additional information in relation to same.

Overall, it is my view that the importance of the site for Hen Harrier, and immediate surrounding landscape, and in turn the predicted significance of impacts on this species has been underestimated. I am of the opinion that there is insufficient information available to complete Appropriate Assessment in respect of the Mullaghanish to Musheramore Mountains Special Protection Area and that additional information is required to complete the assessment in respect of Hen Harrier. Taking this into consideration, an Bord Pleanála may wish to consider requesting additional information in relation to Hen Harrier usage of the site and surrounding area and the likely impacts of the proposed development on Hen Harrier. This information could include the following:

- A more detailed assessment in respect of potential impact of loss of foraging habitat and a reduction in prey availability to breeding and wintering Hen Harrier in the area through direct, indirect and cumulative effects;
- A more detailed assessment in respect of potential disturbance / displacement impacts generated during the post construction phase by the proposed amenity trails.
- A more detailed assessment in respect of collision risk and displacement of Hen Harrier given the large concentration of wind turbines in an area known to be utilised by both breeding and foraging Hen Harrier.

Golden Plover

As with Hen Harrier, the availability of suitable habitat within the surrounding landscape is diminishing. I note that the occurrence of Golden Plover at the site and surrounding land is largely focused on wintering season and as a stopover point on migration. The EIAR notes that the upland bog/heath/wet grassland habitats within the study area have been shown to be of ecological significance to wintering and migrating Golden Plover. However, per the assessment made no significant disturbance/displacement impacts on the local wintering/migrating Golden Plover population are considered likely as a result of the operation of the proposed development. This has largely been based on a literature review, were it is noted that conflicting evidence supports the disturbance and/or habituation of Golden Plover to wind turbines. I note that these papers primarily focus on breeding birds, where one paper alone notes that greater declines in abundance occurred at wind farms focusing on wintering waterfowl populations, which may be more mobile than the breeding populations. A more recent paper[1] notes that while disturbance activity during construction had no significant effect on Golden Plover breeding abundance or distribution, once turbines were erected, Golden Plover abundance was significantly reduced within the study wind farm site (–79%) relative to the baseline, with no comparable changes in buffer or control areas. Golden Plovers were also noted to be significantly displaced by up to 400m from turbines during operation. Given the

[1] Sansom, Alex & Pearce-Higgins, James & Douglas, David. (2016). Negative impact of wind energy development on a breeding shorebird assessed with a BACI study design. Ibis. 158. n/a-n/a. 10.1111/ibi.12364.

degree of existing turbines in the area, factored in with what is proposed and the potential limited availability of suitable habitat in the immediate area, I consider that there is a risk of significant displacement effects to this species.

I advise that a precautionary approach be taken, and that further assessment is required to determine the potential displacement the proposal may have on wintering Golden Plover. This assessment would also need to look at direct, indirect, and cumulative impacts associated with human disturbance from recreational activities generated as a result of the trails which has not been assessed as part of this application. Furthermore, a more detailed assessment regarding displacement from migratory routes and subsequent reduction in foraging and roosting time and additional energy expenditure from increased flight times etc as a result of the barrier effect would be required given the considerable degree of turbines already occurring in the area.

Overall, given that Golden Plover are associated with the Boggeragh Mountains NHA, I have concerns that the degree of assessment provided falls short of elevating any concerns with regard to displacement of this species from its known staging area. As such, in order to complete a full and thorough assessment of the potential impacts on Golden Plover, an Bord Pleanála may want to consider requesting additional information as detailed above.

Avian Fauna – General

The submitted documentation does not provide an assessment of other species of bird which I would consider are key ornithological receptors. The EIAR notes that species like Kestrel are present and forage within and over the site and are likely to nest in the development site or nearby. Kestrel have now been classified as red listed species due to severe declines in their breeding population, with causes of the decline not clear but possibly due to prey availability, agricultural changes, and reduced feeding opportunities. As such I would recommend the following be requested:

- A detailed assessment in respect of avian species of conservation concern recorded at the site including species such as Kestrel from both a construction and operational standpoint.

I would further recommend that a collision risk assessment which follows Scottish Natural Heritage (SNH) guidance be conducted on all target species and species of conservation concern recorded at the site and surrounding area. This will help provide a more robust assessment of the potential impacts the proposal may have on avian species and help provide a more informed decision of the application.

Bats

Details relating to the exact location of bat roosts referenced within the Environmental Impact Assessment Report have not been provided to Cork County Council, as such Cork County Council does not the ability to fully assess the potential impacts of the proposal on bats.

However, I consider that the recorded levels of bat activity at this site are relatively high and I am not satisfied that while taking the proposed mitigation measures into consideration, that there will not be a significant impact on the local bat population.

I note that preconstruction bat surveys do not provide an accurate prediction of bat activity post-construction. This raises concerns as it may lead to variations of routes through the site bringing bats within closer proximity to turbines and as such at a greater risk of collision and/or barotrauma. Of particular concern is the presence of a bat roost within approximately 700m of Turbine T10, which would also position the roost within approximately a kilometre of a number of other turbines. I note that the size and type of the roost recorded has not been specified and as such it is impossible to

determine the roosts significance. While I concur that there will be no direct impact to this roost during construction, I am not satisfied with the level of assessment provided in relation to the potential indirect effects the proposal may have on this roost and other unknown roost potentially occurring in the vicinity of the proposal. I note that the recorded roost occurs within the core sustenance zone (CSZ) of the bat species recorded roosting i.e. CSZ of pipistrelle species is c. pip = 2km & s. pip = 3km. Therefore, given the high level of bat activity recorded at the site and the proximity of the roost, it extremely likely that the bats recorded within the proposal site are associated with the recorded roost. As per the EIAR given that construction phase activities will result in the loss of moderate to high valued foraging and commuting habitat for bats, while noting that the EIAR classifies the risk to Common pipistrelle as moderate to high to the development, these bats, and in turn its roosts, maybe at significant risk from the proposal. Therefore, the potential impact on the longer-term viability of the roost is still in question. It should be noted that the resilience and conservation status of bat roosts will very likely be heavily influenced by the habitat availability and quality within the windfarm site and surrounding area. Taking into consideration other wind farm developments and land use practices proximal to the site the risk of cumulative impacts on the roosts is also considered potentially significant.

Furthermore, the potential for direct mortality due to the risk of collision with turbines is likely increased at this site given the proximity of the roost. I note a recently published scientific paper has indicated that the activity of some bat species, particularly Common pipistrelle peak at windfarm sites i.e. Common pipistrelle activity was 37% higher at turbines than at control locations, and as such there is an increase fatality risk of collision to this species. Given the recorded roost in close proximity to the site, this raises concerns to this office, especially if it was determined to be a maternity roost.

Therefore, it is considered that more detailed impact assessment may need to be undertaken which should have regard the CSZ of species identified as occurring within the site and the potential impact of loss of habitat, reduction in prey abundance, collision risk and the potential for colony collapse. Cumulative impacts would also need to be addressed.

I am also concerned that attempting to apply and enforce a number of measures described e.g. 'feathering' of idling blades by way of condition attached to a planning permission would not, in reality, be feasible or easily enforced. For this reason, the revised assessment should also confirm whether the mitigation measures proposed are sufficient to ensure the avoidance of significant effects on any potentially vulnerable species.

Taking the above into consideration, an Bord Pleanála may wish to consider requesting additional information in relation to bats as follows:

- A revised impact assessment having regard to the core sustenance zone (CSZ) of species identified as occurring within the site and the potential impact of loss of habitat, reduction in prey abundance, collision risk and the potential for colony collapse. Cumulative impacts should also be addressed. The revised assessment should also confirm whether the mitigation measures proposed are sufficient to ensure the avoidance of significant effects on any potentially vulnerable species and their resting place. The mitigation measures should have cognisance to the resilience and conservation status of bat roosts.

Other Terrestrial Mammals

With regard to badger, the EIAR notes that the site contains a number of badger setts, one of which was confirmed to be a breeding sett. The exact locations of the setts have been treated as confidential and as such unavailable to Cork County Council. Given the scale of the proposal and the associated

loss of habitat, there is potential that there will be a significant impact on the social group within the site.

The EIAR notes the potential presence of two social groups within the study area and as such the assessment provided in which disturbed / displaced badgers as a result of the proposal may merely move to similar suitable habitats in the surrounding area is not scientifically robust. The displacement of members of one social group into another group's territory will ultimately lead to conflict. Therefore, the loss of habitat on each social group has not been adequately assessed as the territory of each group has not been defined. It is noted that where loss of habitat is likely to be greater than 25%, the impact may be considered as significant on the affected social group. Given the scale of the proposal, while taking into consideration cumulative impacts with nearby developments there is a potential that the proposal may have a negative impact on the survival of badger social group recorded at the site.

Therefore, I would recommend that an Bord Pleanála consider requesting additional information in relation to badger as follows:

- The applicant should be requested to quantify the loss of Badger territory/habitat associated with the social group(s) recorded within the proposed development site and provide an assessment of the potential impacts on the group in the short to long term. This assessment should take into consideration operational impacts through increased human disturbance onsite from amenity trails while also considering cumulative impacts associated with the loss of habitat from other developments (recent and under consideration) in the area.

Biodiversity Enhancement Management Plan

This office welcomes any proposals which seek to enhance biodiversity at local area, including those described within the proposed Biodiversity Enhancement and Management Plan (BEMP) for lands in the vicinity of the proposed Ballinagree Wind Farm. While these measures are not directly intended to mitigate impacts which will be caused by the construction of the windfarm, they are intended to have positive benefits for biodiversity generally. However, there are concerns in relation to some of these proposals which it is recommended would be resolved prior to a grant of permission. These include:

- The potential for the generation of the 'edge effect' through strategic tree-felling i.e. creation of wildlife corridors, between areas of upland habitat;
- Establishment of woodland habitat proximal to wetland habitats and habitats of international importance e.g. Annex I wet heath, which could lead to encroachment and establishment of trees within these habitats.

Furthermore, the BEMP areas are non-contiguous and as such the value of these areas is diminished given their fragmented nature.

Conclusions

I have concerns in relation to the potential impacts and effects that the proposed windfarm development will have on populations of a number of species recorded at the site with particular reference to Hen Harrier and Golden Plover and to a lesser extent Bats and Badger within the locality and their ability to maintain viable populations. I consider that significant additional information is required which takes into consideration a number of direct, indirect, and cumulative impacts to complete both Appropriate Assessment and Environmental Impact Assessment of this proposal. The following information would be required:

- A more detailed assessment in respect of potential impact of loss of foraging habitat and a reduction in prey availability to breeding and wintering Hen Harrier in the area through direct, indirect, and cumulative effects. This should be informed by a foraging habitat analysis;
- A more detailed assessment in respect of collision risk analysis (for all avian species of conservation concern) and displacement of Hen Harrier given the known historic and current use of the site and surrounding landscape by both breeding and foraging Hen Harrier;
- A more detailed assessment in respect of potential loss (direct and indirect) of staging habitat for Golden Plover given what is proposed in-combination with the large concentration of existing wind turbines in an area;
- A more detailed assessment regarding the potential displacement of Golden Plover from migratory routes i.e. the barrier effect, and subsequent reduction in foraging and roosting time and additional energy expenditure from increased flight times etc.;
- A detailed assessment in respect of avian species of conservation concern recorded at the site such as Kestrel from both a construction and operational standpoint;
- A more detailed assessment in respect of potential disturbance / displacement impacts on Hen Harrier, Golden Plover and other avian and faunal species which would be generated during the post construction phase by the proposed amenity trails;
- A revised impact assessment having regard to the core sustenance zone (CSZ) of bat species identified as occurring within the site and the potential impact of loss of habitat, reduction in prey abundance, collision risk and the potential for colony collapse. Cumulative impacts should also be addressed. The revised assessment should also confirm whether the mitigation measures proposed are sufficient to ensure the avoidance of significant effects on any potentially vulnerable species and their resting place. The mitigation measures should have cognisance to the resilience and conservation status of bat roosts.
- A revised impact assessment on the short to long term impacts on badger social group(s) recorded within the site and immediate vicinity of the site. This assessment should be informed by quantifying the loss of badger territory/habitat associated with each social group.

Furthermore, I recommend the omission of 4 no turbines (T2, T3, T13 & T17) at a minimum to ensure the avoidance of impacts on upland peatland habitats of biodiversity value. Additional turbines may need to be omitted on completion of impact assessment in relation to species such as Hen Harrier and Golden Plover.

It is the recommendations of Cork County Council Ecology Office that that no such development take place on intact peatland habitats and be avoided on degraded peatland habitats or any habitats of high natural value. Of particular concern to this office would be the level of windfarm development in the area and the extent of remaining suitable habitat for species such as Hen Harrier and Golden Plover. While I note that there is a push for renewable energy projects within the county and nationwide in light of the climate crisis, recognition also needs to be given to the fact that there is currently a biodiversity crisis ongoing.

Notwithstanding these concerns we have been asked and have provided conditions. However, it should be noted that I have substantial concerns in relation to Habitat loss / degradation, Hen Harrier, Golden Plover, Badger and Bats, which I believe should be resolved prior to a grant of permission and not done so by way of condition.

Conditions

No.	Condition	Reason

	Turbines 2, 3, 13 and 17, and their associated connection tracks, hardstanding areas etc shall be omitted from the proposed scheme.	In the interests of minimising negative impacts on habitats and species of high biodiversity value within the site.
	Turbines within 500m of active or historical Hen Harrier nesting sites and their associated connection tracks, hard standing areas etc. shall be omitted from the proposed scheme. Revised drawings showing compliance with this requirement shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.	In the interests of minimizing negative impacts on species of high biodiversity value within the site.
	Prior to the commencement of development, an Ecological Protection Plan shall be submitted to, and agreed in writing with, the planning authority. The Plan shall include the following: d) Development of a habitat's protection plan for the overall site; e) Specific proposals to deal with the Hen Harrier, Golden Plover, Bats and Badger during the construction and operational phases; f) Ongoing monitoring of the conservation status of protected habitats and species within the site. The developer shall review usage by protected species, with a focus on birds and bats, of the wind farm site and document any casualties through the monitoring programme. An annual report on the ecological monitoring shall be submitted to the planning authority including for seven years post commissioning of the project.	To protect the ecological value of the site.
	Prior to the commencement of development, the applicants shall submit a Conservation and Habitat Management Plan for the site. This should be based on revised design of the proposal. The plan shall provide details and programmes for the implementation of all habitat management / enhancement proposals required to mitigate / compensate for the loss of or damage to habitats of biodiversity value, including habitats of value to Hen Harrier and Golden Plover. The plan shall include a map identifying the areas to be managed and shall also provide detailed information in relation to the measures to be implemented to achieve this. The plan shall also include a timeline for implementation of described measures and shall provide for ecological monitoring of management/enhancement works to examine the effectiveness of the proposal. The plan shall be prepared by a suitably qualified ecologist.	To minimise impacts on habitats and species of biodiversity value within the site.

	Prior to construction works being carried out between March and August, a survey for breeding Hen Harriers shall be carried out by a suitably qualified ornithologist. The survey shall cover the area within a boundary of 500m of the works to be carried out during the above period. No construction works shall be carried out during the above period within 500m of a presenting breeding site and / or nest without the consent in writing of the planning authority.	To avoid disturbance to breeding Hen Harrier, a species listed in Annex I of the EU Birds Directive.
	A survey for breeding sites and resting places of protected terrestrial species, in particular Bats (all roost types), Otter, Badger, Red Squirrel and Pine Marten, will be carried out prior to construction works commencing. If these features are found, then appropriate mitigation measures shall be submitted to and agreed in writing with the planning authority, prior to commencement of development. Any mitigation measures in relation to otter or bat populations shall be carried out only under licence from the National Parks and Wildlife Service and details of any such licence shall be copied to the planning authority.	In the interest of wildlife protection.

Ian McDermott

Cork County Council, Assistant Ecologist

Engineering Report

ABP 312606-22 Report on Ballinagree Wind Farm

I have examined the site in question. My recommendations are as follows:

General:

Turbine T-09 and part of the site access track appears to be shown on or adjacent to Public Road L-34182-0. The applicant needs to confirm this is not the case.

Cable Route:

All roads where the cable route is installed shall receive full road width regulating and resurfacing. Surface dressing alone will not suffice. The resurfacing type shall match existing surfaces.

All surface water culverts crossed or exposed during cable trench excavation shall be mapped and notified in writing weekly to Cork County Council Millstreet Office as cable trench excavations proceed.

All surface water culverts crossed by the trench excavation works are to be replaced in full across their entire length unless otherwise agreed. HDPE twin wall pipe of equivalent area or bigger with a minimum size of 225mm shall be used unless otherwise agreed with Cork County Council.

Before cable trench works commence all water tables along the route are to be photographed and mapped. These must be submitted to Cork County Council Millstreet Office.

No cable infrastructure shall be affixed to any bridge or culvert structure.

All cable infrastructure shall pass beneath surface water culverts.

Any road level increase adjacent to parapet walls or retaining walls as a result of the works shall require all such elements raised to the appropriate standard.

At Horsemount Cross, Coppeleen Bawn Cross, Awboy Bridge, Bawnmore Cross, Clonavrick Bridge, specific proposals in relation to line of trenching works, location of directional drill pits, receptor pits, and reinstatement to be agreed with Cork County Council Offices, Millstreet before excavations commence.

Specific locations of joint bay locations are to be agreed on site with Cork County Council. Final level of joint bay must match existing road levels.

The contractor must maintain any temporary trench surface at all times and provide a 24hr phone contact to Cork County Council for this purpose.

The contractor must maintain any diversion routes proposed to facilitate the works. Hedgecutting works must be carried out and passing bays must be provided if so directed by Cork County Council. The cost of all such work will be borne by the contractor.

If directed by Cork County Council a road condition survey shall be carried out on any diversion route before it is used as such. The contractor shall carry out repair work as directed by Cork County Council to ensure that the diversion route is fit for purpose. The contractor shall maintain the diversion route for the duration of the diversion. Once the diversion is complete the route shall be repaired to its original condition or better as agreed with Cork County Council.

Delivery Route for Turbines:

Turbine Delivery Contractor to contact Cork County Council Mallow before any accommodation works necessary for the turbine delivery in the Mallow area are carried out.

The section of the public road L-7461-0 from its junction with the L-2750 as far as Access Point 1 shall be widened and resurfaced prior to turbine delivery. This work shall be agreed with Cork County Council Millstreet Office before works commence.

The developer shall liaise with Office of Public Works and shall apply for any necessary legal consents required to replace the bridge structure at WF-HF8.

No turbine components shall be delivered through Access Points 3 or 4.

Borrow Pits:

At Access Point 4 the contractor shall provide a suitably surfaced crossing point before haulage of material from the Borrow Pit commences. The surface shall be either concrete or Hot Rolled Asphalt finish and shall be such that minimal maintenance is required. At completion of the works the surface shall reinstated as directed by Cork County Council.

At all times while construction traffic is using Access Point 4 the contractor shall ensure that traffic control is provided at all times for motorists, pedestrians, and cyclists.

Road Condition Survey:

Prior to construction commencing the developer shall carry out a full road condition survey on the public roads from Millstreet Town to Access Point 4. This survey shall include PSCI, IRI and Video. The results shall be submitted to Cork County Council prior to the works commencing. Within three months of project completion the developer shall submit a post road condition survey on the same route. The contractor, on direction from Cork County Council, will carry out works on the route in question to ensure that the roads, post completion of the development, are in the same or better condition.

Bond:

The developer shall provide a bond to Cork County Council to the value of €300,000 to ensure satisfactory reinstatement of any public roads that may be damaged by the development.

Development Charges

The developer shall pay a special development charge to Cork County Council for recent repairs works on public roads L-2750-0, and future works on the L-1123, L-7461, L-3418, L-7473 - all of which will be used to access the development.

L-2750-0: 3800m of surfacing in 2020 and 2021: Total cost €234200: Recoup 25% of this cost - €58,550

L-7461: 1000m of strengthening planned: Total cost €80,000: Recoup 25% of this cost - €20,000

L-3418: 2000m of resealing complete: Total cost €50,000: Recoup 25% - €12,500

L-7473-0 800m of strengthening planned: Total cost €64,000: Recoup 25% - €16,000

L-1123-0 6020m of strengthening/surfacing: Total cost €602,000: Recoup 25% - €150,500

The value of this development charge is €257,500.

Prohibited Roads for Construction Traffic

No construction traffic shall be allowed on public roads:

L-7464-0, L-34192-0, L-7463-0, L-34183-0, L-34182-0 (except at northern end), L-34181-0, L-7461-44(south of the site boundary), L-5245-26,

L-3418 between Coppeleen Bawn Cross and Annaganihy Cross.

James Dwyer,

Senior Executive Engineer,

Macroom Municipal District.

Environment Report: surface water and ground water

Report on Planning Application submitted by Fehily Timoney & Company on behalf of Ballinagree Wind DAC, (a joint venture between FuturEnergy Ireland and Ørsted), for the proposed Ballinagree Wind Farm in County Cork.

This report deals only with the potential impacts on surface water and ground water.

Frank O'Flynn, Senior Executive Scientist, Environment Directorate.
Date 21/3/2022.

This report refers to the application to An Bord Pleanala, by Ballinagree Wind DAC, for the construction of a wind energy development of 20 wind turbines & electrical substation within the townlands of Annagannihy, Ballynagree East, Ballynagree West, Carrigagulla, Carrigduff, Finnanfield, Inchamay South and Knocknagappul, Co. Cork & a grid connection comprising a 110kV underground electrical cable from the wind farm site to the existing 110 / 220kV substation at Clashavoon, within the townland of Aughinida, Co. Cork.

The proposed project consists of the following main elements:

- The proposed wind farm site includes 20 wind turbines with a tip height range from 179m to 185m, 5 existing access points from the public road, internal access tracks, river/stream crossings, hard standings, onsite substation, internal electrical and communications cabling, 2 temporary construction compounds , drainage infrastructure, 3 borrow pits, and all associated works related to the construction of the wind farm.
- The proposed grid connection route will consist of underground 110kV cable to connect the on-site substation to the existing 110/220kV substation at Clashavoon. The grid connection route will be ca. 11.37 km in length, with 9.35 km to be constructed primarily within the existing road corridor. The 110kV grid connection cable will follow public roads and shall feature horizontal directional drilling at 4 no. locations to cross existing watercourses.

Forestry Felling;
A total of 70ha of forestry is proposed to be felled to accommodate the proposed windfarm development. In addition to this it is proposed to fell 18 ha of coniferous forestry as part of the proposed Biodiversity Enhancement Management Plan measures.

Location;
The project is located in a rural area approximately 8km south east of Millstreet and 10 km north of Macroom. Settlement in the area is made up of one-off rural housing and farmyards generally located along the road network of the area. The nearest village is Ballinagree which is approximately 1.5km to the south of the wind farm site.
Access to the site is primarily via the existing local road L2578 'Butter Road' from the direction of Millstreet to the North West.

Hydrology & Water Quality
The proposed windfarm is located within Hydrometric Areas No. HA 18, Blackwater (Munster), & HA 19, Lee, Cork Harbour and Youghal Bay.

The wind turbines, substation, borrow pits, etc., are located primarily within the Laney_10 waterbody, but also within Nad_10, Glen (Banteer)_10, Laney_20 & Laney_30.

The grid connection route is largely contained in the Laney_30 waterbody.

All of these waterbodies are High Status Objective Catchment Areas, (also known as Blue Dot areas). All of these waterbodies are currently at High Status, & are considered to be Not at Risk of achieving their WFD status objective.

The majority of the proposed wind farm site and the proposed grid connection is located within the Ballinhassig West Groundwater Body (GWB). The north-eastern extremity of the proposed wind farm lies within the Glenville GWB.

Land Use & Soils.
The site is predominantly made up of made up of agricultural lands and mature conifer forest. Pockets of recently felled conifer woodland, heath, scrub and improved agricultural grassland are also present across the site. There are areas of upland peat bog in the northern part of the site.

10 of the proposed wind turbines are located within commercial forestry areas and 10 are located on pasture lands. There are 3 proposed borrow pits located within forested lands. It is proposed that existing access tracks will be utilised and upgraded where possible and new tracks will be required in both forested lands and agricultural lands.

The subsoils across the site comprise glacial till derived from Devonian sandstones, bedrock outcrop or subcrop, with areas of blanket peat and alluvium.

Elevations within the wind farm site range from 200m to 490m approximately. Slopes within the site range from 0% to approximately 20% grade, the maximum slope at infrastructure locations is 16%

Groundwater Vulnerability
The Groundwater Vulnerability within the proposed Ballinagree Wind Farm site boundary is classified by the GSI as ranging from 'High' to 'Extreme' with areas of exposed bedrock (X – Rock Near Surface) also present within the proposed development site

The applicant states that from a review of the GSI Landslide Susceptibility database, the proposed development and proposed infrastructure locations are generally located within areas of 'Low' to 'Moderately High' susceptibility. The midsection and north-eastern most area of the site is classed as 'Low' with a strip of the southern-most area and the northern area class as 'Moderately High'. The western-most part of the site where the borrow-pits are located is classed as 'Moderately High'.

All dwellings are more than 750m from the nearest turbine location, therefore it is assumed that their water supplies are well separated from the main construction activities.

Public drinking water abstractions
The Ballinagree Public Water Supply is from a groundwater abstraction which is located more than 1km away from the nearest turbine location. This is well separated from the proposed development & should not be at risk.

Construction and Environmental Management Plan & Surface Water Management Plan.
The applicants have submitted an outline Construction and Environmental Management Plan (CEMP) for the proposed Ballinagree Wind Farm development. This CEMP includes a dedicated Surface Water Management Plan.

The CEMP & Surface Water Management Plan sets out the key environmental management issues associated with the construction, operation, and decommissioning of the proposed project, to ensure that during these phases of the project, the environment is protected and impacts on the environment are minimised.

The applicants have confirmed that this CEMP will be updated prior to construction to take account of any amendments arising during the consenting process and relevant conditions attached to the planning permission and will be implemented for the duration of the construction phase of the project. The Surface Water Management Plan will be finalised following the appointment of the contractor for the main construction works.

An Environmental Clerk of Works (ECoW) will be appointed by the contractor. The ECoW or other suitably appointed person will have the authority to suspend the works if weather conditions are deemed too extreme for the effective protection of receiving watercourses.
Mitigation measures to protect receiving watercourses will be put in place as directed by the ECoW in response to extreme forecasts.

The ECoW will be present to oversee construction works where required, to ensure that all agreed mitigation measures are carried out by the appointed contractor(s).
Ongoing monitoring of the efficacy of the mitigation measures will be carried out throughout the construction stage.

Construction methodologies have been provided for the key elements of the construction process as follows;

- Temporary Construction Compound;
- Tree Felling
- Borrow Pits
- Site Drainage System;
- Proposed new Site Access and Roads and upgrade of existing roads;
- Watercourse Crossings
- Hard Standing Areas;
- Turbine and Anemometry Mast Foundations;
- Electricity Substation and Control Building;
- Spoil Management;
- Cable Trenching and Grid Connection and
- Turbine Delivery Route Accommodation Works.

Potential Impacts on Water Quality
During the construction period, the development has the potential to have impacts on hydrology and water quality unless appropriate mitigations are applied.
Tree felling, new access tracks and upgrade of existing tracks, turbine hardstanding areas, the on-site substations and other new, hard surfaces have the potential to contribute to an increase in runoff.
The applicant has identified that the risk to hydrology is relatively low because the development will not have a major impact on run-off rates.

There is a significant risk to surface water quality, primarily due to potential for run-off of sediment to surface water due to excavation, traffic movements, stream crossings, etc. There is also a risk to surface & groundwater due to leakage or loss of fuel or hydrocarbons from plant, this can be mitigated with good management, & provision of appropriate spill response equipment & procedures.

The applicants have carried out detailed desk studies & field assessments of the overall site area.

The applicants have identified the potential impacts on water quality during the construction period & have detailed the most sensitive locations such as stream crossings, borrow pits, substation construction, etc. Site specific mitigation measures have been identified to minimise any impacts on water quality at the most vulnerable sites, as well as general mitigation measures.

A Surface Water Management Plan was submitted in Appendix 10.2 of the EIAR. The Surface Water Management Plan will be finalised following the appointment of the contractor for the main construction works.

A 75m buffer from the main streams was applied during the constraints mapping for the turbine location and will be maintained during the construction phase. No construction activities or drainage will be carried out within 50m of the watercourses, with an exception for watercourse crossings.

A buffer of this scale provides good protection to the watercourses on site & leaves a significant area for attenuation of any accidental discharges of silt laden water given the generally gently sloping nature of the site.

An emergency response procedure has been specified to deal with any pollution incidents on site. All personnel working on site will be trained in pollution incident control response. An emergency response plan will be prepared which will ensure that appropriate information will be available on site outlining the spillage response procedure and a contingency plan to contain silt. A regular review of forecasts of heavy rainfall will be carried out, and a contingency plan will be prepared for before and after such events.

The main contractor will be required to engage an Environmental Clerk of Works, and to monitor all site works and to ensure that methodologies and mitigation are followed throughout construction to avoid negatively impacting on the receiving environment.

The applicant states that daily visual inspections of drains and outfalls will be performed during the construction period to ensure suspended solids are not entering streams and rivers on site, to identify any obstructions to channels and to allow appropriate maintenance of the drainage regime. Should the suspended solids levels measured during construction be higher than the existing levels, the source will be identified and additional mitigation measures implemented. If excessive suspended solids are noted, construction work will be stopped, and remediation measures will be put in place immediately.

Instream works shall only take place during the period July to September (as required by IFI for instream works). All instream works shall take place in written agreement with the IFI. The proposals submitted by the applicant for the wind farm site will largely avoid any instream works.

The applicant states that a water quality monitoring programme will be established to ensure that water quality is maintained. This programme will ensure that designed mitigation measures are working so water quality is not affected.

Visual inspections will be continued during the operational period until vegetation is established on site at intervals to be agreed with Cork County Council/IFI.
A record will be kept of daily visual examinations of watercourses which receive flows from the permitted development, during and for an agreed period after the construction phase.

A detailed water quality monitoring programme will be undertaken during the construction phase of the proposed development, in addition to the visual inspections outlined above, to ensure the effective implementation of the proposed mitigation measures. Field measurements and grab samples will be taken at suitable locations, which will be decided prior to the construction phase commencing.
The field measurements will be recorded at the site and will include measurement of the following parameters, electrical conductivity (µs/cm), pH, temperature (ºC), suspended solids (mg/l) and dissolved oxygen (mg/l).

The information submitted by the applicant indicates that there would be little risk of impact on water quality once the proposed activity is operational, & once the site is fully vegetated. There will be no personnel based on site. There will be no frequent vehicular traffic to or from the site, or through the site, during the operational stage.

Conclusion

The applicants have submitted detailed proposals to protect water quality during the construction & operational stages of this proposed development. The CEMP & Surface Water Management Plan will be finalised following the appointment of the contractor for the main construction works.
I have no objection to grant of permission on environmental grounds.

Recommended Conditions if Permission is to be granted:

I recommend that the following conditions should be applied to any permission granted.

No.	Condition	Reason
1	The construction of the development shall be managed in accordance with a Construction & Environmental Management Plan, which shall be submitted to, and agreed in writing with Cork County Council prior to commencement of development. This plan shall include a detailed Surface Water Management Plan.	In the interests of environmental protection.
2	During the construction phase operations on site shall be carried out in such a manner that no polluting material, rubble, waste material or contaminated surface water enters any adjacent watercourses or public roadway around the site. No burning of waste material shall take place on site.	In the interests of environmental protection.
3	All watercourses in or adjacent to the works area shall be monitored on a daily basis by the Environmental Clerk of Works, or designate, to ensure they are not being impacted by silt/sediment laden storm water run-off from works area. A record of this monitoring shall be maintained on site.	To protect surface water quality.

4	All over ground tanks containing hydrocarbons shall be contained in a waterproof bunded area, the capacity of the bund is to be the greater of the following; 110% of the largest tank size or 25% of total volume stored in the bunded area. All valves on the tank shall be contained within the bunded area. The bunded area shall be fitted with a locking valve that shall be opened only to discharge storm water. The developer shall ensure that this valve is locked at all times.	In the interests of environmental protection
5	Hydrocarbon spill kits shall be in place on all site vehicles/plant. Suitable interceptor drip trays shall be used when refuelling vehicles/plant & when vehicles/plant are parked. No servicing of vehicles/plant shall be carried out on site.	To prevent water pollution
6	All drainage and sediment /silt traps shall be in place before any other works are undertaken on the site. All work shall be carried out in favourable weather conditions to minimise the generation of silt & fines.	To prevent water pollution.
7	Silt fencing shall be constructed to protect watercourses on site from run-off of silt laden water prior to commencement of development. These silt fences shall be maintained as required during the construction phase, & on an ongoing basis, until the site is fully vegetated & the risk of silt run-off is minimised.	To protect water quality.
8	The service roads shall be cambered to deflect surface water to the adjoining lands for attenuation. Service roads shall not discharge directly to open drains on site.	To prevent water pollution.
9	Instream works shall only take place during the period July to September. All instream works shall take place in written agreement with the IFI.	In the interests of environmental protection.

Frank O'Flynn, Senior Executive Scientist, Environment Directorate.

Archaeology Report.

Planning Application for a Wind Farm Development (and all associated works) within the townlands of Annagannihy, Aughinida, Ballynagree East, Ballynagree West, Bawnmore, Caherbaroul, Carrigagulla, Carrigduff, Clonavrick, Derryroe, Drishane More, Dromagh, Drominahilla, Dromskehy, Finnanfield, Inchamay South, Kilberrihert, Knocknagappul, Rahalisk and Tullig, Co. Cork.

Monday, March 21, 2022

The application has been made to An Bord Pleanála as 'Strategic Infrastructure Development' (SID) the following is the Cork County Council County Archaeologist (CA) Report on the impact on the Archaeological and undesignated cultural heritage of the proposed development.

CORK County Development Plan 2014

County Development Plan 2014 Objective HE 3-1: Protection of Archaeological Sites

a) Safeguard sites and settings, features and objects of archaeological interest generally. b) Secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments including the Sites and Monuments Record (SMR) (see ww.archeology.ie) and the Record or Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, as amended and of sites, features and objects of archaeological and historical interest generally. In securing such preservation, the planning authority will have regard to the advice and recommendations of the Department of Arts, Heritage and Gaeltacht as outlined in the Frameworks and Principles for the Protection of the Archaeological Heritage.

County Development Plan 2014 Objective HE 3-2: Underwater Archaeology

Protect and preserve the archaeological value of underwater archaeological sites and associated features. In assessing proposals for development, the Council will take account of the potential underwater archaeology of rivers, lakes, intertidal and subtidal environments.

County Development Plan 2014 Objective HE 3-3: Zones of Archaeological Potential

Protect the Zones of Archaeological Potential (ZAPs) located within historic towns and other urban areas and around archaeological monuments generally. Any development within the ZAPs will need to take cognisance of the potential for subsurface archaeology and if archaeology is demonstrated to be present appropriate mitigation (such as preservation in situ/ buffer zones) will be required.

County Development Plan Objective 2014 HE 3-4 Industrial and Post Medieval Archaeology

Protect and preserve the archaeological value of industrial and post medieval archaeology such as mills, limekilns, bridges, piers, harbours, penal chapels and dwellings. Proposals for refurbishment, works to or redevelopment/ conversion of these sites should be subject to careful assessment.

County Development Plan Objective 2014 HE 3-5 Burial Grounds

Protect all historical burial grounds in County Cork and encourage their maintenance and care in accordance with appropriate conservation principles.

County Development Plan Objective 2014 HE 3-6: Archaeology and Infrastructure Schemes

Have regard to archaeological concerns when considering propose services schemes (including electricity, sewerage, telecommunications, water supply) and proposed roadwork's (both realignment and new roads) located in close proximity to Record Monuments and Places and their known archaeological monuments.

Preplanning meeting:

On the 2 /12/2020 with Tony Cummins (Consultant archaeologist with John Cronin & Assoc), Trevor Byrne (Fehily Timoney) and myself. The main issues raised was the concentration of archaeological monuments within the development site and in the immediate surrounding area, and the impact of the development, both directly or indirectly on same both individually and collectively as an archaeological landscape should be carefully considered and assessed. The presence of a large significant number of important prehistoric monuments within the development site was highlighted as a sensitive landscape and the proposed development impact, both directly and indirectly should be carefully considered. The location of T9 regarding visual impact on the setting of adjacent stone circles CO049-008--- was raised as a major concern. It was also recommended the potential for indirect impacts on National Monuments and other archaeological monuments with potential visual /astronomical alignments in the wider landscape should also be assessed.

Report

I have read and assessed Chapter 14 of the EIAR Archaeology, Architecture and Cultural Heritage. It was prepared by John Cronin, Tony Cummins and David Murphy of John Cronin Associates. The chapter has assessed the impacts, both direct and indirect (visual) of the proposed wind farm, grid connection, biodiversity enhancement area and turbine delivery routes on the known and potential archaeological, architectural, and cultural heritage resource within the development area and the surrounding 1km (study area). The wider landscape (1km) surrounding the proposed wind farm project was also reviewed to assess the potential for indirect impacts on National Monuments and other extant recorded monuments with potential visual alignments across the landscape, including megalithic tombs, stone circles and stone rows. The following are my comments and recommendations in regard to archaeology and cultural heritage for each of the four sections of the development as dealt with in the EIAR.

Windfarm

Archaeology

The proposed area of the windfarm is large in scale and contains 14 Recorded Archaeological Monument, one of which is a National Monument (CO049-007 Stone Circle) with numerous monuments (see www.archaeology.ie for details) in the surrounding area. These range in date from prehistoric to the post-medieval periods.

Of these, nine are significant prehistoric monuments: two stone circles, four fulachta fia, two stone rows and one standing stone all generally dating to the Bronze Age with a number of other monuments from this period, including megalithic wedge tombs, are also located within the surrounding area. The presence of these monuments is indicative of a strong Bronze age community/activity locality. There is one early medieval ringfort within the wind farm site boundary and a hut site and holy well on the western boundary located near the summit of Musheramore Mountain. An interesting 18th century roadside Carrigagulla House is located within the boundary on south east side. The National Museum of Ireland topographical files also reveal the high level of prehistoric activity in the area with four artefacts found in townlands that extend into the boundary of the wind farm.

It is noted the layout of the proposed development has been designed to avoid the locations of all known archaeological sites and their environs. Of the 14 recorded archaeological monuments

within the proposed wind farm site, none are located within 270m of the locations of any proposed turbines or within 100m of associated infrastructure. The majority of the proposed wind farm construction locations are located in forestry plantations this includes ten of the turbines (Turbines 1, 4, 6, 11, 12, 14, 15, 18, 19 and 20), the three borrow pit locations, the temporary construction compound, the substation compound and the two met mast locations. The exact locations of many of these were inaccessible for site assessment due to thick tree growth as well as the presence of fallen or partially collapsed trees.

The assessment report concludes the construction phase will have no predicted direct or indirect impacts on the known archaeological resource. However, once built, the operational stage 'will result in a range of indirect impacts of a visual nature on the wider setting of most of the archaeological monuments which will range from not significant to significant'.

As part of the assessment a review of the alignment of the stone circles within the wind farm site was carried out in consultation with the Landscape and Visual specialists during the design phase of the project to avoid the siting of turbines that would directly impinge on these alignments. A review of the recorded National Monuments within 10km of the wind farm site was also carried out to assess their potential intervisibility with the wind farm location. Cartographic sources dating indicate that proposed development site was an open, vacant heathland until 19th century land reclamation works to create field enclosures.

Direct Impact

The assessment has satisfactorily demonstrated there will be no direct impact on known archaeological monuments. Through LiDAR survey and field walking the accessible areas it has satisfactorily demonstrated there is no previously unrecorded monuments visible within the Wind farm area. However, as noted in the assessment, given the concentration of monuments and artefacts associated with the Bronze age in the area, highlights the potential for subsurface archaeology within the development boundary that may be impacted by the development.

Indirect Impact

Given the proximity of the proposed wind farm to the extensive and wide range of archaeological monuments within and adjacent to the Windfarm, especially on the eastern side there is inevitably going to be a visual impact albeit it lessened for most of the Turbines given their location, distance, forestry and topography. The main concern is on the eastern side where Turbines T5, T8 and especially T9 are located. These are in close proximity to concentration of a number of prehistoric archaeological monuments especially CO049-008 Stone Circle and CO049-007 Stone Circle (National Monument) CO049- 20 Stone row and a number of Fulacht Fia CO049-57-59 & 6. This issue was raised at the Preplanning meeting and although it is acknowledged the development has respected these monuments and designed the area out there is still significant negative visual impact of the individual monuments and their setting and the general prehistoric landscape they collectively make. I would be opposed to the location of T9 & T8 as currently located. The assessment notes the Stone Circle CO049-008 is 270m away from T9, the Stone Circle is deemed a High value designation in the EIAR and the impact considered: high negative and significant indirect impact. Stone Circle CO049-007 is a National Monument and of High value also, however given its current location within a forestry the visual impact is considered negligible and impact significance slight. The Stone row CO049-020 is deemed of medium value and the impact on the development, being c 430m from Turbine 8, of medium negative impact and the significance of impact medium. The assessment does not address the

visual impact on the collective nature of these monuments as a prehistoric landscape nor does it provide an assessment on same. The remaining archaeological monuments will have some level of negative visual impact however given the general isolated nature of the monuments, monument type and the location and distance to the Turbines it is considerable on balance acceptable.

EIAR Proposed Mitigation

Pre-construction archaeological site investigations to identify any potential unknown, subsurface archaeological remains - geophysical surveys and test trenching within suitable open lands and archaeological monitoring of construction works within forestry plantations.

CA Recommendation

I am recommending the omission of Turbine 9 given its proximity to the Stone Circle CO049-008 which is designated High value status in the EIAR, and the proposed development will have a high negative and significant indirect impact on the archaeological monument CO049-008 Stone Circle and its setting along with and the surrounding prehistoric archaeological landscape CO049-7 stone circle, CO049- 20 stone row, CO049-57-59 & 68 Fulacht fiadh.

I am also recommending the omission of Turbine 8 as currently proposed as it will negatively impact on the setting on the archaeological monument CO049-020 Stone row and surrounding prehistoric archaeological landscape.

I concur with the mitigation proposed in Section of Chapter 14.5 of EIAR as amended below (1-3) and recommend they are attached as a condition of planning.

The following conditions are attached if planning permission granted:

1. The applicant is required to engage the services of a suitably qualified archaeologist (licensed under the National Monuments Acts 1930–2004) to carry out

(a) A systematic advance programme of archaeological field-walking surveys in areas where pre-construction tree felling areas to identify any previous unrecorded archaeological, cultural or architectural heritage sites. Archaeological monitoring under licence of ground excavation works shall be carried out in these areas under license by the National Monument Service.

(b) The turbines, hardstands and associated new access tracks located within improved green field areas shall be subject to a pre-construction geophysical survey followed by program of licenced targeted archaeological test trenching. The testing plan shall be submitted to the Local Authority archaeologist for written approval prior to submitting for the licence. The testing shall include the investigation of a potential section of a relict field boundary noted.

(d) A pre-construction programme of linear archaeological test trenching will be carried out on the footprint of the three turbines (T13, 16 and 17) in these areas and along the routes of any associated new access tracks which will require ground excavation works during the construction phase. No sub-surface work shall be undertaken in the absence of the archaeologist without his/her express consent. Where archaeological material is shown to be present, avoidance, preservation in situ, preservation by record (excavation) and/or monitoring may be required and the Planning Authority and National Monuments Service of (Depart H,LA&H) will advise the Applicant/Developer with regard to these matters.

(e) Having completed the work, the archaeologist shall submit a written report to the Planning Authority and to the National Monuments Service for consideration. No site preparation or construction work shall be carried out until after the archaeologist's report has been submitted and permission to proceed has been received in writing from the Planning Authority in consultation with National Monuments Service

2. Having regard to proximity of the proposed Turbine 8 & 9 proximity to archaeological monument CO049-008 Stone Circle and CO049-020 Stone row and its setting along with and the surrounding prehistoric archaeological landscape CO049-7 stone circle and CO049-57-59 & 68 Fulacht fia. it is considered that the proposed Turbine 8 & 9 would have detrimental visual impact on the Recorded Archaeological Monument and on the overall context of the prehistoric landscape of which the and the location of T9 would therefore be contrary to Objective HE3-1 of the County Development Plan 2014 to *Safeguard sites and settings, features and objects of archaeological interest generally.*

Non designated Cultural heritage

There are no historic settlements, vernacular structures, demesne features or associations with historical events located within, on in close proximity to, the wind farm site. A number of townland boundaries extend through the forestry plantation on the hill and associated landscape features such as banks or ditches that demark their extent are typically considered to be features of local cultural heritage interest worthy of identifying and recording. The historic OS maps show a number of townland boundaries traversing the plantation and these are indicated as linear cartographic features that do not appear to have been associated with constructed land division features such as field banks and the majority are now occupied by modern forestry roads.

EIAR Mitigation

The Completion of a boundary survey, to include a detailed photographic record, of the section of the drystone wall, which forms part of the Ballynagree East and Carrigagulla townland boundary, located within the northern end of the T5 hardstand.

CA

As per EIAR report

Grid Connection

Archaeology

There is one recorded archaeological monument along the public road to be used for the grid connection route – 19th c 'Awboy Bridge'. The burying of the cable along the grid connection route is along existing road and horizontal drilling (HDD) adjacent to masonry bridges and associated watercourses with no predicted direct or indirect impacts on the known archaeological or cultural heritage.

EIAR Proposed Mitigation

All ground works within undisturbed green field locations, including HDD areas along the grid connection will be subject to licenced archaeological monitoring and ground works within the environs of the Famine memorials at the crossroads in Killberrihert townland.

An archaeological watching brief of other grid connection trench excavations within the public road will be carried out as part of the programme of licensed archaeological monitoring of the project. In the event that any sub-surface archaeological features are identified they will be recorded and cordoned off while the National Monuments Service and the Local Authority are consulted to determine further appropriate mitigation measures, which may include preservation in situ (by avoidance) or preservation by record (archaeological excavation).

CA Recommendation

I concur with the mitigation proposed in Section of Chapter 14.5 of EIAR and it is recommended these are attached as amended below as a condition if planning permission granted of planning.

1. The applicant is required to engage the services of a suitably qualified archaeologist to monitor under licence from the National Monument Service (NMS)of the Department of Housing, Local Government and Heritage all ground works within undisturbed green field locations, including HDD areas, required as part of the grid connection and all ground works within the environs of the Famine memorials at the crossroads in Killberrihert townland. The ground works/removal of topsoil shall be carried out under the direction of the appointed archaeologist. Intermittently monitoring /archaeological watching brief of other grid connection trench excavations within the public road will be carried out as part of the programme of licensed archaeological monitoring of the project. In advance of the development a method statement shall be submitted for the watching brief for written approval of the County archaeologist. If archaeological material is found during the course of monitoring, the archaeologist shall have work on the site suspended in this area, pending a decision as to how best to deal with the archaeology. Monitoring is to take place to the uppermost archaeological horizons only. The developer shall be prepared to be advised by the Local Authority Archaeologist and National Monuments Service with regard to any necessary mitigating action (e.g. preservation in situ, or excavation). The applicant shall facilitate the archaeologist in recording all the archaeological material found. In addition, the archaeologist shall record all Undesignated Cultural features to be impacted /removed by the development including historic roads, townland and field boundaries (photographs, sketch section & plans, written description). The Planning Authority and National Monuments Service shall be furnished with a written report describing the results of the monitoring.

Non designated Cultural heritage

A masonry road bridge 180m to the east of the Bawnmore crossroads is identified as of cultural heritage interest along with a pair of modern Famine memorial stone adjacent to the crossroads in Killberrihert townland. The memorial stone on the southern side of the road is dated to 1997 and notes that it is erected close to the site of a 'soup house'. There is a building shown on the

25-inch OS map (1888-1913 series) that potentially could have been used, it is not shown on later maps and no visible traces of it today.

The memorial on the north side of the road commemorates infants buried in unmarked graves in nearby burial grounds in Derryroe, Killberrihert (CO060-122----) and Carrigagulla (CO060-021----) townlands. This Carrigagulla burial ground is a recorded archaeological site and is located 400m to the south of the boundary of the wind farm site.

Impact

The proposed watercourse crossing at the bridge is by horizontal directional drilling under the bridge with no impact on the bridge or channel. A review of the SMR/RMP and OS maps of the lands in the environs of the two memorial features did not reveal any record of burial grounds in lands adjacent to this section of the public road.

EIAR Proposed Mitigation

Monitoring as outlined above

CA Recommendation

Monitoring as outlined above condition for archaeological monitoring.

Turbine Delivery Routes

Archaeology

A temporary staging area is proposed for the transfer of turbine blades inside the southern boundary wall and within the demesne area of the Drishane Castle a 15th-century Castle and a National Monument in State Ownership (Nat. Mon. ref 296) and County House. The eastern access to the staging area will require a breach in a section of a modern boundary wall. A review of historic OS maps shows the staging area location as open demesne landscape.

EIAR proposed Mitigation

A pre-works geophysical survey followed by targeted archaeological test trenching will be carried out in advance of these ground works in the hard stand area within the demesne of Drishane Castle.

CA

Clarification is required to establish if the temporary staging area is to be removed on completion of the projects and the area returned to a green field pasture given its location within the demesne landscape of Drishane house.

I concur with the mitigation measures as outlined in Section of Chapter 14.5 of EIAR, it is recommended the mitigations as amended below is attached as a condition of planning:

1. Prior to the commencement of the development the applicant is required to engage the services of a suitably qualified archaeologist, under licence from the National Monument Service (NMS)of the Department of Housing, Local Government and Heritage, to carry out a geophysical survey of the green field area for the temporary hardstand in the southern end of the Drishane Castle demesne followed by archaeological test trenching.

2. All ground works within other green field areas required to accommodate the turbine delivery route will be subject to licenced archaeological monitoring by a suitably qualified archaeologist.

Cultural heritage

The turbine delivery will require the removal of an undesignated vernacular mid/late 19th century small masonry (culverted) road bridge. The road and bridge is not shown on the 1840's OS map. It is of cultural heritage importance and consideration should be given to its retention using the horizontal drilling techniques used elsewhere

EIAR proposed Mitigation

Prior to the removal of the small, late 19th century road bridge/culvert in Ballynagree East townland to facilitate turbine delivery, an archaeological record of the structure, in written, drawn and photographic formats, will be carried out. All ground works at this location will then be subject to archaeological monitoring.

CA Recommendation

It is recommended the Cultural heritage features – the vernacular culverted bridge is retained by horizontal drilling adjacent to or under the bridge.

Biodiversity Enhancement Lands

There are three recorded archaeological sites located within open fields in the landholdings and these comprise two fulacht fiadh and one stone row will not be negatively impacted by the Biodiversity plan.

No mitigation required.

Mary Sleeman

Máire Sleeman | Oifigeach Seandálaíochta | Pleanáil agus Fobairt
Comhairle Contae Chorcaí | Halla an Chontae | Corcaigh | T12 R2NC | Éire
Mary Sleeman | Archaeological Officer | Planning & Development
Cork County Council | County Hall | Cork | T12 R2NC | Ireland

Environmental Report (Air, Noise, Vibration)

Prepared For: Ballinagree Wind Farm, County Cork.

Strategic Infrastructure Development Project

An Bord Pleanala Ref. No: ABP-312606-22

AIR

Chapter 6 of the submitted Environmental Impact Assessment (EIS) and associated Appendix deals with Air. The chapter details the various European Directives and National regulations in relation to Air quality as per section 6.1.2 and the associated resultant pollutant limit values as detailed per Table 6.1 and 6.2 of the documentation. It is submitted as per section 6.2.1 that a review of the existing air quality monitoring data undertaken by the Environmental Protection Agency was undertaken and used to characterise the existing Environment. In terms of European air quality legislation Ireland is divided into 4 zones. The proposed wind farm and grid connection are located in Zone D. The majority of the turbine delivery route is in zone D with a small section in Zone C. It is submitted as per Section 6.4.2.1 that the principle sources of potential air emissions during the construction of the proposed project will be from the wind farm, grid connection route and turbine delivery route, from dust arising from earthworks, tree felling activities, trench excavation along cable routes, construction of the new access tracks, the temporary storage of excavated materials, the construction of the proposed substation, the movement of construction vehicles, loading and unloading of aggregates/materials and the movement of material around the site.

The submission makes reference to the National Roads Authority (NRA) assessment criteria used for assessing the impact of dust from construction activity sites of varying scales. This criteria is outlined per submitted table 6.11. Based on the application of this criteria, the overall construction of the proposed wind farm is considered a major construction site. However, it is submitted that given the distance between the nearest receptor (c 809 metres from the site boundary), the soiling, deposition or vegetation effects will not be experienced.

The construction of the proposed grid connection route is considered a moderate construction site as it will result in soiling effects which have the potential to occur up to 50m from the source, with PM_{10} deposition and vegetation effects occurring up to 15m from the source. It is submitted that there are 20 residential dwellings located along the proposed 10.7 km grid connection route and that some houses may experience soiling and deposition of vegetation effects depending on how close to the road corridor they are located. However, it is submitted that due to the nature of construction along the proposed grid connection which works as a 'rolling' construction site, these effects are considered to be short term, temporary and slight.

The construction of the proposed turbine delivery route is considered a moderate construction site with the impacts considered to be short term and slight in significance.

When the proposed wind farm and grid connection are constructed it is submitted as per Section 6.4.2.2, that there will no significant direct emissions to atmosphere. A diesel generator will be located at the proposed wind farm substation; however this will only be operated as a backup/emergency power supply with infrequent emissions. The operational

phase of the grid connection which connects to and operates the proposed wind farm will result in positive impacts on air quality due to the displacement of fossil fuels as an energy source. In relation to decommissioning phase impacts, it is noted as per section 6.4.2.3, that the proposed grid connection infrastructure including substations and ancillary electrical equipment will form part of the national grid and will be left in situ.

Mitigation measures in respect of the construction phase are detailed as per section 6.5.1. and Appendix 3.1 of associated submitted documentation. These include amongst others;

* Prior construction and finishing of internal haul roads
* Provision of a water browser to spray work area
* Covering of loads with the potential for fugitive emissions
* Wheel washing facilities
* Re-vegation of earthworks and exposed stockpiles as soon as practicable
* Implementation of dust control plan
* Cleaning of the facades of dwellings that are exposed to dusting and soiling, if agreeable to landowner
*Servicing of vehicles and ensuring all vehicles switched off when stationary.

In respect of the operational phase, it is submitted as per Section 6.5.1.2 that mitigation measures are considered unnecessary as the operation of the proposed wind farm will have positive impacts on air quality.

In relation to residual effects, it is submitted as per Section 6.6.1 that following implementation of the mitigation measures, the proposed wind farm, grid connection and turbine delivery route work areas will result in slight to moderate residual impacts arising from fugitive dust emissions during construction activities involving excavations, felling or earthmoving. These it is submitted will be localised in nature and as they will be associated with particular elements of the construction phase, will be temporary in nature and will not result in any permanent residual impacts. It is also submitted that during operations, the proposed wind farm will result in the avoidance of emissions from fossil fuel generators which is a positive effect on air quality.

In respect of cumulative effects, it is submitted as per section 6.7, that negative cumulative effects in relation to air quality would only occur if a large development was located in the vicinity of the site and was being constructed at the same time. Specific projects and activities which are consented, ongoing or operational within the vicinity of the proposed wind farm project are outlined per Section 6.7. It is concluded and submitted as per Section 6.8 that there are no significant cumulative impacts expected on Air Quality as a result of other existing or proposed projects.

In the context of the potential dust nuisance impacts on receiving receptors that may have the potential to arise during the construction phase, it should be clarified by the developer if it is proposed or if any background dust monitoring has been conducted in the vicinity of the proposed development. This could be used to quantify the existing Environment and as a baseline for any future monitoring undertaken to support and evaluate the effectiveness of the proposed mitigation measures

NOISE & VIBRATION:

Having regard to the specific nature of Wind Farm noise impact assessment, I would respectively suggest that the Bord should seek their own acoustic expertise to peer review the methodologies and modelling followed in the noise impact assessment. It is not in any way questioning the competency of the author of the submitted noise impact assessment report.

Chapter 7 of the submitted Environmental Impact Assessment (EIS) and associated Appendices contains an assessment of the potential noise and vibration impacts associated with the proposed development. The Environmental Impact assessment describes the methodology and modelling employed in the assessment of noise associated with the proposed development as well as the potential impacts of noise. Vibration associated with the proposed development is also discussed in this chapter. It is submitted as per section 7.2.1 and 7.2.4 that due to the sufficient distance to noise sensitive locations during the construction and operational phase, vibration will not be perceivable by residents at their dwellings with the possible exception being the use of pneumatic breakers during grid connection works which is discussed in the assessment of noise and vibration from same. Potential vibration from the operation of the proposed substation has also been scoped out as per Section 7.2.4 on the basis that the nearest vibration sensitive location is over 1 km from the proposed substation.

It is submitted as per section 7.3.2 that construction and decommissioning noise have been assessed by comparing predicted construction activities against best practice construction noise criteria at the nearest residential dwellings to the construction activities. The operational noise study area includes all noise sensitive dwellings within the 35 dB(A) L_{A90}. It is submitted as per Section 7.3.2 that adjacent wind farms have been considered in the cumulative assessment and the operational study area of 35 dB L_{A90} includes the noise emissions from adjacent wind farms (Carraigcannon, Bawnmore, Boggeragh 1 and 2, Esk).The operational study area is presented in Figure 7.1 and includes 672 noise sensitive locations, 67 of which are directly related to the noise emissions from Ballinagree Wind Farm only.

In terms of providing clarity it would be beneficial if a noise contour map was included, detailing the study area relative to the proposed turbines. In addition, the respective locations and distances of all noise sensitive receptors within 500m,1000m, 1500m and 2000m of the turbines should be presented and quantified, with all occupied, unoccupied and permitted dwellings identified. Any dwellings that have a specific interest in the project and are associated with it should also be highlighted.

In terms of construction noise, evaluation and designation criteria is detailed as per Section 7.3.3 and follow up sections with noise predictions undertaken to determine the likely impacts of the construction works. The specific construction threshold limits applied are detailed and outlined as per Table 7.1, page 12 of 67 (Threshold of potential significant effect during construction and decommissioning) of the submission. The nearest residential dwellings to the proposed project are afforded Category A designation (65 dB L_{Aeq}, 1 hr during daytime periods). It is proposed that there will be turbine deliveries at night-time to facilitate project programme and to facilitate appropriate traffic and transportation management. It is submitted that at a worst case this will occur up to twice a month during months 9-15 of the proposed construction programme, and may extend over a 7 month period. It is anticipated that there will be up to 6 vehicles per convoy.

Section 7.5.2 provides an assessment of construction activity in relation to the site. Noise predictions were undertaken to determine the likely impact during construction works. 1t is submitted as per pg 25 of 67 of the documentation that the construction noise model assessed several tasks with the potential to generate noise. These included deliveries and/or removal of material to and from the site, felling, preparation of access roads, excavation of material from a borrow pit, preparation of hardstands and drainage, excavation of foundations, pouring of foundations and installation of wind turbines. The off -site works assessed included: works associated with grid connection, directional drilling at 4 no. locations along the proposed grid route and works at the TDR nodes.

The predicted noise levels at the nearest receptors to the specific task are discussed and detailed as per pages 25-32 of the submission and corresponding tables 7.6 -7.12. It is noted that no blasting will be required in respect of the borrow pits and that it is expected that a rock breaker and crusher will be required as a worst-case scenario.

In respect of site traffic it is noted that that based on the scenario assessed there is potential for the night criteria adopted as set out in Section 7.3.3.1 to be exceeded at properties within 40 m from the road edge. Similarly, it is noted as per Table 7.12 in respect of the grid connection works, that in some instances the maximum predicted levels may be above the applied and adopted construction noise daytime limit of 65 dB $L_{Aeq\ 1\ hr}$. It is submitted that these elevated noise levels will only occur for short durations at a limited number of dwellings. Mitigation is proposed which includes the usage of a temporary barrier or screen in cases where the works are to occur over an extended period. In terms of clarification, the potential overall number and location of dwellings impacted as per above should be confirmed.

Noise mitigation measures to be employed during the construction phase are discussed per section 7.6 of the submitted documentation and the relevant section of the Construction Environmental Management Plan. These include measures such as all vehicles and mechanical plant being fitted with effective exhaust silencers and maintained in good working order. Machinery that is used intermittently being shut down or throttled back to a minimum when not in use, limiting the number of plant items operating simultaneously where reasonably practicable. The restriction of movements along access routes to standard working hours unless specifically otherwise agreed. With mitigation measures it is submitted that the construction and decommissioning noise levels are likely to be below the applied noise limit for operations exceeding 1 month and therefore construction and residual impacts are not considered to be significant.

It respect of potential cumulative construction phase impacts, it is submitted as per section 7.5.5.1. that it is not expected that there will be cumulative impacts with other large or small scale developments in the vicinity of the proposed wind farm given the distance between the developments and nature of the works proposed as part of these developments.

In terms of establishing the background noise levels of the area, it is submitted as per Section 7.5 that baseline noise monitoring was undertaken at 17 receptor locations surrounding the proposed Ballinagree Wind Farm to establish the existing background noise levels in the vicinity of the proposed project. These are shown in Figure 7.2, and details of the monitoring locations are described in Table 7.3 of the submission. The rationale for the selection of these locations is described in Appendix 7.1 which also includes details on the baseline measurement and data analysis. Again, in the interest of clarity, the specific referenced noise

sensitive receptors that each noise monitoring location is considered to be representative off should be quantified and also shown on a suitably scaled map.

Following a review of the baseline data, the prevailing background noise-daytime periods at 15 selected noise monitoring locations are presented in Tables 7.4. It is noted and detailed as per section 7.4.1. that data in respect of monitoring locations N13 and N16 was removed. I have not had sight of the prevailing corresponding background night-time levels in the submitted documentation.

Derivation of wind farm noise limits is undertaken as per Section 7.4.2. with derived day and night time noise limits adopted outlined per Table 7.5. It is noted that the actual turbines to be installed at the proposed wind farm will be the subject of a competitive tender process and may include turbines not amongst the turbine models currently available. It is however also submitted as per page 36 of Chapter 7 that regardless of the make or model of the turbine eventually selected for installation on site, the noise it will give rise to will be within the assessment range.

Predicted noise levels during operation are presented as per Section 7.5.3. and Table 7.17 presents predicted noise levels adjacent to 28 receptor locations closest to the wind farm and at controlling properties adjacent to neighbouring wind farms. The predicted noise levels at all receptor locations are presented in Appendix 7.5. Table 7.17 also presents derived daytime and night time noise limits at each of these locations. It is submitted that predicted noise levels from the proposed project are all below the day time and night time noise limits for all hub heights within the range proposed. It is also noted that at some receptor locations, a new source of noise will be introduced into the soundscape and it is expected that there will be a long term moderate significance of impact on the closest dwelling to the proposed wind farm.

The cumulative impact from other nearby operational and consented wind farms is assessed in Section 7.5.5.2. Table 7.18 presents predicted cumulative noise levels adjacent to 28 receptor locations closest to the wind farm and at controlling properties adjacent to neighbouring wind farms with the predicted cumulative noise levels at all receptor positions presented in Appendix 7.6.

It is submitted that the predicted cumulative noise levels comply with the daytime and night time limits at the majority of noise sensitive locations. However exceedances are observed at receptor R777 during daytime periods at standardised 10m height wind speeds 7 and 8 m/s. It is also submitted that the noise modelling assumed that this receptor is downwind of all turbines which in practice will not be physically possible and the actual noise at the receptor will be lower. Mitigation measures are outlined in Section 7.6.2. Exceedances are also observed at receptor R2340 during day time and night time periods at wind speeds of 8 m/s and above. It is further submitted that the dominant noise at this receptor is from ESK Wind Farm and Boggeragh 2 wind farm. Mitigation is again outlined as per Section 7.6.2.

In respect of residual impact, these are discussed under section 7.7. It is stated that with mitigation measures, cumulative operational noise levels of the proposed wind farm and adjacent wind farms meet the daytime and night time noise limit derived using the Wind Energy Development Guidelines 2006 and are therefore not considered to be a significant impact. It is also noted, however that for some receptors a new source of noise will be introduced into the soundscape, and it is expected that there will be a alight to moderate

significance of impact, with dwellings closest to the project with a long term moderate significance of impact.

Items the Bord may request or seek further clarification on:

AIR

1.) In the context of dust nuisance/soiling impacts on receiving receptors that may have the potential to arise during the construction phase, it should be clarified by the developer if it is proposed or if any background dust monitoring has been conducted in the vicinity of the proposed development. This could be used to quantify the existing Environment and as a baseline for any future monitoring undertaken to support and evaluate the effectiveness of the proposed mitigation measures.

NOISE & VIBRATION

1.) A noise contour map detailing the study area relative to the proposed turbines. In addition the respective locations and distances of all noise sensitive receptors within 500m, 1000m,1500m and 2000m of the turbines should be presented and quantified, with all occupied, unoccupied and permitted dwellings identified. Dwellings that have a specific interest in the project and are associated with it should also be highlighted. For the purpose of completion the number of receptors that were identified as farm buildings or unoccupied derelict buildings and were not considered as part of the impact assessment and not assessed against the derived daytime and night time noise levels should also be quantified and indicated

2.)The referenced noise sensitive receptors that each background noise monitoring location is considered to be representative off should be quantified and also shown on a suitably scaled map. A clear trail should be presented and evident between the selected background noise monitoring locations, the clusters of identified sensitive receptors they are deemed to be representative off and the background noise levels for each of the selected noise monitoring locations.

3.) The background night-time noise levels and at each of the selected noise monitoring locations should be clarified.

4.) In relation to construction noise impact, It is noted as per Table 7.12 in respect of the grid connection works, that in some instances the maximum predicted levels may be above the applied and adopted noise limit of 65 dB $L_{Aeq\ 1\ hr}$. It is submitted that these elevated noise levels will only occur for short durations at a limited number of dwellings. Mitigation is proposed which includes the usage of a temporary barrier or screen in cases where the works are to occur over an extended period. In terms of clarification, the potential number and location of dwellings impacted should be confirmed. Similarly in relation to site traffic as discussed per pg 25 of 67 of the submission, it is noted that '…there is potential for the night criteria as set out in Section 7.3.3.1 to be exceeded at properties within 40m of the road edge..' Again the number of properties potentially impacted should be clarified.

Suggested Conditions:

1.) The relative rated wind turbine noise levels ($L_{Arated,10\ min}$) arising from the development, by itself or in combination with any other permitted wind energy development in the vicinity, shall not exceed:

(A) Where background noise levels ($L_{9010\ min} \geq 30$ dB(A))

(i) 5dB (A) above background noise levels or
(ii) 43 dB(A) $L_{90\ 10\ mins}$

(B) Where background noise levels ($L_{9010\ min} < 30$ dB(A)

(ii) 37 dB(A) $L_{90\ 10\ mins}$

when measured externally at noise sensitive locations.

Reason: In the interest of residential amenity.

2.) A noise compliance monitoring programme shall be submitted for agreement with the planning authority within 3 months of the commissioning of the development. All results should be submitted to the Planning Authority within 1 month of the completion of any survey. The developer shall carry out any additional noise mitigation measures as may be deemed necessary following a review of such survey.

Reason: In the interest of residential amenity.

3.) A designated member of the company's staff shall interface with the Planning Authority or member of the public in the event of complaints or queries in relation to environmental emissions. Details of the name and contact details and the relationship to the operator of this person shall be available at all times to the Planning Authority on request whether requested in writing or by a member of staff of the Planning Authority at the site.

Reason: In the interest of residential amenity.

4.) The construction of the development shall be managed in accordance with a Construction Environmental Management Plan which shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of development. In relation to air and noise, this plan shall provide details of the construction practice for the development including;

(a) Proposals for the suppression of on-site noise

(b) Proposals for the suppression of dust on site

(c) Proposals for the suppression of any vibration

(d) Proposals to minimise any odours.

This plan shall include a comprehensive monitoring plan to include inter alia noise and dust with regular reporting to the planning authority.

Reason: In order to protest the Environment and Local amenities during construction.

Report By: Andrw Mc Donnell,
Executive Scientist,
Environment Directorate,
Cork County Council.

Date: 21st March,2022.

Appendix B: Cork County Council Meeting 28th March 2022

MEETINGS ADMINISTRATOR'S RECORD OF PROCEEDINGS OF CORK COUNTY COUNCIL HELD IN THE CHAMBER AND VIA MS TEAMS ON AT 11am ON 28th MARCH 2022.

THE PLANNING & DEVELOPMENT ACT 2000 (AS AMENDED) & PLANNING & DEVELOPMENT (STRATEGIC INFRASTRUCTURE) ACT 2006:

Consideration of the Planning Authority's report to Elected Members in accordance with the requirements of Section 37E (4) and 37E (5) of the Planning and Development Act 2000 (as amended). Strategic Infrastructure Development Application – Ballinagree Wind DAC for the construction of up to 20 Wind Turbines.

Michael Lynch, Director of Services told the meeting that the Planning Authority's report to An Bord Pleanála had been prepared in accordance with the requirements of Section 37E (4) and 37E (5) of the Planning and Development Act 2000 (as amended) on the Strategic Infrastructure Development application to An Bord Pleanála from Ballinagree Wind Farm DAC for the construction of up to 20 No. Wind Turbines. Mr. Lynch brought attention to an error in wording on page 1 of the report that said *"Planning Authority report to An Bord Pleanála in accordance with Section 182A of the Planning and Development Acts (as amended)."* He said this should have been worded *"Planning Authority report to An Bord in accordance with the requirements of Section 37E (4) and 37E (5) of the Planning and Development Act 2000 (as amended)"* and that this will be amended before the report is submitted to An Bord Pleanála.

Mr. Lynch outlined the Chief Executive's Report. He stated the proposed windfarm is located in a number of townlands around Ballinagree. He said the project involved the construction of 20 turbines and all related site works and ancillary development. Mr. Lynch said it is required under the planning guidelines to identify the strategic issues. He outlined the effects of the proposed development on the environment of the area. He stated Cork County Council recommended that 4 turbines be omitted from the development.

He said the report was presented to Members for their consideration and that he was seeking the views of the Members on the proposed development.

The S/Chief Executive said that this application was discussed at a recent Development Committee meeting. The Planning Authority must submit a report to An Bord Pleanála and Members can, by resolution, append recommendations to the report to An Bord Pleanála. The Meetings Administrator record of the meeting will also be attached to the report.

During a discussion, Members made the following points:

- Members stated that there were some community opposition. Therefore, it was necessary that they be kept updated.
- Members sought clarity on the numbers (4 or 6) of wind turbines being removed from the development due to ecology impacts.
- Members asked if it was still possible for the public to submit objections.

- Members noted that Macroom MD has many windfarms in the area. They stated that as the public consultation was done during Covid, it was not ideal.
- Members stated that it is important that An Bord Pleanála takes the Council's conditions into account if it grants permission.
- Members recommended that the Bond be raised from €300,000 to €1m to reinstate the road. They stated the whole width of the road should be resurfaced as cabling will be laid underneath.
- Said that no one is against Green Energy but proper consultation is needed with the community.

Mr. Lynch stated that if the Planning Department was the decision maker, it would address these conditions but this is the decision of An Bord Pleanála. He said that currently one of the conditions is to remove 4 of the turbines. He stated that the Area Engineers have calculated a Bond of €300,000 that they consider appropriate.

- Some Members recommended an amendment to the Chief Executive's report recommending the Bond be increased to €1m.
- Other Members stated the Bond should remain at €300,000 as the Area Engineers recommended this.
- Members suggested there was no need to raise the Bond, as it was noted that roads were always reinstated after works.
- Asked if it was appropriate for Members to raise the Bond and if advice was needed to decide.
- The Mayor stated it was important to note that it is only a recommendation that is being put forward, but that Members were flagging a concern about road conditions.
- Main goal is to make sure there was enough money to resurface the road afterwards.

Proposed by Councillor Kay Dawson

Seconded by Councillor Michael Looney

RESOLVED:

Noting construction price inflation in relation to the significant roadworks that will be required when the wind turbines are erected, this Council recommends that sufficient funds are made available by the developer to the Council for the re-instatement of roads by way of Bond or other means, and that this recommendation is attached to the Planning Authority's report to An Bord Pleanála together with the Meetings Administrator's record of the meeting.

I certify the foregoing to be a true extract from Minutes of proceedings at Council Meeting held on 28th March 2022.

ENDA O'HALLORAN

S/SENIOR EXECUTIVE OFFICER
DATED: 29th March 2022