Inspector's Report

ABP-316212-23

Development	Proposed development of Ballivor windfarm 26 no. wind turbines and associated works
Location	The Ballivor Bog Group, Co. Meath and Co. Westmeath.
Planning Authorities	Meath County Council & Westmeath County Council.
Applicant(s)	Bord na Móna Powergen Limited.
Type of Application	Application under the provisions of Section 37E of the Planning and Development Act 2000 as amended.
Prescribed Bodies	Development Applications Unit, Environnemental Protection Agency EPA Transport Infrastructure Ireland TII Department of Defence Fáilte Ireland Inland Fisheries Ireland IFI Office of Public Works OPW

Third Party Observers

1. Andy Apps, Lilian Zegarac & Masha Apps
2. Anne and Colin Finnegan
3. Catherine Doyle
4. Conor Milligan and Tamara Scarlett
5. Delvin-Raheny- Ballivor Wind Action Group
6. Diarmuid Priest
7. DRB Community CLG
8. Jesmond Harding on behalf of DRB Community CLG
9. Eco Advocacy
10. Friends of the Irish Environment
11. Ian Colgan
12. Irish Peatland Conservation Council
13. Jason and Anette Carney
14. John Dooley
15. John Miggin
16. John Milligan
17. John Paul Farrelly
18. Catherine Doyle
19. Daryl Kennedy
20. Killyon Community Development Association
21. Malgorzata Gbiorczyk
22. Mark McKeon
23. Mark Potterton
24. Michael and Elizabeth McKeown
25. Michelle Gerrity
26. Miriam Connolly
27. Nicola Clune and Others
28. Noeleen Kennedy
29. Oonagh Clarke and Ian McLoughlin
30. Patrick and Bridget Milligan and others
31. Paul and Ailish McKeown and on behalf of Michael Mc Keown
32. Peter Sweetman and on behalf of Wild Ireland Defence CLG
33. Regina Gardiner
34. Thomas Clune and Others
35. Tom Clune and Catherine Clune
36. Veronica O Reilly
37. Vincent & Linda Cunningham
38. Wildway Design Linda Gilsenan

	39. David Clarke 40. Nora Fagan
Date of Site Inspection	29th September 2023 19th February 2024
Inspector	Bríd Maxwell

Contents

1.0 Introduction

1.1 An application was received by the Board on 5th April 2023 for the construction of a windfarm (known as Ballivor Windfarm) under the provisions of Section 37E of the Planning and Development Act, 2000 (as amended). The application is being made by Bord na Móna Powergen Limited and includes 26 no. turbines, with a total megawatt capacity in the range of 117MW-169MW, two permanent meteorological anemometry masts, temporary construction compounds, two borrow pits, a permanent 110kV electrical substation, a 36m high telecom tower, associated underground electrical and communications cabling, internal site access and all other associated works. The proposed wind energy development is located within Ballivor, Bracklin, Lisclogher and Carranstown Bogs (part of the overall Derrygreenagh Bog Group) on the border of Counties Meath and Westmeath.

1.2 Pursuant to Section 37B of the Planning and Development Act, 2000 (as amended), the Board held pre-application discussions with the applicant on 7th September 2021 and 21st September 2021 (ABP-307471-20). The Board issued a Direction on the 5th April 2022 that the proposed wind energy development, would fall within the scope of Sections 37A(2)(a) (b) and (c) of the Act, and that a planning application should be made directly to the Board. The current application is for a 10 year permission with a proposed 30 year operational life.

2.0 Site Location and Description

2.1 The site of the proposed development is located on Ballivor Bog, Carranstown Bog, Bracklin Bog, Lisclogher bog and agricultural land adjacent to Bracklin Bog in the east of County Westmeath and the west of County Meath. The application site encompasses an area of approximately 1,170 hectares and also comprises two areas of temporary accommodating works along the proposed haul route. The proposed development is proposed within the following townlands, Bracklin, Clondalee More, Clonleame, Clonmorrill, Clonycavan, Cockstown, Coolronan, Craddanstown, Derryconnor, Grange More, Killagh, Lisclogher Great, Riverdale, and Robinstown.

Haul route temporary accommodating works areas are within the townlands of Moyfeagher and Doolystown.

2.2 The site measures approximately 9 kilometres (km) in length from north to south and approximately 6km from east to west, at its widest point with a topography range between 70 metres above ordnance datum (mAOD) at its lowest point to approximately 79m AOD at its highest point. The closest settlements to the site are Delvin located approximately 5km to the north, Raharney 4km to west and Ballivor 3.5km east. In relation to larger settlements the site lies approximately 17km east of Mullingar, 13km west of Trim and 22km southwest of Navan.

2.3 Landcover within the application site boundary is a mixture of bare cutaway peat, revegetated bare peat, degraded blanket bog, scrub, low woodland and remnants of high bog. Approximately 18.9km of Bord na Móna permanent fixed gauge rail lines run through Ballivor, Bracklin and Carranstown Bogs. Surrounding the site are Bord na Móna landholdings, forestry, agricultural land, cutover and cutaway peatland, one off rural housing and small village settlements.

2.4 Current activities on site include site management and environmental monitoring as required under IPC licence PO-501 from the EPA and temporary wind measurement (via a single 100m meteorological mast on Lisclogher Bog). Condition 10 of the IPC licence requires production of peatland rehabilitation plans on cessation of abstraction. Active peat extraction under IPC licence no P0501-01 ceased in June 2020. Previously extracted stockpiled peat continues to be removed off the bogs and application documents suggest that this is expected to be completed by 2024. The Peatland Climate Action Scheme (PCAS) was carried out at Carranstown East. adjacent to the proposed Wind Farm Site Boundary. This enhanced peatland rehabilitation was completed in 2022. Bracklyn West, also adjacent to the site, has likewise been selected for PCAS and application documentation indicates commencement in 2023.

2.5 In terms of existing electricity grid infrastructure in the area the 110kV Mullingar to Corduff overhead line traverses the site at Carranstown Bog. As regards the road network, the site is accessed by regional and local roads. In addition, the N51 National Secondary Road is located approximately 3 kilometres to the north of the site. The main access points to the bogs are located to the north and south of the R156 approximately 4km west of Ballivor village.

2.6 As regards European Sites in the vicinity the River Boyne and River Blackwater SAC (Site Code 002299) and River Boyne and Blackwater SPA 004232 are located circa 400m from the site and 1.1km downstream of the site boundary. There are a number of other European sites in the wider area including:

Mountheavey Bog SAC 002342 3.4km S.

Girley (Drewstown) Bog SAC (002203) 10.3km NE

Wooddown Bog SAC 002205 11.4km W

Lough Lene SAC 002121 13km NW

Lough Bane and Lough Glass SAC 002120 13.4km NW

Lough Derravaragh SPA 004030 15.8km NW

Lough Owel SAC 00688 13.8km W

Lough Owel SPA 004047 13.8.km W

White Lough. Ben Loughs and Lough Doo SAC (001810) 15km NW

Boyne Coast and Estuary SAC 48km NE

Lough Ennel SPA 004044 19.8km SW

Lough Ennel SAC 00685 19.8km SW

Garriskil Bog SPA 004102 25.2km

Lough Iron SPA 004046 24.4km

2.7 There are also a number of areas of archaeological and historic interest in the vicinity. Application documentation notes that there are one hundred and forty one monuments

within 5km of a proposed turbine, two of which are within 1km. National Monuments in the wider area include Delvin Castle located 5km to the northwest, Raharney Ringfort 4.3km to the west and Donore Castle 4.6km to the south east and Trim Castle which is located 14.5km east. Frewin Hill (Watstown) is located 23 km to the west. The Hill of Tara is located within 25.8km.

2.8 The immediate area adjacent to the site to the northeast has the benefit of planning permission for a wind farm development (Bracklyn Wind Farm ABP.311565 comprising 9 no turbines with a tip height of 185m[1]). I note that an application for leave to apply for substitute consent for historic peat extraction on these lands (Ref ABP311646-21) was withdrawn on 15/1/2024 following commencement of amending legislation. Planning and Development, Maritime and Valuation (Amendment) Act 2022.

3.0 Proposed Development

3.1 The application sets out the detail of the proposal which in summary involves :

- the construction of 26 no wind turbines and all associated hard standing areas with a total blade tip height of 200m, hub height 115m and rotor diameter 170m.
- 2 no permanent meteorological anemometry masts with a height of 115m and associated hardstanding area and removal of existing meteorological mast.
- 4 no temporary construction compounds with temporary site offices and staff facilities, in the townlands of Bracklin and Grange More.
- 5 no temporary security cabins at the main construction site entrances and access points around the site, in the townland of Killagh, Grange More and Coolronan.

[1] Refer to Planning History Section 5 for detail.

- 2 no borrow pits located in the townland of Grange More and Craddanstown and all works associated with the opening, gravel and spoil extraction and decommissioning of the borrow pits.
- 1 no permanent 110kV electrical substation which will be constructed in the townland of Grange More. The electrical substation will have 2 no single storey control buildings, a 36m high telecom tower, associated electrical plant and equipment, a groundwater well and a wastewater holding tank.
- All associated underground electrical and communications cabling connecting the turbines and masts to the proposed electrical substation including road crossings at R156 and local road between Lisclogher and Bracklin Bogs, and all works associated with the connection of the proposed wind farm to the national electricity grid by way of connection into the existing Mullingar-Corduff 110kV overhead line that traverses the site.
- Provision of new internal site access tracks with passing bays measuring a total length of c28km and provision/upgrade of existing /new pathways for amenity uses measuring a total length of 3.3km and associated drainage.
- Temporary accommodating works to existing public road infrastructure to facilitate delivery of abnormal loads at locations on the R156 and R161 in the townlands of Dollystown and Moyfeagher.
- Accommodation works to widen existing site entrances off the R156 into Ballivor and Carranstown Bogs and reopen entrances at Lisclogher and Bracklin Bogs for use as construction site entrances and to facilitate delivery and movement of turbine components and construction materials, entrances will be used for maintenance and amenity access during the operational period.
- Permanent vertical realignment of the R156 in the vicinity of the site entrance to achieve required sightlines.
- Construction of permanent site entrances off a local road into Lisgclogher and Bracklin Bogs to facilitate a crossing point for turbine components, construction materials and operation / amenity access.

- Provision of amenity access and amenity pathways using existing entrances off the R156 and local roads in the townlands of Bracklin,Coolronan, Clondalee More and Craddanstown.
- 3 no permanent amenity car parks in Ballivor Bog (50 no car parking spaces), Carranstown (15 no car parking spaces) and Bracklin Bog (15 no car parking spaces) and the provision of bicycle rack facilities at each location.
- All associated site works and ancillary development including access roads, drainage and signage.
- A 10 year planning permission and 30 year operational life of the wind farm from the date of commissioning of the entire wind farm is proposed.

3.2 Vehicular access to the internal road network will be only for maintenance and service vehicles. The entrance to the internal roads will be locked when not in use for this purpose. Approximately 30km of internal road network will have a dual function of providing access for service and maintenance and amenity trails. 3.3km of new/upgraded dedicated amenity paths will be provided. A public car park with 50 spaces will be provided on the northern edge of Ballivor bog for amenity use. Two further amenity car parks with 15 spaces each will be provided in the northeast of Bracklin Bog and in Carranstown Bog. Each car park to be provided with bicycle rack facilities. (Refer to Appendix 4-4 Ballivor Wind Farm Amenity Plan.)

3.3 Arising from obligations set out in condition 10 of the IPC licence (Ref P0501-01) decommissioning and habitat rehabilitation work is currently underway on the site. Application details indicate that the area within the redline boundary and outside of the windfarm footprint will be rehabilitated to aid regeneration of natural habitats. (As outlined in Appendix 6-6 Cutaway Bog Decommissioning and Rehabilitation Plan (2022).

3.4 The 110kV electricity substation is proposed in the northwest of Carranstown Bog proximate to the existing Mullingar-Cordufff 110kV overhead line which traverses the site with access from the R156.

3.5 Four temporary construction compounds are proposed on site during the construction phase. One main compound at Ballivor bog, one substation compound and two smaller compounds in the townlands of Grange More, Craddanstown and Bracklin. Compounds will have bunded fuel storage to provide on site refuelling of construction vehicles. Five temporary security cabins will be installed within the site for the duration of construction phase located close to the proposed temporary and permanent site entrances as well as site access points and at crossing points on local roads. Two borrow pits are proposed during the construction phase. One of these is on site in Carranstown bog and comprises an area of approximately 5 hectares (borrow pit 1a) with a small portion located to the east of a proposed access track (borrow pit 1b). Borrow pit 2 (5 hectares) is on third party land located to the southwestern boundary of Bracklin bog. Access from the windfarm to this borrow pit will be via a floating road through a section of un-cut raised bog in Bord na Móna ownership. Post construction the borrow pits will be reinstated with the original peat removed during borrow pit excavation.

3.6 Temporary works will be required along the proposed haul route at two locations (illustrated on figure 1-1). These lands are currently in agricultural use and mainly comprise grassland and associated hedgerows. Lands will be reinstated when turbine component deliveries have been completed.

3.7 Details of the proposed turbine design are set out in table 1 as follows:

Table 1. Turbine design details.

Hub height	115m
Turbine Tip height	200m

Blade rotor diameter	170m
Proposed Colour	Off white / light grey.

3.8 Table 2 sets out the precise turbine location details as follows:

Table 2. Turbine location details.

Turbine	ITM[2] X	ITM Y	Top of foundation level
1	665162	753511	75.3m AOD
2	665604	753275	73.9m AOD
3	665983	752965	73.9 m AOD
4	665796	752196	72.6 m AOD
5	665231	752587	73.1m AOD
6	664502	752692	72.2m AOD
7	665928	751694	72.4m AOD
8	665164	751792	72.9m AOD
9	664623	752007	74.4m AOD
10	663783	752452	74.1mAOD
11	663976	753121	75.0m AOD
12	664329	753719	78.1m AOD
13	663739	757007	73.8m AOD
14	663474	757496	74.9m AOD
15	662595	757805	78.1m AOD
16	662765	757323	74.9m AOD
17	662002	756804	79.0m AOD
18	661508	757054	77.0m AOD
19	665118	758520	73.3m AOD
20	665844	758647	73.2m AOD
21	664274	759054	73.3m AOD
22	664023	759553	75.2m AOD
23	664744	759727	75.0m AOD

[2] (ITM) Irish Transverse Mercator.

24	665464	759850	75.1m AOD
25	665735	759326	73.9m AOD
26	665028	759172	73.5m AOD

3.9 Turbine Foundations will be constructed by excavating peat to sub-formation level. Imported fill and blinding will be placed and compacted to formation level, and a reinforced concrete base will be cast in situ. The horizontal and vertical extent of turbine foundations are noted to be 26m and 4m respectively. Where ground conditions are unfavorable to excavate and replace, piles will be installed to formation level. Hardstanding areas around each turbine as demonstrated on submitted plans represent the maximum sizes required however the extent of the required areas at each turbine location may be optimized on site.

3.10 Regarding power output it is anticipated that the proposed turbines will have a rated electrical power output in the 4.5-6.5megawatt (MW) range depending on further wind data analysis and power output modelling. Based on an installed capacity range of 117MW to 169MW the proposal has the potential to produce between 300,302 and 433,769MWh of electricity per year.

3.11 A total length of 28 km of internal access road is to be constructed and which is to be used for amenity purposes during the operational phase. A further 3.3km of amenity only roads will form part of the windfarm design, 1.6km of which are new and the remaining comprising existing tracks to be upgraded.

3.12 The onsite electricity substation compound measures approximately 11,600m2. Two substation control buildings will be located within the compound and electrical components to enable export of electricity to the national grid. Each turbine will be connected to the onsite electricity substation via underground 33kV electricity cable. Fibre optic cables will also connect each wind turbine to

the wind farm control building in the onsite substation compound. Fibre optic cables running from the turbines to the onsite substation compound will be run in cable ducts approximately 1.2m below ground surface along the side or under the internal roadways. Grid connection will occur within the vicinity of the proposed substation via a new overhead line connecting to the existing Mullingar Corduff 110kV transmission line circa 35m north of the proposed substation within the development site boundary. Approximately 35m of overhead line and two lattice loop in loop out masts will be required to connect from the proposed substation to the existing overhead line.

3.13 Two permanent anemometry masts are included in the design of the proposed development. The anemometry masts, 115m in height, will be equipped with wind monitoring equipment at various heights.

4.0 Accompanying documents

4.1 The application is accompanied by the following information:

- Completed application form
- Landowner consent letters
- Planning application drawings
- Statutory notices
- Schedule of prescribed bodies
- EIA Portal confirmation notice
- Environmental Impact Assessment Report (EIAR):
    - Volume 1: Non-Technical Summary and Main report
    - Volume 2: EIAR Appendices
- Natura Impact Statement (NIS
- Standalone website: www.ballivorwindfarmplanning.ie

5.0 Planning History

Applications within the Derrygreenagh Bog Group

ABP311646-21 Application for leave to apply for substitute consent for historic peat extraction on these lands. Lodged 13/10/2021 and withdrawn on 15/1/2024 following commencement of amending legislation in the Planning and Development, Maritime and Valuation (Amendment) Act 2022.

307278 Application for substitute consent in relation to peat extraction in the Derrygreenagh Bog Group. Application withdrawn. 14/01/2021

306236-19 Leave to apply for substitute consent for peat extraction. Board's decision quashed by order of the high court. 07/08/2021

307471-20 Following the conclusion of consultations under section 37B of the Planning and Development Act 2000 as amended the Board decided on 4th April 2022 under section 37B(4)(a) that it is of the opinion that the proposed development falls within the scope of paragraphs 37(A)(2)(a) (b) and (c) of the Act. Accordingly the Board decided that the proposed development would be strategic infrastructure within the meaning of section 37A of the Planning Act 2000, and any application for permission for the proposed development must therefore be made directly to An Bord Pleanála under Section 37E of the Act.

15/6135 Permission granted Westmeath Co Council to erect a guyed wind monitoring mast, with instruments up to 100m in height at Lisclogher Bog. Granted 13/10/2015.

1662599 Permission granted to Westmeath Co Council to erect a guyed wind monitoring mast with instruments up to 100m in height. Granted 25/01/2017.

21620 Permission granted Westmeath County Council retention for continued use of an existing guyed wind monitoring mast with instruments. 100m in height on lands at Lisclogher Bog, Lisclogher Great, Co Westmeath for a further period of 3 years. Granted 23/2/2022.

311646 Application to An Bord Pleanála for leave to apply for substitute consent for peat abstraction activities. Ballivor Carranstown, Bracklin, Lisclogher and Lisclogher West Bogs.

Permitted Windfarms in the vicinity of the site.

Bracklyn PA 25M311565 9 Turbine windfarm and associated works, Bracklyn Co Westmeath 0.5-5km Granted 7/7/2022.

Yellow River PA19-PA 0032 10 year permission for 29 turbines total height up to 166m. Derryarkin and other townlands to the north of Rhode Co Offaly. Granted 3/6/2014.

Cushaling/Cloncant PL.19.306924 10 year permission for up to 8 turbines. Ballykillen, Shean Kilcumber Cloncant and Cushalin Edenderry Co Offaly. c24km south. Granted by the Board on appeal 23/9/2020. Under construction.

Cloncreen PA19PA0047. Cloncreen Windfarm up to 21 no turbines and associated work. Esker More and other townlands Co Offaly. 24km south. Operational.

Proposed windfarms in the vicinity of the site.

Public consultations have commenced in relation to the following:

- Milltown pass Proposed 7 no turbines and underground connection to Clonfad substation. (c 17km SW)
- Knockanarragh. Up to 8 no turbines. (c 10km NW)
- **ABP310143-21** Ballydermot and Other townlands Co Offaly and Lullybeg and other Townlands Co Kildare. Wind energy development comprising 50-55 no wind turbines. Pre application consultation ongoing.

6.0 Policy Context.

6.1 National Planning Framework (NPF), 2018

The NPF is a high-level strategic plan to shape the future growth and development of the country to 2040. It is focussed on delivering 10 National Strategic Outcomes (NSOs). NSO 8 focuses on the 'Transition to a Low Carbon and Climate Resilient Society' and recognises the need to harness both on-shore and off-shore potential from energy sources including solar and deliver 40% of our electricity needs from renewable sources.

It is stated in the NPF that “new energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system, harnessing both the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and connecting the richest sources of that energy to the major sources of demand”.

Section 5.4, ‘Planning and Investment to Support Rural Job Creation', notes that in meeting the challenge of transitioning to a low-carbon economy, the location of future national renewable energy generation will, for the most part, need to be accommodated on large tracts of land that are located in a rural setting, while also continuing to protect the integrity of the environment and respecting the needs of people who live in rural areas.

It is a National Policy Objective (NPO 55) to ‘promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050’.

6.2 National Energy Security Framework

Published in April 2022 – provides an overarching and comprehensive response to Ireland’s Energy security needs in the context of the war in Ukraine. The framework outlines the structures in place to monitor and manage energy supplies.

The framework outlines proposals to speed up the country’s shift to increased energy efficiency and indigenous renewable energy systems.

6.3 Climate Action Plan 2024

The Climate Action Plan 2024 approved in May 2024 is the third annual update to Climate Action Plan 2019 and the second to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021. It builds on the introduction of carbon budges and sectoral emissions ceilings in climate action plan 2023 and sets a course for Ireland’s targets to halve emissions by 2030 and reach net zero no later than 2050.

Central to achieving these goals is the strategic increase in the share of renewable electricity to 80% by 2030. This includes ambitious targets of deploying 9 GW of

onshore wind, 8 GW of solar power, and at least 5 GW from offshore wind projects. Ket targets for the electricity sector are set out in Chapter 12. These measures are vital not only for slashing electricity sector emissions but also for enabling the broader electrification of other sectors, thus multiplying the impact on overall emissions reductions. Climate Action Plan 2024 details the significant changes necessary to enhance the electricity grid's capacity and flexibility. This will accommodate the significant upsurge in renewable energy while ensuring the system's reliability and efficiency. Additionally, managing electricity demand through innovative policies and technologies is crucial for aligning energy consumption with cleaner production.

6.4 Ireland's National Energy and Climate Plan 2021-2030

The National Energy and Climate (NECP) Plan is an integrated document mandated by the European Union to each of its member states in order for the EU to meet its overall greenhouse gases emissions targets. The plan establishes key measures to address the dimensions of the EU Energy Union, including:

• To achieve a 34% share of renewable energy in energy consumption by 2030.

• To increase electricity generated from renewable sources to 70%.

6.5 Regional Spatial Economic Strategy (RSES)

The RSES for the Eastern and Midland region identifies renewable energy as one of five primary areas of transition at the core of the strategy representing a key challenges facing the region along with all other regions in the transition to a low carbon society.

I note RPO 10.20. "*Support and facilitate the development of enhanced electricity and gas supplies, and associated networks, to serve the existing and future needs of the Region and facilitate new transmission infrastructure projects that might be brought forward in the lifetime of this Strategy. This includes the delivery of the necessary integration of transmission network requirements to facilitate linkages of renewable energy proposals to the electricity and gas transmission grid in a sustainable and timely manner subject to appropriate environmental assessment and the planning process."*

6.6 Wind Energy Guidelines, 2006

These guidelines still constitute the official strategy guidance on wind farms under the provision of Section 28 of the Planning and Development Act 2000 (as amended). Advice is set out in relation to the design, siting, spatial extent, and height of turbines in various landscape character types. Details are also included for best practice for wind farm development on peatlands and flatland areas, and guidance is also provided on matters such as noise, shadow flicker, natural heritage, archaeology, architectural heritage, ground conditions, aircraft safety, wind take and potential cumulative effects.

6.7 Draft Wind Energy Guidelines, 2019

The Board will note that these guidelines are still in draft form and have not been officially adopted as official guidance. The Supreme Court held in Balz & Anor v An Bord Pleanála [2016] IESC 134, that while statutory guidelines (in this instance the 2006 guidelines) still in force and may be out of date was not an irrelevant planning consideration, and the Board in setting out its reasons and considerations in determining the application, should have given its reasons for not accepting the guidance set out in the 2019 Wind farm Guidelines.

6.8 Meath County Development Plan 2021-2027

6.8.1 Wind Energy Development is addressed at 6.15.3.2.

At 6.15.3.2 It is stated that “The Council will continue to support and encourage the principle of development of wind energy, in accordance with Government policy and having regard to the provisions of the Landscape Characterisation Assessment of the County and the Wind Energy Development Guidelines (2006) or any revisions thereof.

6.8.2 In relation to the Climate Change Strategy I note a number of key policy provisions:

INF POL 34

To promote sustainable energy sources, locally based renewable energy alternatives, where such development does not have a negative impact on the surrounding environment (including water quality), landscape, biodiversity, natural and built heritage, residential or local amenities.

INF POL 35

To seek a reduction in greenhouse gases through energy efficiency and the development of renewable energy sources utilising the natural resources of the County in an environmentally acceptable manner consistent with best practice and planning principles.

INF POL 36

To support the implementation of the National Climate Change Strategy and to facilitate measures which seek to reduce emissions of greenhouse gases.

INF POL 41

To encourage the development of wind energy, in accordance with Government policy and having regard to the Landscape Character Assessment of the County and the Wind Energy Development Guidelines (2006) or any revisions thereof.

INF POL 42

To support the identification, in conjunction with EMRA, of Strategic Energy Zones, areas suitable to accommodate large energy generating projects within the Eastern and Midlands Regional area.

INF OBJ 39

To support Ireland's renewable energy commitments outlined in national policy by facilitating the development and exploitation of renewable energy sources such as solar, wind, geothermal, hydro and bio-energy at suitable locations within the County where such development does not have a negative impact on the surrounding environment (including water quality), landscape, biodiversity or local amenities so as to provide for further residential and enterprise development within the county.

INF OBJ 47

To investigate the preparation of a Renewable Energy Strategy promoting technologies which are most viable in the County.

6.8.3 Chapter 11. Development Standards

DM Policy 27 “To encourage renewable development proposals which contribute positively to reducing energy consumption and carbon footprint.

DM OBJ 76:

In the assessment of individual energy development proposals, the Council

will take the following criteria into account:

•The proper planning and sustainable development of the area;

•The environmental and social impacts of the proposed development;

•Traffic impacts including details of haul routes;

•Impact of the development on the landscape, (please refer to Appendix 5 Landscape Character Assessment);

•Impact on protected Views and Prospects, (please refer to Appendix 10 Protected

Views and Prospects);

11.8.3 Wind Energy

The Council require that any pre-application discussion and/or planning application proposal for wind farm development sets out how the project complies with DM POL 27 and DM OBJ 76

The Council will support appropriate innovative designs for wind farms. Topographical enclosures and extensive areas of degraded or previously developed lands should be identified for wind farm development to help minimise visual impacts and to harmonise wind turbines with the landscape.

In general, matt finishes and neutral colours for turbines and structures are required. All planning applications shall be accompanied by detailed proposals for the restoration of the site after removal of the turbines and associated infrastructure including access roads.

Adequate financial security will be required to ensure site restoration and removal of the wind farm.

DM POL 28:

To require compliance with the Wind Energy Development Guidelines, (2006) and Circular PL20-13, and any updates thereof. Any proposal shall be supported by

both a technical and an environmental statement prepared to an acceptable standard which sets out how the proposal complies with the Guidelines.

DM OBJ 78:

To require that any pre- application discussion and/or planning application proposal for wind farm development sets out how the project complies with DM POL 28.

DM OBJ 79:

Topographical enclosures and extensive areas of degraded or previously developed lands should be identified for wind farm development to help minimise visual impacts and to harmonise wind turbines with the landscape.

DM OBJ 80:

In general, matt finishes and neutral colours for turbines and structures are required.

DM OBJ 81:

The Council will support appropriate innovative designs for wind farms.

DM OBJ 82:

All planning applications shall be accompanied by detailed proposals for the restoration of the site after removal of the turbines and associated infrastructure including access roads. Adequate financial security will be required to ensure site restoration and removal of the wind farm.

6.8.4 In relation to landscape policy I note Policy HER 52 To protect and enhance the quality character and distinctiveness of the landscapes of the County in accordance with national policy and guidelines and the recommendations of the Meath Landscape Character Assessment (2007) in Appendix 5, to ensure that new development meets high standards of siting and design."

In relation to Landscape Character Areas, (Appendix 5) the proposed development is located in “lowland Areas” landscape character type and LCA 15 South West Lowlands, described as

“The area is characterised by rolling hills interspersed with beech copses and well-wooded hedgerows dividing rough pasture. The main transport routes are the N4 from Enfield to Kinnegad and the Royal Canal (a tourist route). This is one of the more remote areas of Meath with only the village of Clonard servicing a large area. Pasture farmland is dominant although there is rough pasture in the upland areas interspersed with a mix of woodland plantations, small copses and scrubby woodland more prevalent in the south west. Fields are small to medium sized and enclosed with well-wooded hedgerows.”

LCA 15 has an assigned “High” landscape value, “Medium” landscape sensitivity and “regional” landscape importance.

6.8.5 Chapter 8 of the Meath County Development Plan sets out the Cultural and Natural Heritage Strategy. The County’s wealth of built heritage makes it exceptional in Ireland including the UNESCO World Heritage Site of Brú na Bóinne, the site of the High Kings of Ireland at Tara, Passage tombs of Loughgrew the largest Anglo Norman castle in Europe at Trim, historic towns of Navan Trim and Kells. Great country houses demesne landscapes and a significant industrial heritage of canals and mills.

Her Pol 6 To protect the outstanding universal value of the UNESCO World Heritage Site of Brú na Bóinne in accordance with the relevant guidelines and national legislation, so that its integrity, authenticity and significance are not adversely affected by inappropriate development or change.”

Tara Complex as part of the Royal Sites of Ireland (Cashel, Dún Ailinne, Hill of Uisneach, Rathcroghan Complex and Tara Complex) and Kells as part of the Early Medieval Monastic Sites (Clonmacnoise, Durrow, Glendalough, Inis Cealtra, Kells and Monasterboice.

Her Policy 12 “To recognise and respect potential World Heritage Sites in Meath on the UNESCO Tentative List – Ireland.”

Her Objective 13 To support the state in the nomination process of Tara and Kells to World Heritage Status as part of an assemblage of Royal and Monastic Suites in co-operation with the relevant Local Authorities."

Landscape Conservation Areas.

Her Policy 54 is "To protect the archaeological heritage, rural character, setting and amenity of the Tara Landscape and Loughcrew and Slieve na Calliagh Hills."

Objective HER 56 To preserve the views and prospects listed in Appendix 10 in Volume 2 and on Map 8.6 and to protect these views from inappropriate development which would interfere unduly with the character and visual amenity of the landscape.

6.9 Westmeath County Development Plan 2021-2027

6.9.1 Strategic Aims set out at 1.8 include: To provide for the development of indigenous energy resources, with an emphasis on renewable energy supplies.

As set out in the Economic and Development Strategy. COPP 5.59 is "To Support renewable energy initiatives that supports a low carbon transition."

6.9.2 Within Chapter 9 Rural Westmeath CPO 9.34 is "To Support the rural economy and initiatives in relation to diversification, agri business, rural tourism and renewable energy so as to sustain employment opportunities in rural areas."

6.9.3 Within Chapter 10 Transport Infrastructure and Energy I note at 10.23 it is stated that: *"The Council recognises the importance of wind energy as a renewable energy source which can play a vital role in achieving national targets in relation to reductions in fossil fuel dependency and therefore greenhouse gas emissions and seeks to enable renewable and wind energy resources of County Westmeath to be harnessed in a manner that is consistent with proper planning and sustainable development of the area. There are a number of issues which must be taken into consideration when dealing with applications for wind energy development including; visual impact; landscape protection; impacts on residential amenity; impact on wildlife and habitats;*

connections to the national grid and impact of construction and ancillary infrastructure including access roads. The Council will have regard to the Wind Energy Development Guidelines for Planning Authorities, prepared by the Department of Environment, Heritage and Local Government, or any update made thereto. Further, regard should be taken of the Landscape Character Assessment of the County which is contained in the accompanying Volume 2 of this Plan. In addition, potential applicants are advised to consult with the Department of Arts, Heritage and the Gaeltacht, The Forestry Service, the Irish Aviation Authority, Failte Ireland and other appropriate statutory and non-statutory bodies in areas which may require special protection. In general, the Council will encourage wind energy, provided such developments would not have an adverse effect on residential amenities, tourism amenities, special landscape character, views or prospects, Natura 2000 sites, protected structures, aircraft flight paths or by reason of noise or visual impact. Applications for such developments will not be encouraged in Areas of High Amenity."

The plan refers to Industrial Scale Wind Farms at 10.23.2 noting reference within the RSES to the after use of peatlands and consideration of their potential contribution to climate change mitigation and adaption including renewable energy production. With a strong history of energy production and an extensive electricity transmission network in place, the potential exists in such peatland areas for a smooth transition to renewable energy sources. This approach should be informed by the preparation of a Holistic Management Plan that will address the future uses of former industrial peatlands. The preferred locations for large scale energy production, in the form of windfarms, is onto cutover cutaway peatlands in the County, subject to nature conservation and habitat protection requirements being fully addressed.

6.9.4 Wind Energy Policy Objectives

It is a policy objective of Westmeath County Council to:

CPO 10.142 Have regard to the principles and planning guidance set out in Department of Housing, Planning and Local Government publications relating to 'Wind Energy Development' and the DCCAE Code of Practice for Wind Energy Development in Ireland and any other relevant guidance which may be issued in relation to sustainable energy provisions.

CPO 10.143 Ensure the security of energy supply by supporting the potential of the wind energy resources of the County in a manner that is consistent with proper planning and sustainable development of the area.

CPO 10.144 Encourage and support the development of small-scale wind energy development and single turbines in urban and rural areas and Industrial Parks, provided they do not negatively impact upon environmental quality, landscape, wildlife and habitats or residential amenity.

CPO 10.145 To strictly direct large-scale energy production projects, in the form of wind farms, onto cutover cutaway peatlands in the County, subject to environmental, landscape, habitats and wildlife protection requirements being addressed.

In the context of this policy, industrial scale/large-scale energy production projects are defined as follows: Projects that meet or exceed any of the following criteria:

- Height: over 100m to blade tip, or
- Scale: More than five turbines, or
- Output: Having a total output of greater than 5MW

Developments sited on peatlands have the potential to increase overall carbon losses. Proposals for such development should demonstrate that the following has been considered:

- Peatland stability; and
- Carbon emissions balance.

CPO 10.146 Ensure that proposals for energy development demonstrate that human health has been considered, including those relating to the topics of:

- Noise (including consistency with the World Health Organisation's 2018 Environmental Noise Guidelines for the European Region);
- Shadow Flicker (for wind turbine developments, including detailed Shadow Flicker Study);
- Ground Conditions/Geology (including landslide and slope stability risk assessment);
- Air Quality; and Water Quality;
- Assessment of impacts on collision risk species (bird and bats).

CPO 10.147 With regard to wind energy developments, to ensure that the potential for visual disturbance should be mitigated by applying an appropriate setback distance, which, where relevant, complies with available Ministerial Guidelines.

CPO 10.148 Support the preparation of a Management Plan for the Industrial Peatlands in the County, in consultation with stakeholders and adjacent Local Authorities. The Plan should focus on recreational opportunities, renewable energy, hydrological and ecological considerations subject to environmental assessment and the requirements of Article 6 of the Habitats Directive

CPO10.155 Support and advance the provision of renewable energy resources and programmes in line with the Government's National Renewable Energy Action Plan (NREAP), the Governments' Energy White Paper "Irelands Transition to a Low Carbon Energy Future (2015-2030) and any other relevant policy adopted during the lifetime of this plan.

CPO 10.156 Work in partnership with local communities to develop energy efficient and renewable energy projects to benefit the local area subject to development management standards. CPO 10.157 Support the production of sustainable energy from renewable sources such as wind, solar, bio-energy and the development of waste to energy/Combined Heat and Power Schemes at suitable locations and subject to compliance with the Habitats Directive

CPO 10.160 Prepare a Renewable Energy Strategy for the County over the lifetime of this plan and subject to the availability of resources. This strategy will support the development of renewable energy infrastructure to deliver government objectives in relation to energy efficiency and the transition to a low carbon future

6.9.5 In Chapter 16 Development Management Standards are set out and include the following provisions in relation to Wind Energy

16-13-11 Wind Energy

The Council recognises the importance of wind energy as a renewable energy source and its potential in contributing to reductions in fossil fuel dependency and greenhouse gas emissions. Chapter 10, Section 10.23 of the plan outlines the policy context for Wind Energy and should be referred to in the consideration of proposed development. The Council will have regard to the Wind Energy Development Guidelines for Planning

Authorities, prepared by the Department of Environment, Heritage and Local Government, or any update made thereto. Further, regard should be given to the Landscape Character Assessment of the County which is contained in the accompanying Volume 2 of this Plan.

Landscape Policy is set out at Chapter 13. Landscape and Lake Management

Landscape and Lake Amenities Policy Objectives It is a policy of Westmeath County Council to: CPO 13.1 Support the implementation of the National Landscape Strategy.

CPO 13.2 Protect the distinctiveness, value and sensitivity of County Westmeath's landscapes and lakelands by recognising their capacity to sustainably integrate development. CPO 13.3 Support and implement objectives contained in any Regional Landscape Character Assessment. CPO 13.4 Conserve and enhance the high nature conservation value of the Landscape Character Areas in order to create/protect ecologically resilient and varied landscapes.

CPO 13.5 Identify and integrate new green and blue infrastructure networks within the existing landscape character areas in the interests of biodiversity and climate change and in recognition of the tourism potential of these assets.

CPO 13.6 Require that development is sensitively designed, so as to minimise its visual impact on the landscape, nature conservation, archaeology and groundwater quality.

6.9.6 As regards landscape character areas the Westmeath portion of the site falls within the River Deel Lowlands:

"The River Deel, the Stonyford River and their hinterlands form this landscape character area typified by low-lying pasture punctuated with small lakes which are flanked by scrub and wet woodland. These rivers form part of the River Boyne and Blackwater SAC complex. The area east of Delvin and running south along the Meath Border is characterised by cutover, cutaway bogs and small tracts of intact bog. Settlements within this area include Clonmellon, Delvin, Killucan-Rathwire and Raharney which are located within the eastern commuter belt to Dublin. This part of the county has a strong historic landscape component with several demesne

landscapes occurring within the area. Two main road corridors the N51 and N52 traverse the area. A number of quarries are also operational in the area."

6.9.7 Map 69 Wind Capacity. Notes that all LCAs in Co Westmeath have low capacity for wind save for LCA9 Uisneach which has no capacity.

Regarding Areas of High Amenity the lakelands of Co Westmeath are noted as areas of high landscape value and areas of high amenity.

Policy CPO 13-20 is to protect high amenity areas from inappropriate development and reinforce their character, distinctiveness, and sense of place.

6.10 Natural Heritage Designations.

The following designated sites are noted.

Site Name	Site Code	Distance (nearest point to windfarm)
River Boyne and River Blackwater SAC	[002299]	412m NE
River Boyne and River Blackwater SPA	00232	486m E
Lough Derravaragh SPA	004030	13.4km NW
Girley (Drewstown) Bog SAC	002203	10km NE
Mount Hevey Bog SAC	002342	3.4km SW
Mount Hevey Bog pNHA	001584	3.4km SW
Woodown Bog SAC	002205	11.4km W
Lough Lene SAC	002121	13km NW
Lough Bane and Lough Glass SAC	002120	13.4km NW
White Lough, Ben Loughs and Lough Doo SAC	001810	15.8km NW
Lough Owel SPA	004030	18.3km W
Boyne Coast and Estuary SAC	001957	48km NE >70km downstream
Boyne Estuary SPA	004046	47.3km NE >70km downstream
Lough Ennel SPA	004044	19.8km W
Garriskil Bog SPA	004102	25.5km NW
Lough Iron SPA	004046	24.4km W
Molerick Bog NHA	001582	3.9km S
Girley Bog NHA	005180	10.3km NE
Woodown Bog NHA	000694	11.4kmW
Jamestown Bog NHA	001324	12.5km NE

Miltownpass Bog NHA	002323	13.1km NW
Lough Derravaragh NHA	000684	14.4km SW
Royal Canal pNHA	002103	3.3km S
Lough Shesk pNHA	000556	7km N
Ballina Bog pNHA	000390	10km SE
Aghalsaty Fen pNHA	001349	15.2km NW
Lough Sheever Fen/Slevin's Lough Complex pNHA	000690	14.2km W
Trim pNHA	001357	17km E
Boyne Woods pNHA	001592	26.7km NE
Crewbane Marsh pNHA	000553	34.5km NE
Rossnaree Riverbank pNHA	001589	35.8km NE
Dowth Wetland pNHA	001861	48km NE
Boyne River Island pNHA	001862	41.2km NE
Boyne Coast and Estuary SAC and pNHA	001957	48km NE

7.0 Submissions

7.1 Westmeath County Council.

7.1.1 The submission from Westmeath County Council dated 14th June 2023 is also accompanied by a written record of the views of the Elected Members of Westmeath County Council as expressed at a special meeting of the Council on Wednesday 7 June 2023. The concerns of the elected members included:

- Question the compatibility of the proposal with peatland remediation and rehabilitation.
- Question whether the opinions of the Councillors would be taken on Board by An Bord Pleanála?
- Notwithstanding reduced public disquiet regarding wind turbines generally, a large cohort of people in Raharney and Ballivor remain opposed to the development.
- Construction noise and traffic disruption to surrounding villages.
- Community financial scheme should be distributed at an early stage.
- Concerns regarding proximate houses including 83, 97 and 103. Visual impact, noise, dust.
- Alternative solar considerations.
- Industrialisation of the landscape.

- Given the baseline noise environment an increase of 5dB will be significant. Independent noise baseline study should be carried out.
- Query status of the bog as cutaway or cutover.
- Question the applicant's property valuation impact assessment.
- Shadow flicker.
- Local people should be employed.

7.1.2 The Planning report of Westmeath County Council sets out details of the proposed development, the site location and description and relevant planning policy as it relates to wind farm development. Reference is made to the following:

- International Energy Policy Framework
- European Energy Policy Framework
- National Energy and Climate Policy with specific reference to policy statements under the security of energy supply,
- The Climate Action Plan 2023,
- The National Mitigation Plan,
- The National Planning Framework and
- The Wind Energy Guidelines 2006 and the Draft Revised Guidelines of 2019.
- Regional Policy where reference is made to the policy set out in Eastern and Midlands Regional Assembly – Regional, Spatial and Economic Strategy 2019 to 2031.
- Local Policy and Guidance Documents – the Westmeath County Development Plan 2021 to 2027.

The report sets out details of the planning history for the subject site and its surroundings. No enforcement history relating to the site. The report notes the European designated sites, Natural Heritage Areas and protected structures within the zone of likely impact. Public Services are referenced in section 10 of the report. Regarding public water supply no objections are raised and no objections are raised in relation to proposed sanitary facilities and surface water proposals. Environment Department raised no specific objections in relation to flood risk assessment. Section 12 considers the proposal in the context of the Water Framework Directive and notes

that subject to strict mitigation the proposed development presents no likelihood for significant effects on surface or groundwater quality.

Section 13 provides the planning authority's comments on the Environment Impact Assessment Report EIAR. The main issues raised are summarised as follows:

- Regarding chapter 2 background to the development the contents are considered comprehensive and reasonable however the assessment of cumulative impacts should consider all permitted renewable energy developments in the vicinity.
- Regarding chapter 3 the review of alternatives contents are considered comprehensive and the conclusions appear reasonable.
- Regarding chapter 4 description of the development the contents are considered comprehensive and reasonable.
- Regarding chapter 5 Population and human health. Considered comprehensive and well presented. It is recommended that conditions ensuring shadow flicker regulation be attached in the event of permission on the site.
- Chapter 6 Biodiversity - conclusions are considered reasonable.
- Chapter 7 Ornithology. Chapter considered comprehensive however a nocturnal assessment should have been carried out to assess the impact of the proposal on nocturnal activity. Eg swans and wild geese who migrate at night and inform likely effects to be incorporated into this chapter of the EIAR.
- Chapter 8 Land, soils and geology. It is considered on the basis of the information provided that the proposed development would not result in any adverse impact on the lands soils and geology of the area.
- Chapter 9 Hydrology and Hydrogeology. Assessment is considered comprehensive, pre-emptive and proactive, raising no concerns in this regard.
- Regarding Chapter 10 Air and Climate Chapter considered comprehensive and well presented. Based on the evidence provided it is considered that the findings are logical and reasonable. However it is suggested that a final restoration plan should have informed the proposal as opposed to its proposed updating and completion in the event of permission being granted.
- Regarding chapter 11 noise and vibration contents of the chapter considered comprehensive and the conclusions reasonable.

- Chapter 12 Archaeology and cultural heritage chapter is considered to be comprehensive and well presented. Findings are logical and reasonable.
- Chapter 13 landscape and visual. Visual impact will vary depending on the location. The contents of the chapter are considered comprehensive and conclusions reasonable.
- Chapter 14. Material assets. Contents are considered comprehensive and conclusions appear reasonable.
- Chapter 15. Vulnerability of the project to major accidents and natural disasters. Contents considered comprehensive and conclusions reasonable.
- Chapter 16 Interaction of effects conclusions reasonable.
- Chapter 17. Schedule of Mitigation and monitoring considered comprehensive.

The report sets out in detail the recommendations on behalf of internal local authority sections as follows:

- District Engineer indicates no objection subject to conditions.
- Environment Section indicates no objection subject to conditions.
- Chief Fire Officer- No comments
- National Roads Office - No Comments
- Heritage Officer – No comments

Section 18 of the report sets out the Planning Authority's assessment of the proposed development in detail under the relevant thematic headings. Regarding the principle of the proposed development, it is considered that the preferred locations for large scale energy production in the form of wind farms is on cutover / cutaway peatlands in the County, subject to nature conservation and habitat protection requirements being fully addressed. As the proposal is predominantly located on cutover/cutaway peatlands it is considered that the proposal complies with CPO 10.146 of the WCDP and therefore the principle of the proposal is supported by Development Plan policy.

Condition to be imposed to ensure that shadow flicker at sensitive receptors within 10 rotor diameter of the proposed wind turbine locations shall be less than the level set out in the current wind energy development guidelines for planning authorities.

Regarding noise - no concerns subject to all mitigation measures being implemented fully.

Regarding visual amenity direct effects on landscape character are highly localised and visual impacts within the county are not deemed to be significant as to warrant an unsupportive recommendation. Having regard to the significant distance to world heritage sites no significant effects on visual amenity of the world heritage sites.

Regarding grid connection and haulage routes a detailed precondition survey of haul routes and a pavement strength analysis and culvert bridge bearing capacity analysis reports to be provided for roads identified as construction material haul roads. A pre-condition and post condition survey of local roads and proposals for ongoing maintenance programme to be agreed and applied during the construction stage to avoid deterioration. Security bond to be in place and post construction the developer should undertake to carry out any / all necessary improvement works.

On the question of property values the assessment of impact on property values is considered adequate and no concerns are raised in this regard.

Regarding turbine design no stripes should be painted or attached to the turbines in order to keep them as visually clean and allow their effective assimilation into their surroundings.

Regarding amenity provision it is considered that the addition of dedicated recreational and amenity routes for locals and tourists will have a significant positive effect on tourism and recreation in the local area. These facilities would largely tie in with and complement objectives in policy CPO 12.83 of the CDP which seeks to support the delivery of sustainable strategic greenways, blueways and peatways projects in the county in accordance with the strategy for the future development of national and regional greenways. This element of the proposal is welcomed and considered acceptable subject to agreement with respect to community gain.

Regarding development contributions and bonds in the event of permission the levy as set out in the development contribution scheme made under Section 48 of the Planning and Development Act should apply. Special development contribution requiring pre-surveying of affected roads, proposals for rendering the routes fit for purpose, and ongoing monitoring and repair during the project, post construction survey and remedial works.

The report concludes that the proposal either by itself or in cumulation with other projects would be in accordance with European Energy policy, relevant Section 28 guidelines, including the provisions of the wind energy guidelines, national and regional policy. The proposal would make a positive contribution to Ireland's national strategic policy on renewable energy and its move to a low energy carbon future be capable of being integrated successfully into the site without undue adverse impact on the amenity of the area would not seriously injure the residential or visual amenities of the area and would have an acceptable impact on the landscape and would not be likely to have a significant adverse impact on any development site or the conservation objectives pertaining to same and would not be likely to adversely affect archaeological or natural heritage of the area and would be acceptable in terms of traffic safety and convenience. Proposal is in accordance with Policy objectives CPO 10.146 of the Westmeath County Development Plan 2021-2027 to direct large solar energy production projects onto cutover cutaway peatlands in the county, and would therefore be in accordance with the proper planning and sustainable development of the area.

Recommendations for conditions include:

- Timescale for completion, operation and decommissioning
- Turbines not to be replaced without consent
- Construction and environmental management plan
- Construction and demolition resource waste management plan
- Construction traffic management plan
- Noise levels during construction and operation, including monitoring
- Dust monitoring and management
- Archaeological recording, reporting and any further mitigation arising from same
- Navigation lighting
- Mitigation and monitoring measures in the NIS, EIAR and CEMP to be applied.
- Shadow flicker regulation
- Ecological clerk of works
- Bird monitoring and kill record
- Surface water management
- Wastewater management

- Development contributions and bond
- Community Benefit Scheme
- Wind Farm Amenity provision consisting walkway/cycleway and linkage
- No signage/livery
- Pavement strength analysis and culvert /bridge bearing capacity analysis report for haulage roads
- Pre and post construction works.

7.2 Meath County Council.

7.2.1 The planning report submitted by Meath County Council sets out details of the proposed development, the site location and description, the planning history relating to the site, planning policy followed by a review of the various internal departmental and Irish Water (now Uisce Eireann) reports prepared in respect of the development and then an assessment of the proposed development.

Comments and recommendations arising from the internal reports are noted as follows:

- Environment – Conditions in the event of permission relating to CEMP, WEMP, dust emissions, refuelling, bunding of hydrocarbons, chemicals, hours of construction, requirements in relation to soil/stone/topsoil importation, invasive species management, pre site clearance protected species survey.
- Flooding – prior written consent for culverting works. Location of essential infrastructure outside flood zones A and B. Specified finished floor level. Setback 10m from watercourse. Maintenance of flood plain storage.
- Transportation - No objection subject to conditions relating to road safety audits, traffic management plan, road condition survey, protection of bridges. Protocols to inform residents, phasing and road opening licenses.
- Water Services Department – Broadly acceptable subject to conditions relating to monitoring of wells within 500m of borrow pit no 2 and remedial measures in the event of impact, installation of permeable paving at permanent car parking spaces, section 50 OPW consent and compliance with Greater Dublin Code of Practice for drainage works.

- Architectural Conservation Officer recommends refusal noting concerns regarding negative impact on historic landscapes. Noting 10 protected structures within the immediate area, the visibility of the proposal from the protected structures and national monuments, and protected views to and from tentative World Heritage Site of Tara are problematic. Applicant has failed to supply visual impact assessment from the Lough Crew Cairns and protected structures 91078 Woodtown House, 91193 Ballivor Health Centre, 91194 Columbas RC Graveyard, 91195 St Kineth's Church of Ireland Church. 91196 St Columbanus' Roman Catholic Church, 991197 Water Pump, 91198 Parkstown, 91292 Scariff Bridge, 91388 Foxbrook, 91379 Killyon Manor. Reference is made to incorrect RPS numbers provided for Scarrif Bridge and Balivor Water Pump which is potentially misleading.
- The effect of the development on the Hill of Tara Panorama is evident in the visual impact assessment resulting in negative impact / alteration of the view, panorama and experience of this historic landscape.
- Regarding archaeology - additional information is required. High potential for archaeological finds. Potential ancient routeways near the R156. Dating peat levels would determine remaining archaeological potential. Recording of railway structures required. Regarding cultural heritage, folklore is not addressed. A program of paleo environmental work to be included in mitigation. Concerns arise regarding limited mitigation. Advance archaeological investigations are required.
- Verbal report is noted from Heritage Officer recommending independent assessment of impact and cumulative impact on Hill of Tara, tentative list for world heritage sites. Cumulative impact on Loughcrew and Slieve na Calliagh Hills. Consideration also to be given to the Hill of Uisneach.
- Uisce Eireann- No objection.

7.2.2 Section 6 of the Planning Report sets out the planning assessment and I have summarised the main issues and recommendations as follows:

- In the event of permission drawings illustrating final structure detail to be installed on the site not exceeding the blade length in the development description.
- Regarding the electricity substation, windfarm control building, grid connection and electricity supply, An Bord Pleanála invited to clarify with the applicant the size of the onsite electricity substation compound which is stated as 11,600m^2 (as per digital

documents) though the printed document states 14,600m^2. Substation building should be integrated into the landscape. A matt dark green paint is recommended on all exposed metal work, service buildings, cabins, gates and fences. No CCTV pole, other structure elevation details for the substation area.

- In the event of permission lighting to be directed inward to avoid spill /glare to the surrounding environment. Further consideration to lighting may need to be given by the Bord in NIS EIAR.
- Condition pertaining to the implementation of a wastewater treatment maintenance contract over the lifetime of the development.
- Clarification required regarding the area of borrow pit 1b where material will be extracted.
- In the event of permission, the design of any temporary changes to entrances to accommodate replacement components should be agreed in writing with the relevant planning authority. An agreed programme of road cleaning should be in place prior to commencement of development to maintain roads clear of debris and dirt.
- Regarding turbine component transport route An Bord Pleanála is requested to consider the referral report of Transport Department Meath County Council which includes a list of requested conditions in the event of permission,
- Regarding amenity pathways and car parks MCC request that any permanent signage proposed should be agreed with the relevant planning authority prior to the commencement of development. Design of amenity paths and associated carparks / bicycle racks should be sufficiently robust to serve the local community beyond a 30 year operational lifespan of the proposed windfarm.
- Regarding drainage design the Bord are directed to the comments in relation to Section 50 applications for culverts as addressed in referral reports of the Environment -General and Flooding Departments of Meath County council.
- Waste Disposal requirements are outlined in report of Environment General Department.
- Regarding the NIS, ABP must satisfy itself that the list of experts involved in the preparation of the AA and EIA have appropriate competence and experience to ensure the completeness and quality of each report. (Level of qualification of the team who prepared the NIS is stated on page 4 though individual specialisation is not.)

- Regarding surveys it is noted that the “Overview Habitat Map” Figure 4.2 in the NIS has a boundary which does not match the application site. An area identified as Bog woodlands (WN7) Under fossit classification corresponds with an area of Alkaline Fen (7230) as identified under Figure 4-1 and Article 17 mapping.
- Regarding fauna surveys the sighted location of kingfisher are within and surrounding the site. Turbine 21 is in the flightline of one incidental sighting (according to Figure 4-4d). ABP is requested to consider the matter in the context of potential impact on kingfisher.
- ABP is advised to consider the draft Cutaway Bog rehabilitation and decommissioning plan 2022 (EIAR Appendix 6-6) and the impact of the proposed development on the restorative/permanent rehabilitation plan prepared in accordance with condition 10.2 of IPC license ref P0501-01. The Executive Summary of the Ballivor Draft Plan notes that peatland rehabilitation for Ballivor Bog will be carried out alongside the proposed windfarm construction. An indicative list of constraints associated with the proposed windfarm have been identified.
- In combination effects of solar developments and other renewable energy applications in the west of County Meath should be addressed, including KA161206, KA161319, 22958 21396 to be considered within ABPs cumulative assessment.
- ABP should satisfy itself that the applicant has offered the public the opportunity to express opinions and concerns.
- An ecological clerk of works should be appointed during the pre-construction, construction and post construction phases to advise on and oversee and monitor mitigation measures. All mitigation measures should be fully implemented and post construction monitoring as detailed in the EIAR should be in place for a minimum of 7 years post construction. Mitigation in line with NRA Best Practice for the conservation of bats in the planning of national roads schemes and the guidelines for the treatment of bats during the construction of national road schemes and any works relating to bats may only be carried out under license issued by the NPWS.
- Regarding ornithology it is noted that many of the wildlife / geology sites identified through surveys have no statutory nature conservation designation but nevertheless are of county importance and provide several ecosystem services. Such sites can function as important stepping stones and ecological corridors for improving the ecological coherence of sites protected for nature conservation.

- It is recommended that in the event of permission aviation lights on wind turbines should be flashing to reduce the likelihood of collisions with bird species.
- Regarding peat stability assessment DCENR mapping does not identify any landslide events in the vicinity of the application site / bog complex. Importation of soil and stone, waste management CEMP etc.
- Regarding hydrology and hydrogeology. Flood risk, management and importation of soil and stone, water protection, waste management CEMP etc. The importation of soil and stones to the site can affect the hydrochemistry of an area so the imported material should be suitable to the peat soil / subsoil and bedrock of the site.
- Applicant should fully investigate the potential for low frequency noise 20-200Hz on noise sensitive receptors within the area of the development and propose mitigation measures regarding same.
- Regarding archaeological, architectural and cultural heritage, the applicant has failed to supply a visual impact assessment from 10 no protected structures within the immediate context of the site. It is also noted that incorrect record numbers are attached to two no entries. The effect of the proposed development on the Hill of Tara panorama is negative and will alter the view and experience of the historic landscape.
- The Tara Complex, as part of the Royal sites of Ireland, is included in Ireland's Tentative World heritage list. It is recommended that ABP seek the advice of an independent world heritage expert with specific expertise and experience in assessing world heritage site nominations on behalf of UNESCO to assess whether the development could impact (either alone or in combination with other developments) on any future nomination by the state party to UNESCO for world heritage status using established international best practice guidance.
- ABP are requested to consider the cumulative impact of the proposed windfarms, solar farms and other projects in the vicinity of the proposed development on the Boyne Valley Sites, the Tara Complex, Loughcrew and Slieve na Calliagh Hills which are classified as having exceptional value of national / international importance with a 'high sensitivity' to change, Frewin Hill in County Westmeath and the Hill of Uisneach which is part of the royal sites (excluded from LVIA study at 13.4.1.1 of the EIAR) and the entire LVIA should be amended accordingly to take account of the impact on all of the identified sites.

- ABP requested to consider the Heritage Council's (2013) Windfarm Planning in Ireland, Planning in Harmony with Heritage, and the National Landscape Strategy for Ireland 2015-2025 in assessing the application.
- Regarding landscape and visual impact, the landscape character assessment part of the Meath County Development Plan 2021-2027 identifies the area as southwest lowlands which have 'medium capacity' to absorb wind turbines.
- The proposed turbines will be clearly visible from the Hill of Tara and VP5 north of Enfield. Notable is the potential merging / coalescence of wind farms across the skyline when considering the view presented from Loughcrew.
- Meath County Council have identified concerns with the cumulative impact of the proposed development on the cultural heritage of local, regional, national and international importance.
- While acknowledging the viewpoints / photomontages presented by the applicant, it is submitted that a revised visual impact assessment (including photomontages) taking account of the cumulative impact of the proposed development, other permitted and proposed developments including solar farms in the vicinity of the proposed development is required.
- Other protected views (as per the Meath County Development Plan 2021-2027 including those associated with the Brú na Bóinne World Heritage Sites) should be included as follows:
    (a) 30 - Hill of Slane – panorama north of Slane Village
    (b) 59 Panoramic views in all directions from top of Knowth tumulus. Extensive views across a working countryside (southeast of Slane Village)
    (c) 87 a b c d Newgrange Passage Tomb- Panorama (Elevated panoramic view across the landscape EWNS)
    (d) 88 Dowth Passage Tomb – Panorama (southeast of Slane Village)

    Other sites include.

    (e)52 – Hill of Ward – Panorama (east of Athboy and within the study area of the LVIA)

    (f) 47 - Skryne Church – Panorama of National Significance (east of Hill of Tara)

    Protected Views in the immediate vicinity of the site should also be addressed:

79-view to the northeast and south west – view of Boyne Valley from Scarriff Bridge

78 view north and south – view of Boyne valley from Derrindaly Bridge

Bracklin Estate (Co Westmeath) is a demesne landscape located close to the west of the northern turbine cluster and the Royal canal is located 3.7km to the south of the site.

To assist with the assessment of the LVIA it is noted that colour coding relating to theoretical visibility of turbines at different distances has not been presented at 13-1 as stated in Section 13.3.2.

- The EIA includes a habitat management and enhancement plan which seeks to improve the ecological and amenity value of the landscape at the site of the proposed development. In the event of ABP approving the current proposal the applicant should be conditioned to retain all other existing hedgerows, trees drainage ditches and watercourses which are not affected by the development proposal.
- In the event of permission, An Bord Pleanála requested to ensure that any service building for this development is integrated into the landscape, ensuring the use of matt dark green paint colour for all exposed metal work, service buildings, cabins, gates and fences or where relevant all finishes of structures be agreed in writing with the relevant planning authority prior to commencement of development. In addition, it is recommended that a condition is applied to ensure that the windfarm site is always maintained in a neat and tidy condition with no stockpiling of equipment etc., permitted on site particularly during the operational phase.
- Regarding impact on material assets, it is noted that there is a small airstrip in Lisclogher West to the west of the development used recreationally by model airoplane enthusiasts as per section 13.4.2.2 of the EIAR. There is no reference to this under material assets.
- ABP are directed to Section 14.2.7.2 Aviation and the conditions identified by the Irish Aviation Authority and the Department of Defence.

- Regarding vulnerability of the project to major accidents and natural disasters a fire safety application is required under Part III of the building control regulations for each individual building within the proposed development.

In its Conclusion and recommendation, it is outlined that Meath County council considers that the nature of the wider development is supported in National Regional and Local Planning Policy, noting that Bracklyn Windfarm was permitted on adjoining lands in 2022. Regarding design and amenity it is considered that the size, scale and position of the proposal will have an impact on the landscape and An Bord Pleanála is invited to consider the local impact on neighboring residences (overshadowing, property values etc.), archaeological and architectural heritage together with the impact on the cultural heritage landscape of County Meath, Co Westmeath and further afield. Impact on Tentative World Heritage Sites and other sensitive locations of concern.

Regarding Development Contributions in accordance with Section 48 of the Planning and Development Act 2000-2022 and the Meath County Council Development Contribution Scheme 2016-2022, the contributions for telecommunication masts, electricity pylons and renewable energy initiatives will be allocated 100% to Class 3 – Social Infrastructure. As the MW levy for the energy generated by the 10 no turbines in Co Meath cannot be established until a permitted development has an accepted grid connection ABP are requested to include a condition which reflects this. Condition requiring a cash deposit / bank bond or other such security with the Planning Authority to ensure the satisfactory reinstatement of the site on the cessation of the project.

The report concludes that notwithstanding a generally supportive policy approach issues raised regarding the potential visual impact of the proposal on protected views and cultural heritage sites is of particular concern and necessitate further assessment and information. Conditions are recommended in the event of permission.

The minutes of the meeting of Meath County Council 12 June 2023 noted that matters raised by the elected members and is summarised as follows:

- Agree with recommendation for request for further information.

- Absence of updated guidelines on windfarms has a negative impact in ensuring proper planning and ensuring appropriate distance between turbines and local residences. Technology has moved on and the guidelines should reflect this progression.
- Lands considered more suitable to a solar farm development.
- Proximity of turbines to residential properties. Additional lands could be used to provide a greater buffer for residents or assurances that there are no other options (excluding cost).
- Importance of decommissioning plan. Question whether remediation of the site will fall to the council if the developer no longer owns the site.
- Concern of residents with respect to the devaluation of property. Potential for alleviation of concerns by way of provision of excellent community amenities.
- Community benefits/amenities should be included and conditioned as part of any grant of permission.
- In addition to proposed paths and cycleways / horse tracks a natural play park sensory garden waymarked posts orientation information boards and toilets should be provided.
- Potential challenge to the windfarm indicated in local media.
- Cumulative Assessment with regard to neighbouring windfarm.
- Will the proposal interfere with part in Peatland Climate Action Scheme (PCAS) specifically the rewetting element and if so what percentage of the bog will be prevented from taking part.

7.3 Prescribed Bodies

7.3.1 Development Applications Unit Department of Housing Local Government and Heritage

The Department is broadly in agreement with the findings in relation to archaeology and cultural heritage, however issues of concern remain unresolved in relation to:

Indirect impacts to the setting of certain National Monuments and sites subject to preservation orders within 10km of the proposed development. Three sites have been omitted from the assessment, namely :

- Tlachgtga /Hill of Ward (National Monument No 150)
- Tower House at Causetown (Lune By) (Preservation Order No 176/1945)
- Barrow at Rathwire Upper (Preservation Order No 18/1977)

The cumulative impacts to the setting of these sites has not been evaluated.

It is noted that the main enclosure located at the summit of the Hill or Ward (RMP ME030-001) is a National Monument in the Guardianship of the Minister and thus subject to statutory protection under Section 14 of the National Monuments (Amendment) Act 1930-2014. The site, generally referred to as Tlachtga in historic sources, has rich historical and mythological associations and is considered to be one of the royal centres of County Meath. It is an important focal site in the landscape and has been confirmed in recent years by the identification of an extensive relict landscape surrounding the monument through the use of modern non- intrusive investigation techniques. This has been recognised in the Meath County Development Plan 2021-2027 as the panoramic view from the Hill of Ward has been designated as Protected View no 52. As the Hill of Ward /Tlachtga is located c9.5km to the northeast of the PDS it should have been included within the remit of the archaeological assessment carried out based on the methodology outlined at section 12.2.4 and Table 12.1. No reference is made to the Monuments at the Hill of Ward in chapter 12 nor is the potential indirect effects of the proposed development (impacts to setting) evaluated. Chapter 13 of the EIAR does recognise the potential vulnerability to impacts from the proposed development of the protected view at the Hill of Ward however this was not directly assessed. The photomontage for VP1 which was considered to be representative and used to assess the likely impact of the proposed development (Table 13.14) is located c4.5km to the west of the Hill of Ward and at a lower elevation (70-80mOD at VP1 versus 110-119m OD at the Hill of Ward). This contrasts to the more rigorous approach taken within chapter 12 and13 of the EIAR to assess the effects of this proposed development to other similar receptor notably Trim Castle, Frewin Hill and the Hill of Tara.

Two sites subject to preservation orders located within 10km of the PDS – a tower house at Causetown (Lune By) RMP ME029-010----, PO no 176/1945) and a barrow at Rathwire Upper (RMP WM020-123---- PO no 18/1977). Both sites are subject to statutory protection under Section 14 of the National Monuments Amendment Act

1930-2014. While the tower house at Causetown is included in Chapter 12 in the Consideration of RMP Sites within 5km of the scheme, the fact that this particular site is also subject to a preservation order is not addressed. The borrow pit at Rathwire Upper was completely excluded from the assessment.

Any EIA must be informed by an adequate characterisation and understanding of the baseline archaeological and cultural heritage environment. Methodologies used to establish this baseline must be applied equally and consistently and any divergences to include or exclude specific receptors must be clearly justified. Where there are significant omissions of vulnerable receptors from the characterisation of the baseline environment then there is potential that the certain likely impacts or effects of a proposed development might not be identified. The Board may seek clarification in relation to this matters. In the event of a permission a number of conditions are recommended.

Regarding **Nature Conservation**

In general it is considered that the surveys have been sufficiently comprehensive and have allowed an accurate evaluation of the likely effects of the proposed development on the elements of flora fauna and habitats surveyed, and therefore have facilitated the drawing up of effective measures to mitigate any adverse effects identified. In relation to certain faunal elements additional survey work is required to enable full evaluation of the effects of the proposed development on them. While the Department accepts the Appropriate Assessment as set out in the NIS of the potential effects of the proposed windfarm on the qualifying interests for the European Sites within the zone of influence (River Boyne and River Blackwater Special Area of Conservation (SAC) and the River Boyne and River Blackwater SPA), certain impacts of the proposed development on fauna and habitats from a nature conservation perspective require further assessment and clarification.

Concerns relate specifically to the following:

Absence of any assessment of the potential effects on night migrating birds. Scoping advice from the Department noted the requirement to address potential impacts on local and international bird migration over the development site and

particularly impact on night migrants. It was recommended that technological methods such as radar should be used to establish the extent of night migration over the site.

Many passerine bird species migrate at night including, fieldfare and other thrush species, warblers and finch species while wildfowl such as whooper swan and Greenland white fronted goose migrate by night as well as by day. Whooper swans were recorded moving through the site during the daytime bird surveys and frequent stretches of the Boyne to the east of Ballivor in winter, while the Greenland white fronted goose, for which Ireland is the main wintering area, are known to migrate north and south over the country from their principal winter site on the Wexford slobs but not to use any defined routes. These various species could therefore possibly be vulnerable to increased mortalities due to collisions. Applicant should be requested to submit radar surveys of nocturnal migration over the site in order to establish the extent of such movements and allow estimation of the collision risk to the species involved and determine whether mitigation may be required to minimise the mortality rate from collisions.

Loss of an area of oak ash hazel woodland

Regarding area of oak ash hazel woodland (WN2) (0.26ha) occurring on a mineral island in Corranstown bog which is proposed to be removed to allow the excavation of a borrow pit (total area 5.27ha) this native woodland developed on mineral soils is relatively rare habitat in the Ballivor area and in Ireland as a whole, and in such bog island situations is usually of a high biodiversity value. The Department recommends that in order to preserve woodland biodiversity a condition should apply that this area of oak ash hazel woodland developed on mineral soil should be retained and its boundary with the borrow pit be agreed with the planning authority before development commences.

Seasonal timing of vegetation clearance – Bird breeding season

The EIAR is somewhat unclear with regard to the timing of proposed clearance of vegetation to facilitate the project. EIAR does not take account of the possible effects of the removal of peatland vegetation which is important nesting habitat for the Irish Red listed meadow pipit and skylark, amber listed as a species of conservation concern. A condition of any eventual grant of permission should be that any removal of vegetation required to facilitate it should take place outside the bird breeding

season from March to August inclusive in order to avoid the destruction of bird nests, eggs and nestlings.

Badger Surveys and Mitigation

Only two badger setts were identified during badger surveys of the development site and adjacent areas which is surprisingly low given the scale of the site. More setts would be expected especially around the perimeter of the site. The Department recommends a condition requiring resurvey of the site for badgers to be undertaken by a mammal specialist and the results submitted to the planning authority before the commencement of any development. The survey report should incorporate mitigation measures to avoid any injury to badgers as a result of the proposed development including site avoidance, or where unavoidable, the exclusion of badgers from setts.

Regarding chapter on **hydrology and hydrogeology** it is noted in relation to cumulative effects while the overall footprint of the proposed development being <2% of the total area of the Ballivor Bog Group (2,419ha), the hydrology of a much larger area of the bog complex will be affected. The areas available for rehabilitation as bogland habitats and function to sequester carbon in line with the peatland climate action scheme (PCAS) for the Ballivor Bog Group may consequently be constrained. In light of the above it is recommended that the applicant should be requested to supply details of the measures which will be taken to maintain peat water levels in the areas of the Ballivor Bog group where bog rehabilitation is planned throughout both the development and operational phases of the windfarm.

7.3.2 Environmental Protection Agency EPA

Notes IPC licence (Register No P0101-01) granted on 26 April 2000 (under Class 1.4 of the First Schedule of the EPA Act 1992 ‘the extraction of peat in the course of business which involves an area exceeding 50 hectares’) details of which may be viewed on the agency’s website www.epa.ie. The licence may need to be reviewed or amended to accommodate the changes proposed in the planning application. The agency shall ensure before revised license is granted that the license application will be made subject to an Environmental Impact Assessment as respects the matters that come within the functions of the Agency and in accordance with Section 87(1G)(a) of the EPA Act. Consultation on the licence application and EIAR will be carried out in

accordance with Section 87(1B) to (1H) of the EPA Act as appropriate. ABP will be requested to provide all documentation relating to the EIA carried out by the Board under Section 173A(4) of the Planning and Development Act as amended.

Should a licence review application be received by the Agency, all maters to do with emissions to the environment from the activities proposed, the licence review application documentation and EIAR will be considered and assessed by the Agency. Where the agency is of the opinion that the activities as proposed cannot be carried on or cannot be effectively regulated under a licence then the Agency cannot grant a licence for such an activity. Should the agency decide to grant a license in respect of the activity as proposed it will incorporate conditions that will ensure that appropriate National and EU standards are applied and that Best Available Techniques (BAT) will be used in the carrying on of the activity. In accordance with Section 87(1D)(d) of the EPA Act, the Agency cannot issue a proposed determination on a licence application which addresses the development above until a planning decision has been made.

7.3.3 Transport Infrastructure Ireland (TII)

Notes that the N3 and M/N4, highly important national roads, are proposed to form part of the haul routes for the proposed development. TIIs observations seek to address the safety, capacity and strategic function of the national road network in accordance with TIIs statutory functions and the provisions of official policy outlined in the Section 28 Guidelines Spatial Planning and National Roads Guidelines for Planning Authorities (2012) and the EMRA Regional Spatial and Economic Strategy (RSES). Having regard to official policy and in the interests of national road network maintenance and safety TII notes:

- The requirement identified within the EIAR to implement the Traffic Management Plan as part of pre-construction mitigation.
- The requirement that any operator who wants to transport a vehicle or load whose weight falls outside the limits allowed by the Road Traffic (Construction Equipment and Use of Vehicles) Regulations 2003, SI 5 of 2003, must obtain a permit for its movement from each Local Authority within whose jurisdiction the vehicle shall travel.

- Applicant should consult with all PPP companies, Motorway Maintenance and Renewal Contract (MMaRC) contractors and road authorities regarding haul route to ascertain any operational requirements such as delivery timetabling etc and to ensure that the strategic function of the national road network is maintained.
- Where temporary works within any MMaREC Contract boundary are required to facilitate the transport of turbine components or construction traffic the applicant shall contact third party works@tii.ie in advance as a work specific deed of indemnity will be needed by TII before works can take place.
- Any proposed works to the national road network including signage to facilitate turbine component delivery shall comply with TII publications and shall be subject to road safety audit as appropriate. Works should ensure the ongoing safety for all road users and prior to any development necessary licenses, approval and agreements with PPP Concessions, Motorway Maintenance Renewal Contracts (MMaRC) Companies and local road authorities, as necessary shall be put in place. All agreement to be referred to TII.
- Any damage caused to the pavement of the existing national road due to the turning movement of abnormal length loads (eg tearing of the surface course) shall be rectified in accordance with TII pavement standards.
- In relation to greenway proposals in the vicinity of the proposed works, consultation with Meath and Westmeath County Councils own internal project and/or design staff is recommended.
- TII recommends resolution of these matters in advance of any decision on the application.

7.3.4 Department of Defence.

In the event of permission all turbines should be illuminated by Type C Medium intensity, fixed red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent. If LED or other lighting types are used, should be visible to night vision equipment. Obstacle lighting must emit light at the near infra-red

(IR) range on the electromagnetic spectrum specifically or at least near 850 nanometres of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light. Any Irish Air Corps (IAC) requirements are separate to IAA requirements.

7.3.5 Fáilte Ireland.

Notes that the Irish landscape has been the cornerstone of international tourism marketing campaigns for decades. Quality, character and distinctiveness of this valuable resource should be protected. Fáilte Ireland has been allocated €68 million EU 'Just Transition' funding for tourism in Ireland's midlands regenerative tourism scheme. A key priority is to support the regeneration and repurposing of peatlands and related land through the delivery of a strategic network of connected walking, cycling and water trails across the midlands. Fáilte Ireland is aware of the significant effect that wind farms can have on the local and wider landscape. Photomontage images show the extent of development and visibility from highly sensitive nationally and internationally important landscapes and the potential for significant cumulative effects. Fáilte Ireland requests that the Board consider, assess and satisfies itself that the proposed Ballivor wind farm development will not result in significant effect either on its own or cumulatively on the landscape or visual environment of these highly sensitive national and internationally significant cultural and tourism sites.

7.3.6 Inland Fisheries Ireland

There are many surface waters which are not formally designated but which support populations of Annex II species designated under the Habitats Directive. A significant amount of fish rearing occurs in very small catchments and seasonal streams. Potential arises to impact on downstream fisheries resources if not carried out in an environmentally sensitive manner.

In the context of the EU Water Framework Directive, the Stonyford River adjacent to the site is currently at moderate / poor (2020), a reduction from moderate in 2018 The River Deel is currently at good status an increase from moderate in 2018. The River Boyne also adjacent is currently at Moderate status. All three rivers contain stocks of

Atlantic salmon, Brown Trout, Eel and lamprey. The Royal Canal is also in close proximity. Proposal gives rise to potential for impact on a wide range of fisheries waters on the Rivers Stonyford, Deel and Boyne including areas designated as SAC's. angling waters, adult holding areas, nursery and spawning waters, etc forming parts of the Eastern River Basin District.

All natural watercourses which have to be traversed during site development and road construction works should be effectively bridged prior to commencement. The crossing by way of fords is unacceptable because of the amount of uncontrolled sedimentation that can be generated. If temporary crossing structures are required IFI approval will be necessary as regards specification and timing of installation. Design and choice of temporary crossing structure must provide for passage of fish and macroinvertebrates, the requirement to protect important fish habitats eg spawning and overwintering areas as well as preventing erosion and sedimentation, In certain circumstances access for angling or commercial fishing purposes may also be required. No temporary crossing on any watercourse shall be installed without the approval of IFI as regards sizing, location, duration and timing. The preferred option is for clear span 'bridge type' structures on fisheries waters. The creation of fords on streams and rivers through the introduction of stone is prohibited.

Where circumstances such as space or access difficulties preclude use of clear span structures, temporary crossing structures shall comply with the requirements of Inland Fisheries Ireland IFI in design and construction, maintaining stream profile and ensuring no alteration in speed or hydraulic characteristics and providing capacity to convey full range of flows including flood flows. Design to take account of drainage and falls and have regard to all access and construction needs.

Permanent crossing structures should not damage fish habitat or create blockages to fish and macroinvertebrate passage. Design and choice of structure should be based on its technical and economic feasibility to pass fish and macroinvertebrates, the requirement to protect important fish habitats eg. spawning and overwintering areas, provision in certain areas of angling and commercial fishing access including boat access and prevention of erosion and sedimentation. Designs should be such as to verifiably have carrying capacity for a 1 in 100-year fluvial flood flow whilst maintaining minimum freeboard of 300mm. The employment of effective biosecurity measures during the construction phase and the application of the precautionary principle at all

times. All available consideration and support should be afforded to the national blue dots catchment programme which focusses on the protection or restoration of high ecological status water bodies. All works should be carried out as per IFI Guidelines on Protection of fisheries during construction works in and adjacent to waters (2016) and Planning for watercourses in the Urban Environment (2020).

7.3.7 The Office of Public Works OPW

The OPW has concerns that the development, as proposed, may have a negative visual impact on the setting of, significance of, and the view from and to the Hill of Tara, Loughcrew / Slieve na Calliagh, Trim Castle Delvin Castle, Donore Castle, Frewin Hill and Raharney Ringfort.

Regarding **Hill of Tara** (25.8km from nearest turbine) the OPW is very concerned about the impact on the OUV (Outstanding Universal Value) of the Hill of Tara. The Burra Charter (ICOMOS 2013) informs us that: ' cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects' (1.2), that 'setting may include: structures, spaces, land, water and sky; the visual setting including views to, and from the place, and along a cultural route; and other sensory aspects for the setting such as smells and sounds. Setting may also include historical and contemporary relationships such as use and activities, social and spiritual practices, and relationships with other places, both tangible and intangible. The Burra Charter informs us that 'associations mean connections that exist between people and a place' and that 'associations may include social or spiritual values and cultural responsibilities for place', (1.15) and that 'meanings denote what a place signifies, indicates, evokes or expresses to people' (1.16). Based on photomontage VP02 the OPW is concerned that the 26 no 200m high plus 9 no 185m which turbines, the latter already permitted, will feature prominently as very large manmade objects in the views to the west of the Hill of Tara. Being manmade objects, white and rotating, they will draw the eye and become the focus of that view. Their other effect is to alter the perceived scale of the landscape. The Planning application does not refer to World Heritage Tentative list status or proposed OUV detail, nor does it employ the tools provided by UNESCO Guidance and Toolkit for Impact Assessments in a world heritage context or the tool UNESCO Guidance for

Wind Energy Projects in a World Heritage Context to assess the impact of the windfarm on the WH Tentative List property. The OPW recommends that these tools are employed in relation to the potential impact on the Hill of Tara.

Regarding **Loughcrew/Slieve na Calliagh** (approx. 17km from nearest turbine) and by reference to VP 11 and VP12, the OPW is concerned that proposed 26 no 200m high plus 9 no 185m high turbines (permitted Bracklyn windfarm) will feature prominently and become focus of the view and alter the perceived scale of the hinterland landscape. It is worth noting that the turbines will be higher than Slieve na Calliagh, the highest hill in Meath. The landscape surrounding Loughcrew / Slieve na Calliagh is currently rural and unspoilt in character. OPW considers it unfortunate that Bracklyn Windfarm was granted permission despite its impact on this internationally significant cultural landscape. The OPW would ask ABP to take into consideration the OPWs concerns about the potential impact of 35 no turbines (Ballivor 26 plus Bracklyn 9no) in this very sensitive and internationally important viewshed.

The OPW notes that VP 12 (Patrickstown) shows the visual impact of the turbines more clearly than VP11. In the latter the blades are rendered almost invisible against the sky. OPW request that the world heritage assessment tools: UNESCO Guidance and Toolkit for Impact Assessments in a World Heritage Context are employed by the applicant in relation to the potential impact on Loughcrew/Slieve na Calliagh.

Regarding **Trim Castle** (approx. 14.5km from nearest turbine) VP 19 shows full visibility. All the Ballivor and Bracklyn turbines will be visible from the upper floor of the castle. Cumulative impact proposed Ballivor and permitted Yellow River turbines, the proposed Milltown Pass turbines and permitted Bracklyn turbines. The OPW is concerned about the cumulative visual impact of the /Ballivor (and Bracklyn) windfarms from rooftop wall walk level at this important heritage and tourism site.

Regarding Delvin Castle (5km from nearest turbine) the OPW notes the close proximity of the proposed windfarm to Delvin Castle and the extensive theoretical visibility of the turbines. The OPW is concerned about the visual impact of the Ballivor windfarms and the likely cumulative impact with the Bracklyn Windfarm (permitted) The OPW requests that if ABP is seeking additional information a photomontage VP is submitted with analysis of impact.

Regarding Donore Castle (4.6km from nearest turbine) the OPW notes the close proximity of the proposed windfarm to Donore castle and the extensive theoretical visibility of the turbines. The OPW is concerned about the cumulative impact of the Ballivor and Bracklyn (permitted) windfarms, also taking into account Yellow River viewed from the other side of the castle. The OPW request that if ABP is seeking additional information a Photomontage VP is submitted with analysis of impact.

Frewin Hill (Wattstown) 23km from nearest turbine. **Raharney Ringfort** (4.3km from nearest turbine) the OPW requests that if ABP is seeking additional information a photomontage VP is submitted with analysis of impact.

In summary, the OPW is very concerned about the impact on protected panorama views from the internationally significant cultural landscapes of **Loughcrew/Slieve na Calliagh and the Hill of Tara**. The OPW is also very concerned about the visual impacts on the rooftop views from Trim Castle, a highlight of this popular tourist destination. The OPW is concerned that World Heritage impact assessment toolkilts have not been employed to assess the impact on the Outstanding Universal Value OUV at the Hill of Tara. The OPW requests that An Bord Pleanála seek additional information from the applicant to demonstrate implementation of best practice in regard to World Heritage properties and give a strong consideration to the issues raised by the OPW in this submission in their determination of this planning application, in particular in relation to the impact on Loughcrew/ Slieve na Calliagh.

7.4 Third Party Observations

7.4.1 The Board received 42 no. third party submissions from various interest bodies, groups and local individuals. Many of the submissions raise common objections. In view of the commonality of the issues arising, and in order to avoid undue repetition and to enable the identification of salient matters raised, I have summarised the issues under thematic pathways as follows:

7.4.2 Matters Raised.

Regarding the Principle of Development

- While a number of the submissions indicate no inherent opposition to windfarms it is asserted that the compatibility of renewable energy projects and biodiversity has yet to be proven.
- Provision on cutaway and cutover peatland must be consistent with a full range of planning and environmental considerations and especially with the rehabilitation and rewetting of the bogs.
- Concern that raised bog remnants around the margins of the site, which should be protected, will be used for domestic turf cutting while Bord na Mona attempt to recreate raised bog in an experiment. Huge fragmentation arises from roadways and infrastructure, concrete bases and continual hydrological management and drainage. Concerns highlighted in NPWS scoping submission regarding cumulative impacts with other developments (not only wind farms) hindering recovery of biodiversity, especially for wetland species, ground nesting birds and nocturnal migrators.
- Concern regarding impact on Carranstown Bog which has been subject to some restoration treatment within the Peatland Climate Action Scheme. This enhanced rehabilitation project has been funded to ensure that some of Bord na Móna's land is restored, not just rehabilitated. Research (BOGLAND EPA 2011) has shown that Bord na Móna's standard rehabilitation does not go far enough in terms of climate change mitigation and biodiversity recovery in that standard rehabilitation only aims to reduce emissions to air and water once industrial production has finished at the site and that with predicted climate change, the standard rehabilitation sites will revert to emitting carbon and not withstand the climate pressures predicted. While a windfarm has a lifespan of a couple of decades, raised bogs sequester carbon, clean and regulate water and provide for biodiversity for millennia. The development of a windfarm will be detrimental to any possible effective restoration at this site in the future.
- Site should be restored fully for biodiversity recovery and climate mitigation as the main focus. Ireland has 60% of Europe's resource of this type of unique habitat and we have international obligations to protect and improve the habitat quality of peatland nationally. Raised bogs are open landscapes and the species which utilise them need open spaces.

- Westmeath categorized as low capacity for wind energy in the County Development Plan - requirements for industrial windfarms.
- Alternative offshore solutions more appropriate.
- Challenge the applicant's assertion that the proposal would offset the loss of carbon storage capacity that would be facilitated by the rewetting of the Ballivor Bog group as originally intended.
- Given the large carbon sequestering capacity of the application site and the sensitivities of the habitats and species within, particularly in reference to the Marsh Fritillary butterfly, Whooper Swans and other Annex 1 Raptor and BoCCI Red listed species identified within the applicant's field surveys, a refusal of permission is appropriate, in favour of seeing the application site restored into a regionally if not nationally important habitat and recreational educational facility.
- Development on planar landscape is contrary to 2005 Wind Energy Development Guidelines.

7.4.3 Negative impact on biodiversity.

- The proposal will be a disaster for the entire local ecosystem and local area. A significant disruption to wildlife especially bird species.
- Noting that swans are observed in field adjacent to Wooodtown House annually and in 2021 approximately seven flocks flew over and approximately 100 swans landed in the adjacent field and rested overnight. From the direction of flight it is believed that these birds could be migrating to places such as Lough Iron SPA or Lough Derravaragh SPA. The potential for significant effect on these European sites arises. EIAR does not appear to address the potential impact on migration routes.

7.4.4 Inadequate Public Participation.

- Public consultation took place during the Covid pandemic thereby limiting opportunity for meaningful engagement.
- "Walkover" community consultation

- Many elderly people living in the area never got their opportunity to have their say due to Covid Pandemic.
- Nominal 2km communication boundary is inappropriate.
- Manifestly unfair to expect a community to analyse volume of documents in short time frame compared to nine year preparation by team.
- Local group requested a hard copy of documents and were referred to the website or to view files in offices of the planning authority. At least one copy should have been provided to representatives. Information difficult to access.
- Evident frustration and disappointment at failure to engage.

7.4.5 Noise impacts

- Noise monitoring inadequate. No appreciation of nuances of individual properties in terms of living quarters, screening, windows and glazing.
- Errors with regard to data for noise monitoring. Figure 11-2 indicates noise monitoring equipment location B to be at House 115 which it is incorrect. Coordinates given for location B in Table 11-2 are for house 115 which is some 450m closer to the turbines than the actual monitoring location. Concern that data for location B could have been incorrectly analysed and interpreted as the location is incorrect.
- Section 11.6.3.1.3 concludes that with respect to the EPA criteria the potential worst case cumulative effects will be negative, moderate significance and long term. This is repeated in Section 11.7.3.1.1. This does not appear to be consistent with the short summary in Chapter 5 (Section 5.6.3.2.2) where the predicted impact associated with operational turbines is “long term and not significant.”
- Despite facilitating acoustic survey third parties were not provided with results and therefore not enabled to engage from an informed position.
- Request that the Board stipulate that the detailed design of the infrastructure includes mitigation of noise impacts on home to owner’s satisfaction prior to the construction of the turbines.

- No reference to infrasound.

7.4.6 Shadow flicker.

- Failure to consider unique circumstances in relation to shadow flicker. Proposed mitigation will have no screening effect. Errors e.g. houses mislabeled.
- Further analysis required to estimate actual impact and solutions devised prior to construction of the turbines.
- Shadow flicker described assessed as indoor issue. Impact on amenity areas of concern not addressed.

7.4.7 Property Value

- Evidence regarding property values is extremely weak. No evidence of schemes from Ireland. Studies relied upon are out of date and not comparable in type/scale of development or context.
- Recent studies released from the London School of economics states that residents within a 2km radius of windfarms had their properties devalued up to 12% and property prices as far as 14km away may be reduced.
- No investigation of impact with local estate agents.
- Request that ABP stipulate the undertaking of an exercise to quantify the likely impact on property value and to compensate local property owners or any reduced value.

7.4.8 Impact on Residential and other amenities.

- Right to residential amenity peace and tranquility.
- Impact on farming. Dairy herd.
- Health effects. Autism, epilepsy, dementia. Settlement for high court damages Kelleher Family Cork 2020. Enercon.

- Disruptive impacts of construction phase and operational phase.
- Westmeath County Development Plan. Requires an interface distance of 2000 meters from any turbine of this scale to the nearest residential dwelling.
- Residents have endured life beside Bord na Mona's industrial peat extraction endeavours for 40-50 years. Current proposal further extenuates the industrial landscape to the extreme. Time for landscape and environment to be given chance to recover.

7.4.9 Legal Ownership

- As peat harvesting is no longer carried out by Bord na Mona land should be returned to the original landowners and community.
- Complex landownership. Search on Land Registry shows several tracts of land not currently owned by Bord na Mona. No consent demonstrated.
- Registered owner gives no consent for use of property MH8875 which is within the application site boundary. Folio MH5079F also included without owner's consent.

7.4.10 Appropriate Assessment.

- NIS fails to identify the downstream Boyne Estuary SPA (Site Code 004080), the Boyne Coast and Estuary SAC (Site Code 001957) the Boyne Woods proposed NHA (Site Code 001592) and the Boyne Coast and Estuary proposed Natural Heritage Area (Site Code 001957) within the Zone of Likely Impacts. Unlike the upstream, SACs identified in Table 3-1, these additional designated conservation areas are hydrologically linked to the application site and any potential adverse impact affecting the River Boyne and River Blackwater SPA and SAC has the potential to impact them. Such a crucial omission severely undermines the credibility of the NIS assessment and its subsequent conclusions.
- The necessity for so many complex mitigation measures to ameliorate potential impacts arising from each stage of development not only

underscores the environmental sensitivity of the application site and surrounding area but also strongly implies the inherently impactful nature of the proposal and its unsuitability to the application site.

- Broad unspecific mitigation measures do not meet the threshold of relevant NIS related legislation, regulation, and guidance.
- Location of ornithological studies. No VP close to SAC or SPA.
- Otter and kingfisher surveys are outdated. Reliance on these in assumption of “no adverse effects” untenable. Deferring the implementation of more detailed and informative baseline otter and kingfisher surveys to after permission has been granted is inappropriate and contrary to the precautionary principle at the core of AA. The failure to establish with any degree of certainty use of the site by otter and kingfisher for foraging nesting or breeding means that ABP cannot be reasonably be certain that the development proposal will not have any adverse effect on either species.
- No specification of consequences in the event that either species has taken up residence within or in proximity to the site. Mitigation prioritises the development proposal over protection of kingfisher existing and or future nesting sites.

7.4.11 Specific concerns with regard to Species Habitats

- The EIAR tacitly acknowledges the presence of the highly vulnerable and sensitive Annex II March Fritillary butterfly but the lack of detailed assessment as to the true extent of its population density and range throughout the application site leads to serious concerns over the reliability of the subsequent conclusion that the development proposal poses no threat.
- Failure to consider potential operational impacts from bird collision, interruption of flight paths and noise pollution within and outside the site.
- Lough Owel SPE Lough Ennel SPA Garriskil Bog SPA Lough Iron SPA and Boyne Estuary SPA are used by the same species as the River Boyne and River Blackwater SPA and SAC including whooper swan, tufted duck and coot. The NIS fails to recognise that these and other species make use of multiple

habitats and that each of these sites are well within each species foraging /commuting range.

- Failure to account for the potential impact on other bird species flying between these habitats.
- EIARs collision risk assessment, a mathematical model, cannot be relied upon as it does not provide required certainty and does not provide conclusion.
- Curlew recorded on the bog.
- Stonyford River. Winter spawning ground for wild Atlantic salmon.
- Application site and surrounding land home to Marsh Fritillary Butterfly - Annex II listed species categorized as vulnerable by NPWS. It is suggested that Marsh Fritillary is more prevalent throughout the application site and peripheral areas than suggested in EIAR. Mr Jesmond Harding a highly qualified conservation officer with butterfly conservation Ireland surveyed areas of the Ballivor bog and his report undermines the finding of the EIAR and subsequent conclusions. The findings confirmed the observation of marsh fritillary within the construction footprint of the proposed development. Evidence of breeding was also found in the form of a pupa and freshly laid eggs. Marsh Fritillary should have been included as a key ecological receptor.
- Impact on Ancient Woodland. Inadequate assessment of impact on this highly sensitive receiving environment. Residual woodlands known as the Black Hills situated to the south of the bog.
- Removal of large part of the bog and replacement with hard surface will naturally mean that essential soakage area will be removed. Road network will act as a barrier to drainage. Excavations will have an adverse effect on the hydrology of the area. Potential subsidence issues.
- Bats. Striking. Bat lungs may explode under pressure from turbines. Impact of tree felling on roosting bats.
- Impact on native insect biomass from turbulence and electromagnetic fields
- Impact on insects and bee colonies.

- Barn owl box less than 400m from one of the turbines. Birdwatch survey of barn owl Westmeath.
- Yellowhammer. Cuckoo.
- Pine marten & Stoat & Badger.
- Bird displacement collision risk. Table 7-11 Avifaunal Receptor Evaluation and selection criteria rational should be reviewed in full and independently.
- Golden Plovers in the area and large flocks of over 200-500 at a time.
- Curlew – observed on five occasions during VP surveys. 3 within 500m of turbine and two within potential collision height. Observations only in non breeding season. A specialist nest protection officer should be engaged to do a full survey of the area.
- Loss of oak ash hazel woodland is stated as a permanent moderate negative effect on this habitat at a local scale which is considered to be an understatement as loss of ash trees along haul route will also be extensive.

7.4.12 Cumulative and In Combination effects.

- NIS fails to include the Government's National Planning Framework in review of policies and objectives that relate to Natura 2000 sites in particular National Policy Objective NPO 59 and 60.
- Cumulative assessment in combination effects inadequate.
- NIS fails to consider the interconnectivity of other designated conservation areas in terms of how they are used by multiple protected species for foraging nesting and or breeding.
- Concreena and Cloncant windfarms not referenced.

7.4.13 Visual Landscape Impact

- Scale of the proposed turbines inappropriate in a low-lying area. Height of 200m incompatible with this landscape.
- Reliance on foliage and field hedgerows to screen 200m turbine height dubious.
- Photomontage not accurate reflection and notably taken with trees and hedgerows in full foliage.
- While site itself is flat the surrounding landscape comprises low lying drumlins and an undulating topography. Focus of LVIA and majority of the supporting photomontages seen from locations at lower elevations. Few photomontages from closer elevated vantage points.
- LVIA is preferentially subjective in nature and assessment. To illustrate VP0A and 03B have been taken from the same point along the Bracklin Road close to three residential properties (Eircodes C15, AT82, C15, H2YO and C15XK25). VPO 03A looks southwestwards over four of the 26 proposed turbines according to the photomontage submitted with the application. VP03B looks northwards over seven of the proposed turbines. As an alternative to VP 03A and 03B a perspective looking south-eastwards from Old Bog Railway Trail (located 400m to the northwest of VP03A and 03B) would incorporate many more of the proposed turbines and one of the two proposed meteorological masts. Concern is that the LVIA is not representative of the proposed development's true impact on the amenities and character of the receiving landscape.
- Submitted photomontages illustrate how physically dominant, overbearing and visually intrusive the proposed turbines will be from sensitive receptors. From certain locations and perspectives, the entire horizon of counties Meath and Westmeath will be dominated by wind turbines.
- LVIA did not consider the inter-visibility between Slieve na Caliagh and the Hill of Tara and how the sweeping landscape between both would be affected by the proposal. Purposeful omission of the potential intervisibility between the Hills of Tara and Hill of Uisneach is a significant flaw.

- Absence of photomontage for Hill of Ward demonstrates a serious deficiency in the thoroughness of the LVIA.
- VP14 taken from the Commons of Lloyd at Kells where the magnitude of change assessed as negligible and residual effect not considered significant. The view southwestwards at ground level illustrates visibility over horizontal treeline. Tower or Spire of Lloyd is an elevated public view which has been ignored in the LVIA.
- ABPs attention is drawn to recent refusal by Meath County Council of a solar panel farm approximately 12 km from the Hill of Tara - Refused February 2023 on grounds of landscape impact in a highly sensitive landscape 22/552[3].
- Exclusion of protected views from LVIA assessment contrary to policy.

7.4.14 Negative impact on Cultural Heritage.

- Archaeology – Site lies in a highly significant and culturally important ancient landscape. Test trenches should have been carried out to assess potential impact. Mitigation unclear regarding potential features uncovered during monitoring.
- Negative impact on Woodtown House Protected Structure within 1250m and Killagh House, Killagh Co Westmeath which is of national archaeological architectural and artistic special interest.
- Chapter 12 refers to 10km zone of theoretical visibility however 5km at table 12-1 with no explanation or justification.
- In failing to identify if there are any views of the proposed development to or from any of the 68 protected structures or their attendant grounds ABP cannot rely on the accuracy or thoroughness of chapter 12 assessment or in its subsequent conclusions.

[3] Currently under appeal. ABP Ref 316078-23 refers.

- Assessment of direct impact on Bord na Mona railway line, inadequate. Specific details of floating roads over rail line not provided. Generic cross sectional illustration does not provide detail of seven points of intersection. No assessment of impact on structural viability or special interests of the protected railway tracks.
- Remains of Clonycavan Man, a well preserved Iron Age body, unearthed on the southern part of the Bog in March 2003 and are now on display in the national Museum of Ireland. A precautionary principle should be adopted to ensure any potential further archaeological remains are preserved.
- Full independent review of impact on heritage areas required.
- 2km mapped area not adequate given 200m turbine height and scale of proposal.
- Impact on Martinstown Castle - Burial graves and church ruin.
- Extensive tree felling detrimental to landscape character.

7.4.15 Traffic

- Projected 2026 traffic levels are purely conjectural and unreliable baseline.
- Failure to adequately take account of existing traffic patterns within Ballivor eg analysis of school traffic.
- Stretches of R156 inadequate for proposed haul route. Sections of the regional road have no foundations and will require massive remedial work.

7.4.16 General / Other

- Over extraction of kinetic energy from the wind resource reduces wind generation capacity factor by greater than 50%.
- ABP has no legal option but to reject all wind farm applications until government complies with law ECJ K C-24/19
- Question independence of analysis.

- 2006 Wind energy guidelines are outdated.
- Fire risk. Failure to rewet entire Ballivor Bog Group increases risk.
- No construction details and or maintenance schedule for amenity tracks.
- Inadequate assessment of alternatives.
- Question validation of the application in light of substitute consent application. Application premature.
- Inaccuracies within the application suggest a rushed approach to the EIAR and lack of respect for the planning process.
- Athboy Groundwater body at risk of not meeting WFD objectives.
- Flood risk.
- Scoping opinions of HSE Department of Agriculture Food and Marine and Failte Ireland not provided.
- Immense use of aggregates and other finite resources. Compliance issues in local quarries.
- Intermittent energy has to be backed up by dispatchable sources of energy. Deep bore geothermal far more appropriate alternative.
- Wind energy developments unsustainable without grant aid.
- Multiple permissions for individual windfarms constitute project splitting aka salami slicing.
- Adverse impact on tourism, aviation.
- Health and safety issues Settlement in cases Shinden & Ors v Enercon Windfarm Services Ireland Ltd & Anor 2011/9955P and Laura David and Jack Kelleher v Green Energy Supply Ltd.
- Significant greenhouse gas emissions and air pollution arising from truck movements.
- Decommissioning and disposal difficulties.
- Applicant has ignored obligations with regard to the SEA directive. Plan is a project.

- Non-compliance with Article 6 of the Habitats Directive and case law. C256/11 Peter Sweetman and Others v An Bord Pleanála, C-164/17 Edel Grace and Peter Sweetman v An Bord Pleanála. C-323/17 People Over Wind and Peter Sweetman v Coillte Teoranta, Case C-461/17 Brian Holohan and Others v An Bord Pleanála.
- Question compliance with the machinery directive [2006/42/EC]
- Lighting strikes storm damage anchorage.
- Transformers and battery storage. Fire risk.
- Question compatibility with the European Landscape Convention
- Composition of turbines. Use of rare earth metals. Ethical issues human rights abuses regarding mining of rare earth metals.
- Cost benefit analysis should be connected to establish value for money given the resources required.
- Clarification on whether SF6 gas will be used as an insulant. Extremely potent and persistent greenhouse gas used as an electrical insulant and arc suppressant.
- Sea based alternatives not addressed within the EIAR therefore rendering it incomplete.
- Emissions from disturbed peatland calculated as 7,553 tCO2 from a volume extracted and spread on top of existing land of 454,474m3. It is considered that a conversion factor of 150 to 170kg CO2/m3 peat should be used. Emissions from impact on the water table also need to be evaluated. No baseline survey of existing CO2 emissions from existing drainage has been provided and no estimates of future emissions attributable to failure to rewet subsequent to the previous unauthorized extraction. Non site-specific calculation is offered. Recommend use of the Scottish carbon calculator or similar.
- Bord na Mona is required under EU law to nullify the unlawful effects and to remedy environmental harm caused by the industrial extraction of peat at Ballivor Bog.
- Restrictions on future planning applications.

- Excavation of 732,000m3 of peat and spoil as stated by Bord na Mona during the construction phase is in direct contravention of the European Peatlands Initiative and will have a dramatic impact on the carbon sink currently provided by the peat and to the native animals and species currently grazing and nesting on the bog.
- Application does not adhere to the Westmeath County Development Plan requiring 2000 metres separation where height of the wind turbine is greater than 150metres.
- Eirgrid dashboard shows wind energy to be unreliable.
- Importance of a holistic whole life cycle view.
- Intrusion of red light in the sky.
- Detailed drainage design mitigation has not been completed. Reliance on IFI 2005 Guidelines on protection of fisheries during construction works in and adjacent to waters which is a general guideline not a mitigation measure for an SAC. Details of proposed double row silt fences down gradient of construction area near stream construction work have not been provided. Reliance on new Section 50 application (Arterial Drainage Act 1945) and post development mitigation and best practice is not mitigation. Not permitted as per Humphries J in Sweetman v An Bord Pleanála. Cannot rely on examination, evaluation and analysis in the light of best scientific knowledge when no actual mitigation measures are proposed.
- Noting Article 6.3 of the Habitats Directive and the interpretation of the ECJ 258/11 44. “So far as concerns the assessment carried out under Article 6(3) of the Habitats Directive, it should be pointed out that it cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned (Ref Case C404/09Commission v Spain Paragraph 100). NIS does not comply with the directions of the Courts of Justice of the European Union.

7.5 Response to Submissions on behalf of the applicant

7.5.1 A response was received on behalf of the applicant from MKO Planning and Environmental Consultants and is summarised as follows:

7.5.2 In relation to **landscape and visual impacts**

- Landscape Visual Impact Assessment LVIA within EIAR follows best practice. Methodology is clearly set out. 19 verified photomontages. Rationale for overall judgement is clear. (Sensitivity x Magnitude of Change = Effect)
- It would be disproportionate to include an individual photomontage from every receptor and this is not required to conduct a thorough and robust assessment of landscape and visual effects or indirect effects on siting of heritage assets.
- Viewpoints selected to represent the experience of different types of visual receptor.
- Regarding effects on residential visual amenity the proposal adheres to recommended 500m setback distance in the 2006 guidelines and also the 4 times tip height setback distance as set out in the draft guidelines 2019. Design was part of iterative design process to mitigate potential for visual effects on sensitive receptors. As reported in the EIAR LVIA some significant visual effects will arise from a few residential receptors in very close proximity however in general visual effects on residential receptors in the wider landscape setting are of a lesser impact due to the flat nature of the landscape and disproportionate screening effect provided by mature boundary vegetation. The visibility of the proposed turbines becomes very limited beyond distances of 2-3 km in such a flat landscape. In general receptors will only experience views of a few of the proposed turbines. All turbines will only be experienced from a very elevated vantage points with open views across the landscape.
- Regarding landscape and visual effects on local heritage sites in close proximity. (The Hill of Ward, Tower House at Causestown, A Barrow at Rathwire Upper and Martinstown Castle), apart from the Hill of Ward the others are not assessed in the EIAR LVIA but are addressed in Archaeology and Cultural Heritage Chapter 12.

- Regarding Hill of Ward photowire shown in fig 13-23 of LVIA shows that a dense cluster of woodland immediately southwest of the Hill of Ward provides screening of views between it and the proposed development reducing potential for significant effects on protected views. It is acknowledged that slightly more visibility may occur during winter months.
- Regarding the Tower House at Causetown the photomontage shown in viewpoint 1 is located in proximity and at similar setback. Screening effect of landscape features such as mature woodland is evident. It is not a receptor of high sensitivity as a local landmark in the landscape. Public views are from south, east or west. It is unlikely that the proposed turbines will have much visibility in combination with the tower due to setback distance and dense vegetation screening.
- Regarding Barrow at Rathwire Upper given 8km setback, the setting of the Barrow within field enclosed by boundary vegetation it is not likely to cause any significant impact on the character or appreciation of this receptor and its setting.
- Regarding Martinstown Castle 3.3km from nearest proposed turbine. A permitted turbine (Bracklyn windfarm) is circa 1.3km from the castle. Some cumulative effects will arise however no significant effects are likely to arise.
- Regarding High Sensitivity Cultural Heritage sites it is noted that third party observers consider it unacceptable for turbines to be seen within the landscape from the / Hill of Tara and other elevated vantage points of high sensitivity. Such a principle would eliminate vast areas of the Irish landscape from wind energy development.

7.5.3 Regarding Archaeology and Cultural Heritage

- Noting observation of DAU regarding concerns of omission of three monuments from the cultural heritage impact assessment namely Tlachtga/Hill of Ward (National Monument No 150) Tower House at Causetown (Lune By)Preservation Order 176/1945 and Barrow at Rathwire Upper (Preservation Order No 18/1977). There is no standardised Irish industry wide approach for

assessing the degree of impact to the setting of a monument. Based on professional judgement the study area of 10km was used for National Monuments in state ownership and with preservation orders.

- Regarding / Tlaghtga Hill of Ward National Monument No 150, it lies 9.3km from nearest infrastructure (T24) and comprises a quadri-valllate enclosure dating to the late bronze age. ZTV indicates that all turbines will be visible from the top of the hill (worst case scenario based on open bare landscape with no vegetation screening). Site visit determined that just one turbine Is visible. Impact on setting deemed slight moderate.
- Regarding tower house at Causetown (Lune By) Preservation Order 176/1945 located 3.4km northeast. – [4]
- Regarding Barrow at Rathwire Upper (Preservation Order No 18/1977) located 8km west of T10 in Co Westmeath. ZTV indicates that 14-20 turbines would be visible in open bare landscape. However separation distance between the windfarm and low lying monument, screening from intervening vegetation and the town of Killucan will impede views. Impact on setting is predicted to be slight.
- In terms of cumulative impact while theoretically the upper portions of both the permitted Bracklyn and Ballivor turbines may be visible from all three assets the effect on setting is categorised as slight /moderate. Cumulative impact remains slight moderate when solar farms are considered given the lack of solar farm developments permitted or proposed within 5km and their low lying nature.
- Regarding DAU recommendation for pre-construction archaeological testing, Chapter 12 of the EIAR provides a comprehensive Archaeology and Cultural Heritage Impact Assessment. Over 98 trial pits under excavation licence 20E0224 were undertaken on the site. Nothing of archaeological note was discovered. Partial remains (Clonycavan Man) consisting of torso, head and upper arms were recovered at Bord na Mona's Ballivor Works in Feb 2003. The Ballivor Bog Group was one of 15 bogs selected for archaeological survey in 2005 as part of the Archaeological Survey of Ireland Peatland Survey. No

[4] I note apparent omission /error as report repeats assessment in respect of Tlaghtga Hill of Ward.

archaeological monuments were recorded during the survey. Mitigation measures proposed for the construction phase include archaeological monitoring under licence. It is asserted that given the lack of archaeological finds during the surveys and continuous industrial removal of peat at the site until June 2020, extensive testing undertaken as part of the proposed development investigative works and small percentage of development footprint mitigation measures including archaeological monitoring under licence during construction rather than before construction is appropriate for the development site.

7.5.4 Regarding Ecology / Biodiversity

- Regarding loss of 0.26ha of oak, ash, hazel woodland it is noted that the habitat management and enhancement plan (Appendix 6-5) of the EIAR provides for the planting of 1.5ha of oak, ash, hazel woodland at the southern end of Bracklin Bog. Following the implementation of the habitat management and enhancement plan there will be no permanent significant effect on this habitat. While there may be a short term negative impact the proposed development will result in an overall long term positive effect on Oak ash hazel woodland habitat within the study area by increasing its area by 1.24ha.
- Badger surveys were conducted adhering to best practice guidance. It is proposed that a pre-construction badger survey will be undertaken on the development footprint and adjacent areas to include identified setts at Carranstown Bog. This will determine if setts are in use and if any additional setts or sett entrances have been excavated in the intervening period. Monitoring of an outlier sett identified within the footprint of the proposed substation will be conducted for 2 weeks prior to any works. Exclusion measures will be put in place of outlier set is found to be in use in accordance with NRA Guidelines.
- Exclusion zone fencing and appropriate signage will be put in place.
- Extensive studies were carried out throughout 2020,2021 and 2022 in line with appropriate and relevant guidance. Desktop studies, consultation and field surveys detail comprehensive ecological impact assessment carried out to

identify key ecological receptors. The proposed development was assessed cumulatively with other projects in the wider environs. Following consideration of the residual effects (post mitigation) it is concluded that the proposed development will not result in any significant effects on any of the identified key environmental receptors.

- NIS concludes that in view of best scientific knowledge and on the basis of objective information the proposed development whether individually or in combination with other plans or projects is not likely to have significant effects on the European sties assessed as part of the AA process.
- Regarding impact on bats during construction phase the impact assessment concluded that following mitigation there is no potential for the construction of the proposed development to result in significant effects on the local bat population at any geographic scale given the small area of suitable habitat to be lost relative to the area of suitable habitat in the wider landscape and given the standard best practice mitigation. Residual effects on bats with regard to collision mortality are not anticipated.
- Regarding Marsh Fritillary, Annex II species, as set out in section 6.6.2.1.6 of the EIAR adult marsh fritillary were identified during the walkover survey. The proposed development has been designed to avoid areas identified as potential significant habitat for marsh fritillary. No areas identified as providing suitable habitat for this species are located within the development footprint. Taking into consideration the findings of the Lepidoptera report submitted including the identification of marsh fritillary breeding sites in close proximity to the footprint of the proposed development, additional surveys were undertaken on a precautionary basis on 22 August 2023 to ground truth previous surveys 2020, 2021 and 2022 and third party survey 2023. Additional survey is provided in Appendix 1. Following on from recommendations of Lepidoptera report and 2023 survey findings, marsh fritillary have been included as a key environmental receptor and an impact assessment has been undertaken in the survey document included as appendix 1.
- Regarding the opportunity for habitat enhancement for bog dependent species through rewetting of raised bog, it is important to note that the footprint of the

proposed development only accounts for a small percentage of the development site amounting to no more than 2% of the land area. Footprint has been designed to avoid the most sensitive peatland habitats within the development site particularly larger areas of uncut remnant raised bog.

- The Habitat management and enhancement plan allows for rewetting of 12ha identified for peatland enhancement located at the northern extent of Bracklyn Bog. Considering the provisions of the plan and small impact on habitat as a result of the development footprint, the proposed development will have an overall positive impact on the wider bog and as such an overall positive impact on marsh fritillary and other lepidoptera species. Operational phase management of areas of suitable habitats for the species is provided for.
- Regarding pollution comprehensive prevention and hydrocarbon management mitigation measures are set out in EIAR and CEMP.
- Regarding potential impact on salmon migration and breeding habitat the proposal has been designed to avoid the main watercourses within the site with a 50m buffer between main windfarm infrastructure and any natural watercourses (with the exception of upgrades to existing watercourse crossings and existing site access tracks) therefore there is no potential for the proposed development to result in barriers to movement of salmon or any other aquatic species.
- Regarding the AA screening process and the assertion that further sites should have been screened in, all relevant European sites on a source pathway receptor model were considered. No potential for likely significant effects to any other European sites.
- Regarding NIS drainage design, Chapter 9 of the EIAR Hydrology sets out the detailed drainage design and procedures to allow the requisite flexibility to ensure that design measures are effective in the face of unforeseen circumstances during construction. It relies on tried and tested methods that follow all relevant guidelines, and which have been proven to be effective. There are no lacunae.

- No batching or storage of cement will be permitted within 50m of any watercourse crossing.
- Watercourse crossings are designed to ensure no adverse effects on hydrological regime or water quality.
- All works will be supervised by an Environmental Clerk of Works and project hydrologist. Full details of mitigation measures are provided in Chapter 4 of the EIAR, Appendix 41a, chapter 9 of the EIAR (appended to the NIS) and the CEMP (Appended to NIS). There are no lacunae or ambiguity in the measures prescribed, how they will work and how they will be implemented.
- The NIS provides for all work pertinent to potential impacts on European Sites to be supervised by an Environmental Clerk of Works and the project hydrologist ensuing that all works are undertaken as per the NIS as well as providing ad hoc mitigations where the need may arise.

8.5.5 Regarding Ornithology

- Bird surveys have been ongoing at the site. Throughout the initial survey period (between April 2020 and September 2022) a comprehensive suite of bird surveys were undertaken. This is now supplemented by an additional winter season of surveying from October 2022 to March 2023. This serves to further corroborate results of the impact assessment as reported in Chapter 7 of the EIAR. The bird assemblage of the windfarm site and findings of the bird surveys remained largely unchanged during surveys October 2022-March 2023. Collision risk model updated based on updated analysis given the concerns raised.
- Noting the recommendation of DAU that radar surveys of nocturnal migrants be undertaken to establish the extent of such movements and allow estimation of collision risk and determine whether mitigation may be required to minimise mortality rates from collision, with reference specifically to Whooper Swan and Greenland Whitefronted Goose, it is asserted that the use of automated sensing techniques such as radar is more typically used for surveying birds offshore rather than onshore. The radar would not be able to differentiate these

species from the several other species of migratory/wintering swans and geese that occur in Ireland. NatureScot (2017) recommends that radar is only used to assess sites where there is likely to be high nocturnal activity of important species, especially if a SPA qualifying species are potentially affected." In the current case the comprehensive suite of surveys has demonstrated that there is no evidence for high levels of nocturnal activity. As outlined at Section 7.4 of the EIAR Whooper Swan was recorded roosting at dusk on local water bodies. It is reasonable to assume that once on the roost birds did not undertake further nocturnal flights. Greenland white fronted goose were not recorded locally. The Whooper Swan recorded during surveys were local winter residents and were not found to be connected with an SPA and there was no Greenland White Fronted Goose present locally throughout surveying including the migratory period. Therefore, it would not be recommended to use radar at the proposed windfarm site following NatureScot (2017) criteria. It is possible to estimate levels of nocturnal activity in practice by applying a percentage increase on the flight activity recorded during vantage point survey in the range of 25-28% depending on the species. This approach was taken in the assessment of collision risk. No significant risk was predicted for either Whooper Swan or Greenland White Fronted Goose. (Refer to 7.6 of the EIAR)

- Regarding nocturnal migration over the site, it is acknowledged that some waterbirds commute between feeding and roosting locations during periods of low light, typically before sunrise or after sunset. Whooper Swan and Greenland White Fronted Geese are two such species that habitually undertake such low flights. The survey scope includes the low light periods before sunrise or after sunset during the migratory/wintering season surveys. As noted in Appendix 7-2 of the EIAR winter vantage point surveys finished/started the hour after/before sunset/sunrise during the migratory /wintering period September to April. The core period for Greenland White Fronted Goose and Whooper Swan in Ireland is October to May. Surveys were designed to overlap with periods of low light to ensure that commuting flights of waterbirds were recorded. Throughout these migratory /winter vantage point surveys no regularly used commuting corridor or migratory route was identified that crossed the windfarm site. No regularly used commuting corridor or migratory route was identified for Whooper Swan or

Greenland White Fronted Goose during these surveys. One irregularly used whooper swan roost was identified 700m north of the windfarm site and two regularly used roosts identified 2.5km south and 5km west of the windfarm site. These roosts were identified when Whooper Swan were observed entering or leaving the roost sites, particularly in low light surveys at dawn or dusk. The identification of these roost sites proves the adequacy of the surveys in identifying commuting corridors of Whooper Swan between their foraging and roosting locations.

- An assessment of the potential effects of the development on night migrating birds was undertaken through the robust survey approach and through collision risk analysis. As outlined in section 2.4 of Appendix 7-6 of the EIAR it is assumed that swan and waders were active for 25% of the night as well as the daylight hours as per Nature Scotland guidance to account for the potential for nocturnal flight activity. Analysis did not predict significant levels of collisions risk for Whooper Swan.
- Greenland White Fronted Goose was not recorded during the comprehensive suite of surveys undertaken at the windfarm site between April 2020 and March 2023. The nearest known regularly occurring population of Greenland White Fronted Goose is at Lough Iron which is c 25km from the application site. No significant effects are predicted.
- DAU also raised concerns about migrating passerines (redwing, fieldflare, and other thrush species, warblers and finch species). As outlined in Table 7-11 of the EIAR, it is generally considered that passerine species are not significantly impacted by wind farm developments as per NatureScot guidelines.
- Any removal of vegetation to facilitate the construction will be conducted outside the breeding season to avoid destruction of birds nests eggs and nestlings.
- Regarding collision risk on species of conservation concern, as outlined in section 7.6.2 of the EIAR effects no greater than low effect significance (Percival 2003) and long-term slight negative (EPA 2022) were predicted for collision risk at the windfarm site. An updated collision risk assessment incorporating more recent wind survey data has been conducted and is

presented in Appendix 4. A 36-month survey period consisting of three breeding seasons and three winter seasons is noted.

- A comparative of collision risk model is provided at Table 3.2 Appendix 3. No significant changes in the collision risk impact for any species assessed.
- Regarding lighting impact on birds/bats, it is likely that collision risk at lit turbines for non-passerine taxa are likely to be relatively low in general. All KERs identified at the windfarm site were non passerines. Notwithstanding this and out of an abundance of caution mitigation is proposed to reduce photoaxis of the required lighting of the proposed turbines subject to Department of Defense and IAA approval.
- Golden Plover fully considered and assessed for impacts in Section 7.6.2.1 of the EIAR. No greater than low significance (Percival 2003) and long term slight negative effect (EPA 2022) predicted for golden plover. Observations on the species between October and March 2023 further corroborate the information presented in the EIAR impact assessment for the species. No significant effects are predicted.
- Regarding Kingfisher. EIAR notes effects no greater than a low effect significance (Percival 2003) and long term imperceptible negative effect (EPA 2022) predicted for Kingfisher. Kingfisher were only observed on two occasions within 500m of the proposed turbine layout throughout the entire survey period. This is a very low rate of occurrence. No flights recorded at the potential collision height with turbines as outlined in Section 7.6.2.3 of the EIAR. No observations of this species between October 2022 and March 2023. No significant effects are predicted. Pre-commencement bird surveys are proposed as per section 7.9.1 of the EIAR.
- No significant effects are predicted. Pre commencement bird surveys are proposed as per section 7.9.1 of the EIAR to identify breeding and roosting locations of species of conservation concern including kingfisher. If a kingfisher nest location is identified a suitable disturbance buffer will be applied in line with best practice.

- Regarding short eared owl these were observed on four occasions throughout the entire survey period (April 2022-September 2022). The windfarm site is of no ecological importance to the species and significant impacts are not predicted. No observations of the species between October 2022 and March 2023. No significant effects are predicted for this species.
- Whooper Swan. Effects no greater than a low effect significance (Percival 003) and long term slight negative effect (EPA 2022) were predicted for Whooper Swan. There were three roost sites identified for Whooper Swan within the wider area of the wind farm site. The impacts of the wind farm on these roost sites were fully assessed as part of the EIAR. No significant changes in abundance or distribution of this species was identified between October 2022 and March 2023. No significant effects are predicted.
- Regarding Barn Owl effects no greater than low effect significance (Percival 2003) and long term slight negative effect (EPA 2022) were predicted for barn owl. Two breeding territories for barn owl were identified within the wider area of the wind farm site. No significant change in distribution or abundance of the species was noted in the survey of October 2022 and March 2023. No significant effects are predicted. As a best practice measure it is proposed to erect ten barn owl nest boxes for the benefit of local barn owls.
- Curlew were only observed on three occasions within 500m of the proposed turbine layout. There was no observation of curlew during the breeding season and no breeding territories identified. The wind farm site is of no ecological importance to this species and significant impacts are not predicted. There were no observations of the species within 500m of the windfarm site between October 2022 and March 2023. No significant effects for this species are predicted.
- Regarding Buzzard no greater than a very low effect significance (Percival 2003) and long term imperceptible negative effect (EPA 2022) predicted for buzzard. Observations October 2022-March 2023 confirmed that the buzzard is an irregular visitor. No significant effects predicted.

- Regarding Yellowhammer. As per SNH guidance it is generally considered that passerine species are not significantly impacted by windfarms. Therefore, no significant impacts are predicted.
- Regarding Cuckoo. As per SNH guidance it is generally considered that passerine species are not significantly impacted by windfarms. Therefore, no significant impacts are predicted.
- The application site will not significantly impact avian populations of importance in the area.
- Regarding bat species, is noted that bat surveys 2020 and 2022 noted high levels of bat activity during the walked transects. No significant loss of commuting foraging or roosting habitat is anticipated. Surveys at height undertaken in 2020 recorded significantly lower levels of activity at night. As such the lack of significant impacts predicted at ground level and the significantly lower levels of activities recorded at height the potential for the aviation lighting to result in any significant effect on bat species can be excluded. Besides aviation lighting on the turbines the only permanent lighting is associated with the substation and will be small scale and rarely used. Construction lighting will be temporary. Mitigation measures include the use of directional lighting to avoid illumination of any ecologically sensitive areas such as woodland edge or forestry habitat. Bord na Mona commit to use of lights during construction in accordance with Dark Sky Ireland Lighting Recommendations. Bord na Mona commit to avoiding long term LED lighting. No potential for the proposed lighting either individually or cumulatively to result in any significant effect of biodiversity during any stage of the project lifetime.

7.5.6 Regarding hydrology and hydrogeology

- The avoidance of watercourses (using buffering) forms a key part of the design iteration process. 50m buffer to natural watercourses except for upgrading of exiting watercourse crossings, new drain crossings and upgrades to existing site access track. Large setback distance from sensitive hydrological features

means that adequate distance is maintained for the proposed drainage mitigation measures to be installed and operate effectively.

- No natural watercourses exist within the site and the local hydrological regime has been altered to facilitate the historic peat extraction activities. A series of field drains discharge to main drains which in turn discharge to settlement ponds around the perimeter of the bog. These settlement ponds attenuate surface water and remove suspended solids prior to discharge at the existing bog outfalls. The existing drainage infrastructure is operating in accordance with IPC licence requirements with environmental monitoring and silt control measures are currently implemented at the site. The existing drainage system will be maintained and expanded locally as required for use within the proposed development drainage system. Water treatment systems will be improved as a result of the development. There will be no untreated discharge of water from the site. Mitigation measures for the protection of surface water during construction operational and decommissioning phases are set out in Sections 9.5.2, 9.5.3 and 9.5.4 of the EIAR. WFD Compliance assessment appended as Appendix 9-3 to the EIAR– concludes that with the implementation of mitigation measures for the protection of surface and groundwater quality and quantity there will be no change in the WFD status of the underlying groundwater bodies or downstream surface waterbodies as a result of the proposed development. The Proposed Development will not prevent these surface water bodies or groundwater bodies from achieving their respective WFD objectives in the future.
- It is proposed to upgrade 2 no existing watercourse crossings. Where site roads and hardstands cross the main bog drains, culverts will be installed with a minimum gradient to reduce the entrainment of suspended solids and also the potential for erosion.
- No fords were mapped at the site and the creation of fords is not proposed, No temporary water crossings are proposed.
- Culvert upgrades are proposed within bog areas but none of the mapped drains within the Ballivor group of bogs have any ecological significance. A

comprehensive drainage plan for construction stage is included in Appendix 4-3 of the EIAR.

- Use of weather forecasts and rainfall thresholds defined within Section 9.5.2.1 of the EIAR will assist in the protection of water quality during construction phase.
- The proposal will comply with the requirements of IFI 2016 Guidelines on Protection of Fisheries during construction works in and adjacent to Waters.
- No instream works of any nature on natural watercourses are proposed.
- Regarding the submission of NPWS with regard to constraining the areas available for rehabilitation as bogland habitats and to perform the function of sequestering carbon in line with the Peatland Climate Action Scheme, it is noted that the proposed development has a total development footprint of c52.17ha therefore the proposal will result in the loss of 52.17ha of cutover peat bog which could potentially have been restored and rehabilitated. The loss is an acceptable consequence of the proposed development. The loss of land is small in comparison with the overall area of the proposed development site.
- The residual bog outside of this 52.17ha is heavily modified cutover raised bog. Whilst it is acknowledged that the drainage proposals associated with the proposed development will further reduce the area available for rehabilitation this area will still be relatively small and will only comprise small areas immediately adjacent to the proposed drainage infrastructure i.e. drains and settlement ponds.
- Rehabilitation plans for the site include significant hydrological improvements. This combination of land use has already been established at other similar sites such as Mount Lucas Wind Farm, Cloncreen Wind Farm, Bruckana Wind Farm and will be further proven at Derrinlough Wind Farm. The carbon saving and sequestration benefits of development of the wind farm along with the rehabilitation of the overall land holding are clearly set out in Chapter 10 of the EIAR.
- Potential effects on drinking water supplies thoroughly assessed in the EIAR. The proposed development will include extraction of dry aggregate (above

water table) and wet aggregate (below water table) at BP2 in close proximity to several dwellings. Wet extraction can be completed without dewatering therefore there is limited potential for water levels effects on any nearby wells. Groundwater quality effects such as increased turbidity is extremely unlikely to transmit through the sand and gravel deposits as those materials are very good natural filters.

- Potential effects from hydrocarbons can be mitigated by the implementation of controls outlined in the EIAR. Blocking of regional groundwater flow paths (by turbine bases and associated piled foundations will not occur. Applicant is happy to monitor local wells within 500m of BP2 during the temporary construction phase.
- Regarding flood risk the flood zones mapped are inaccurate as they are associated with an EPA mapped watercourse which does not exist. Site walkover surveys revealed this error where the survey of the cutover bog in the area is drained with a network of peat drains.
- The detailed FRA noted the location of the site is within flood zone C at low risk of flooding. Substation location indicated negligible risk of flooding subject to minimum floor level of >74.9mOD. No significant alteration is proposed to the existing drainage regime at the proposed site. Regarding setting of finished floor level of essential infrastructure a minimum 500mm above the 1 in 1000-year critical flood level the applicant is happy to comply with a 500mm freeboard requirement.
- The cumulative effect of the proposed development and the Bord na Mona decommissioning and rehabilitation plans in compliance with condition 10 of the IPC licence is that there will be a reduced risk of fluvial flooding downstream of the proposed site.
- Regarding displacement of water by infrastructure, the maximum volume of material to be imported is approximately 717,000m3 and this volume could never replace what has been removed therefore the potential to change flood volumes or flood patterns is negligible.

- Mitigation provides for surface water attenuation to ensure no increase in surface water runoff. The net effect will be a reduction in overall runoff coefficient of the bog.
- WFD Compliance assessment report submitted as appendix 9-3 of the EIAR.

7.5.7 Regarding **shadow flicker.**

- Acknowledge numbering discrepancy in relation to Woodtown House property no 125 (incorrectly labelled 115 in map 5-7) Shadow flicker prediction model demonstrates that property 125 may experience just over 16 minutes of daily shadow flicker just over half the daily recommended limit of 30 minutes per day and may experience over 54 hours of annual shadow flicker which is greater than the recommended 30 annual hours.
- Model does not take account of screening, assumes zero cloud cover, that rotors are facing the property and does not factor window orientation. Significant mature treeline vegetation between the property and the site is noted.
- Regarding Table 5-10 error noted in relation to nearest turbines to H69-H93 should read Turbine 22. (as set out in Table 5-9).
- Regarding set back from dwellings the 2006 Guidelines recommend that shadow flicker at neighboring offices and dwellings within 500m should not exceed 30 hours per year or 30 minutes per day. The draft wind energy guidelines state that no shadow flicker should occur at any property and recommend a 4x tip height set back from turbines for the protection of visual amenity as opposed to shadow flicker and a mandatory set back of 500m. H83, H180 and H205 all meet the 4x tip height setback from the nearest turbine. It is noted that there is considerable vegetative screening and outbuilding and garage screening in relation to T83 and T180.
- Detailed analysis shows approximately 31 properties within 1000m may experience shadow flicker exceedances of more than 30 minutes per day or 30 hours per year as recommended in the 2006 WEGs. Should the zero shadow flicker requirement come into effect the windfarm can be brought in line through

inbuilt technology. (Predicted incidences of shadow flicker can be programmed into SCADA system and provide for shut down of particular turbine to eliminate shadow flicker occurrence.)

- The properties listed as having the potential for shadow flicker exceedances above the 2006 WEG guideline thresholds will be surveyed at the commencement of the operation phase to determine if shadow flicker actually occurs. The surveys will also assess the degree of existing screening and window orientation of each potentially affected property. Shadow flicker prediction data will be used to select days on which a shadow flicker event could be observed at one or multiple of the affected properties. If shadow flicker exceedances occur, screening proposals will be investigated and discussed with residents of each property impacted. If a screening solution cannot be found wind turbine control measures will be implemented using SCADA technology.
- Shadow flicker effect is an indoor phenomenon as changes in light outdoors is dispersed across a vast space thereby minimizing the visual effect.

7.5.8 **Cultural Heritage.**

- Regarding the recommendation that the Board seek advice of an independent World Heritage Expert with specific expertise and experience in assessing world heritage site nominations on behalf of UNESCO to assess whether the development could impact (either alone or in combination with other developments) on any future nominations by the state party to UNESCO for World heritage status using established international best practice it is asserted that no significant impacts are predicted on the landscape of Hill of Tara itself of the designated scenic views from the Hill of Tara.
- Section 13.7.3.2.5 (Page 113-13) of the EIAR LVIA discusses visual effects on receptors in County Meath including the Hill of Tara. Assessment informed by site visit, verified photomontage (VP2) and an assessment in Appendix 13-3 using established best practice methods for LVIA (GLVIA3)

- The Hill of Tara is a sensitive historic landscape with protected panoramic views, hence it is given the highest sensitivity rating in the EIAR LVIA – 'Very high'. The 'magnitude of change was deemed to be negligible for the following reasons:
    - The nearest proposed turbine is set back a distance of 26.1km west of the Hill of Tara. (A greater distance than the standard study area radius recommended for LVIA and wind energy in the 2006 DoEHLG Wind Energy guidelines and draft wind energy guidelines 2019.)
    - The proposed turbines are visible in a location to which wind energy Is directed in local planning policy. Landscape is deemed to be of relatively low sensitivity and highly suitable for the development of wind energy.
    - The proposed turbines are seen as very small features at a distance >26km. In the distant background of view and although there are many turbines the two turbine clusters are well absorbed within an expansive flat plain and they are seen almost at the horizon.
    - The protected views at the Hill of Tara include 360^{o} panoramic views. The proposed turbines collectively comprise approximately 3% (southern and northern clusters collectively comprise an 11^{o} field of view) of the horizontal extent of these expansive panoramic vistas.
    - The proposed turbines are not sited in an area of the landscape that is the specific object of the designated scenic view. They are seen in area of the view which is typical of the flat rural landscape in this area of Ireland. The turbines do not obstruct or interfere with views of any other distinguishable feature of the landscape or any special landscape qualities and key sensitivities.
    - By virtue of the vast setback distance, small portion of the view, positioning in the landscape view and lack of impact on key scenic and special landscape characteristics, or qualities it is considered that the proposed turbines are unlikely to fundamentally detract value from visitor and tourism experiences of the Hill of Tara and heritage monuments within its historic landscape. In mind of all these factors the magnitude of change to the views

was deemed to be ‘negligible’ in the EIAR LVIA. The residual significance of the visual impact was deemed to be ‘slight’ and visual impacts are not deemed to be significant.

- Solar energy developments identified in the updated cumulative map will have no in-combination cumulative landscape and visual interactions with the proposed development from the Hill of Tara.
- Turbines of the proposed Knockanarragh project are likely to be visible in combination with the proposed development from the Hill of Tara. The Knockanarragh turbines would be potentially located approximately 29.5km northwest of the Hill of Tara. The proposed Knockanarragh windfarm would be viewed at a similar scale and form to the proposed Ballivor turbines (slightly to the right northwest within the field of view and there would be some visual separation creating a third turbine cluster. The Knockanarragh turbines would therefore have the potential to contribute to minor cumulative landscape and visual effects, as more turbines will be visible in the background of the view.
- The landscape view is capable of absorbing both developments and will not result in any significant landscape and visual effects.

- Regarding visual and cultural heritage impact on the existing UNESCO World Heritage Site at Brú na Bóinne and Tara Complex (as part of the Royal Sites of Ireland), the Hill of Uisneach and Dun Áilinne, Section 13.4.1 of the EIAR LVIA considered many of the sites mentioned and determined that they are located beyond the LVIA Study Area and at such substantial distances where no significant impacts could potentially occur. The proposed development is at a considerable distance from these sites, beyond the LVIA study area, with the exception of the Tara Complex which was included at a distance of 26.1km. (Brú na Bóinne 37.5km to nearest proposed turbine, Dun Áilinne 46.6km to nearest proposed turbines and Hill of Uisneach 33.2km to nearest proposed turbines. No significant impacts on these sites are likely to occur considering the limited visibility of the proposed turbines at these distances. ‘Slight’ visual impacts will occur at the Tara Complex which is set back 26.1km.

- Regarding Loughcrew and Slieve na Calliagh Hills and potential for negative visual impact on the setting of Loughcrew Megalithic Cemetery contrary to Policy HER Pol 546 of the Meath County Development Plan 2021-2027 it as noted that at Section 13.7.3.1.2 of the EIAR LVIA. The nearest proposed turbines is located approximately 18.7km from Loughcrew and Slieve Na Calliagh Hills. The proposed development will not alter the character, immediate setting and appearance if this landscape conservation area.
- VP11 and VP12 assess views from the landscape and visual receptors at Loughcrew and Slieve na Calliagh. Viewpoint 11 was given a sensitivity rating of ‘very high’. It was captured from the most elevated peak around Loughcrew Megalithic Cemetery and the most sensitive location where sites of cultural heritage are located and there are open views of the proposed development. The residual visual impact is deemed to be ‘moderate; for VP11. The detailed impact assessment of this viewpoint in Appendix 13-3 includes assessment of cumulative effects, stating the photomontage shows open and clear view of the proposed development along with permitted Bracklyn project. All 35 turbines (25 Ballivor and 9 Bracklyn) are visible and are visually indistinguishable as separate projects. The turbines read as one coherent cluster of similar turbine scales and minimal cluttering effects. The vast, open expanse of the view allows for the assimilation of the projects into the landscape.
- Cumulatively the projects read as one windfarm as both the permitted Bracklyn turbines are relatively contiguous to the Bord na Mona land bank and the proposed Ballivor turbines. The proposed Ballivor turbines infill between both projects and add a significant number of additional turbines to that view. In relation to Visual effects from VP11 it is noted that:
    - Siting and design were developed in accordance with the wind energy development guidelines for flat peatland landscape character type and cumulative effects which outline more than one wind energy development might be acceptable in the distant background provided it is only faintly visible under normal atmospheric conditions.
    - Designated scenic view description for V6 is of ‘panoramic views in all directions. And is not directly primarily towards the proposed development.

- Mature tree lines and hedgerows which form the rural landscape patterns are the intended focus of the view in the midground and background, therefore skyline views of the proposed development are restricted. –
- Coherent windfarm layout for both the proposed Ballivor and Bracklyn projects. Spatial extent of turbines in the view is only slightly increased by proposed development.
- By virtue of the vast setback distance, the positioning in the landscape view, and lack of impact on the key scenic and special landscape characteristics or qualities, it is considered that the proposed turbines are unlikely to fundamentally detract from visitor or tourism experience of Loughcrew and heritage monuments within its historic landscape.

- VP12 was captured from a high sensitivity viewpoint on the Slieve na Calliagh Hills to the east of VP11. Residual visual impact for this viewpoint is 'slight.' The detailed impact assessment Appendix 13-3 includes assessment of cumulative effects.
  - Regarding cumulative impact the Knockanarragh proposed development would potentially add turbines to views (VP11 and VP12) and would add to cumulative visual effects. The permitted Hilltown solar farm is located approximately 15km southeast of Loughcrew. Analysis of photomontages (VP11 andVP12) found that due to setback distances, nature of undulating vegetated landscape and ground based nature of solar developments, this development is unlikely to be visible from these landscape and will not contribute to cumulative landscape and visual effects of Loughcrew and Slieve na Calliagh in combination with the proposed turbines and other development.
  - Landscape visual impact assessment and Architectural Heritage assessment utilise different study areas depending on the type and sensitivity of receptors under assessment.
  - Study areas have been determined by reference to best practice guidance as well as professional judgement and experience of the assessment teams. The rationale is clearly set out.

7.5.9 Regarding Noise.

- In relation to the potential for generation of low frequency noise 20-200Hz on noise sensitive receptors, section 11.4.2.1 of the EIAR addresses low frequency noise and infrasound. Neither are typically perceptible at noise sensitive locations in the vicinity of wind farms, nor do they give rise to adverse physiological or psychological effects.
- Regarding noise limits, the 2006 guidelines are the guidelines that must be followed not any draft. As per high court decision in Element Power Ireland Ltd v An Bord Pleanála (2017), nothing in the planning legislation authorises planning authorities to take into account drafts or the prospect of new or modified government or local authority policy or objectives. It is noted that the 2019 draft guidelines were published for consultation and significant concerns expressed by various parties that the document does not outline a best practice approach in terms of the assessment of wind turbine noise.
- The assessment in the EIAR is fully in accordance with latest best practice methods. The submitted noise impact assessment is independent, robust and has been carried out in line with current standards and best practice guidelines (ie Planning and Development Guidelines for Wind Development 2006, ETSU-R-97 and Good Practice Guidelines). Discussion has been provided in relation to matters such as low frequency noise, infrasound and noise related impacts on human health. The submitted EIAR, Noise and Vibration assessment demonstrates that the proposed development can operate within the noise criteria derived from the relevant guidance and accordingly can be provided without significant effect on the amenities of any sensitive receptors.

7.5.10 **Other**

- Aeronautical obstacle warning light scheme to be agreed with IAA.
- Regarding property value, while the presence of a wind farm influencing an individual buyer's opinion on a property is subjective to that individual, on an

empirical level there is no international evidence to indicate that wind farms have impacted the value of properties in areas near wind farms.

- No published scientific evidence to positively link wind turbines with adverse health effects.
- No significant effects on air quality during construction and operation. Noise and Vibration effects addressed in Chapter 11.
- Carbon savings from the proposed development ranges from 6,035,010 tonnes to 8,717,237 tonnes of carbon dioxide over its lifetime
- Telecommunications impact is fully assessed in Chapter 14 of EIAR.
- Employment during construction will amount to 100-120 jobs and 2-3 permanent jobs during operational lifetime and an estimated 20 and 40 jobs during decommissioning.
- Mitigation measures outlined with regard to decommissioning. Turbine components will be suitably repurposed.
- Scoping responses included at Appendix 2.1 of the EIAR.
- Regarding alternatives, chapter 3 of the EIAR set out consideration of reasonable alternatives and includes a comparator assessment with respect to solar farm with the same output range of 117MW to 169MW. To achieve the same energy output from solar energy would require a significantly larger development footprint with a higher potential environmental effect on hydrology and hydrogeology, traffic and transport and biodiversity. A solar farm would require greater peat and spoil generation and may have greater potential to impact on unknown subsurface archaeology. The Capacity factor of Solar PV array technology with a 117Mw to 169MW output would be less than the proposed development therefore resulting in a longer carbon payback period.
- A robust assessment of traffic related impacts during the construction phase of the development is presented in the EIAR.
- Regarding land ownership and title Bord na Mona confirm that they are either the registered owner of the lands or the party entitled to be the registered

owner, pursuant to dealings pending in the property registration authority of Ireland (PRAI).

- Regarding community consultation, Section 2.2.1.7 of the EIAR along with the community report sets out comprehensive consultation and public participation carried out in respect of the proposed development.
- Regarding the issue of substitute consent the applicant awaits a decision on the leave application. [5]
- Regarding the claim of project splitting, neither the Bracklyn Wind farm (ABP 311565) nor the Knockanarragh Windfarm application (314271) are being developed by Bord na Mona and therefore cannot be deemed to comprise project splitting.
- Regarding Strategic Environmental Assessment SEA both county development plans were formulated in accordance with the requirement of the SEA directive. The proposed development aligns with the pertinent policies and consequently is consistent with the requirements of the SEA Directive.
- Volume of CO2 emissions that will escape into the atmosphere will be compensated by the proposed development within 1.17 to 2.37 years of operation contingent on the particular benchmark used for comparison. (Section 10.3.7.2 of EIAR)
- Regarding MCC recommendation 3c a mapping error in Fig 4-2 of the NIS 'Overview Habitat Map" is clarified in Appendix 5 and has the same boundary as application site. Map 4-1 "Article 18 Mapping: Alkaline Fens" is incorrect and differed from the application boundary. Map amended and provided in Appendix 8.[6]
- Regarding an overlap of an area mapped as both bog woodland (WN7) and Article 17 Alkaline Fen (7230), habitat mapping was undertaken by Bord na Mona Ecologists between 2011 and 2021 and ground truthed by additional

[5] Note 311646-21 leave to apply for substitute application was withdrawn on 15/1/2024 following commencement of amending legislation in the Planning and Development, Maritime and Valuation (Amendment) Act 2022.

[6] Typo refers to Appendix 4 in error.

MKO surveys in 2020, 2021 and 2022 as well as a review of satellite imagery. Whilst noting that the area in question is mapped as Alkaline Fen (7239) as per Article 17 mapping, in truth this area is dominated by Bog Woodland (WN7) and has been mapped as such by both Bord na Mona and MKO ecologists.

- Regarding recommendation 3d Draft Cutaway Bog Rehabilitation and Decommissioning plans 2022 draft rehabilitation plan is included as Appendix 6-6 of the EIAR. These plans will be implemented following completion and decommissioning works at Ballivor Bog Group.
- The aim of the rehabilitation plan is to stabilise and rehabilitate the peatland habitats within the site and it is proposed that natural recolonisation will form the basis for the environmental stabilisation of these areas. Under this approach, it is anticipated that considerable areas of peatland habitats within the vicinity of the proposed development will re-vegetate with cutover bog habitats including birch dominated scrub and woodland over time in the past in areas where peat cutting has cased for some time.
- Regarding Borrow pits a typo on planning drawings in regard to borrow pit numbering convention. It is clarified that the correct borrow pit references are 1a, 1b and 2.
- Regarding public amenity paths and location of amenity signage, 28km of internal windfarm roads are proposed with an additional 3.3km of pathways added to create looped walks or linkage to external public roads. Locations and content of amenity signage to be developed post consent with local community input. At minimum signage will be located at each car park and adjacent to family house in the south of Bracklin Bog. Updated amenity map depicting indicative amenity signage locations is provided in Appendix 5.
- Regarding clarification on electricity compound, it is noted that the footprint of the substation measures approximately 11,600m^2. One camera will be mounted on lighting column located inside the IPP entrance gates to monitor access as depicted on Drawing 191137-64 of the planning pack.
- Regarding airstrip at Lisclogher West in Co Westmeath, this strip is leased by Bord na Mona to a local Model Aeroplane Group. The group has been liaised

with as part of the design of the proposed development and there will be no impact to their activities.

- Regarding setback from watercourses all areas are located significantly away from the delineated 50m watercourse buffer zones except for the upgrading of the existing watercourse crossings new drain crossings and upgrades to existing site access tracks. Works will not hinder any further maintenance works to be completed by the OPW.
- Regarding monitoring of wells within 500m of borrow pit no 2 and applicant being responsible for any remedial actions, it is reiterated that wet extraction can be completed without dewatering therefore there is limited potential for water level effects on nearby wells. Groundwater quality effects such as increased turbidity is extremely unlikely to transmit through sand and gravel deposits. Notwithstanding this the applicant is happy to complete groundwater monitoring on all wells <500m of BP2 (subject to consent) to demonstrate that the development is not having adverse effects on local private water supplies. In the unlikely event that impacts are detected applicant will complete remedial actions.

7.5.11 Cumulative Assessment

- Cumulative impact assessment identified the likely significant effects of the proposed development when considered cumulatively and in combination with relevant permitted proposed and constructed project within the site boundary and vicinity.
- Regarding Recommendation 1 of Meath County Council with regard to cumulative impacts on Archaeological, Architectural, Cultural Heritage, Landscape, within the EIAR and the NIS the primary focus is on other wind energy developments. There is no potential for significant cumulative landscape and visual effects with regard solar developments.
- A search conducted focusing on solar developments within 25km study area is mapped on figure 3.2.1.1-1 as follows:
    - No operational solar farms within the study area.

- 1 permitted Friarspark (under construction SW of Trim (c13.7km east of nearest turbine)
- 8 permitted solar developments. Nearest (Hilltown Solar Farm) located approximately 8km north-east of nearest proposed turbine.
- No further proposed solar farm developments within the study area.

- Given the set back distance, nature of visibility and likelihood of limited intervisibility indicated by ZTV it is highly unlikely that any significant cumulative landscape and visual effects will arise from receptors in low lying areas of the LVIA study area.
- Cumulative landscape and visual effects are only likely to be experienced from very elevated vantage points. Solar energy is only potentially visible in combination with the proposed turbines in seven of the photomontages included in Appendix 13-4 (VP2 VP11 VP12 VP13 VP14 VP15 and VP19).
- Only one viewpoint VP19 (from elevated ramparts of Trim Castle) was identified as having the potential for any cumulative in combination visual effects with solar farms. On further analysis cumulative effect will not occur due to the surface level nature of the solar development and dense screening from mature tree lines forming boundaries of the 6 no fields located between the solar farm and urban fringe of Trim Town.
- Regarding the proposed Knockanarragh 8 turbine Windfarm, (Pre App 314271) this is approximately 6km north of the nearest Ballivor proposed turbine. The N51 between both developments will have intermittent views. Minor cumulative visual impacts may potentially occur during a journey scenario where the proposed Knocknarragh turbines are seen from elevated vantage points along the route which permit open views in a northerly direction. Due to set back distances in multidirectional in combination visual effects are less likely due to the nature of views along the route.
- In combination views from long ranging elevated vantage points are assessed and it is acknowledged that they may potentially contribute with the proposed development to the build up of wind energy visible in the landscape and some minor cumulative visual effects would potentially arise. Set back distances from

these elevated vantage points are substantial and the long ranging expansive landscape views are capable of absorbing these distant developments.

- Following cumulative assessment in relation to solar developments and Knockanarragh Wind farm no change arises in relation to conclusions on the submitted NIS.
- Significant cumulative or in combination effects on key ornithological receptors with regard to direct habitat loss displacement or collision mortality are not anticipated.

7.6 Submissions from Observers in response to circulation of first party response.

7.6.1 A number of the third parties responded to the first party response submission expressing general dissatisfaction with the responses and maintaining strong opposition to the proposed development. Thereafter is a summary of the matters raised in the various responses which, for the avoidance of undue repetition, I have amalgamated and summarised below:

- Concern remains regarding intervisibility between Hill of Uisneach and Royal Site of Tara. By virtue of these sites' significance on the tentative World Heritage site list, reference to UNESCO guidance and toolkit for assessment is a necessity. The correlation between the Hill of Uisneach and Tara, (symbolised in the practice of lighting fires at Bealtaine) is the main criteria for selection for world heritage status.
- The Draft guidelines 2019 note the significance of intervisibility and interrelationship between archaeological heritage in the wider landscape including cross border intervisibility. Proposed turbines will dominate the landscape within which both Royal sites are situated interfering with both intervisibility and interrelationship. Applicant fails to address the 360^{o} panoramic view from the summit of Uisneach classified as having national importance in the Westmeath County Development Plan.
- Concern relating to easement rights and unclear access route at Lisclogher. In June 2023 Bord na Mona applied to the land registry for registration of a right of Way over lands under Dealing No D2023LR087656D to which objection has been made. Folio WH2771F refers. No consent has been sought.

- Applicants claim they are either registered owner or the party entitled to be the registered owner pursuant to dealings pending in the property registration. Michael and Elizabeth McKeown are legal registered owners of property MH5079F.
- Several of the properties within the proposed footprint are currently subject of legal proceedings where the legal owner has contested Bord na Mona's claim for adverse possession. 31 folios listed as illustrative examples. Bord na Mona should be required to clarify in a map and associated table the areas within the delineated redline boundary for which it is not the legal owner at the time of application and amend planning application accordingly.
- No meaningful response to health impacts. Autism and related conditions.
- Broadband and telecommunications impacts.
- Regarding property values UK report referenced is dated 2014 and is project specific. No property expert or economics experience in cohort of EIAR authors.
- A number of noted errors in regard to analysis of shadow flicker at property no 125 combined with mislabeling of dwelling, omission of ZTV mapping, and reference to figures 3.2.1.1. and 3.2.1.2 (not included in the document) diminishes confidence in terms of accuracy of analysis and reporting.
- Maximum shadow flicker for property as per table 5.9 is 32 minutes 24 seconds which is above the stated daily limit of 30 minutes. Woodtown House faces due west with 12 large windows directly oriented towards proposed development. There are few trees in the intervening land therefore no screening effect. Photo appended from roof window on bedroom floor shows view towards turbines. As the house is on highest point of the property screening by trees will have no significant mitigating effect with regard to shadow flicker and noise as the trees are mostly low level and typically below bedroom levels.
- Visual impact cannot be mitigated due to sheer scale of the development. This is not a sparsely populated area and the cumulative impact with Bracklyn Turbines is significant. Page 45 of 2006 wind energy guidelines refer to achievement of visual balance and not visually dominance in a landscape of relatively small scale.
- Significant negative impact on flora and fauna.

- Significant construction disruption and emissions.
- Response with regard to traffic inadequate. Failure to address community concerns.
- Carbon emissions, mining of finite metals, steel production transportation, tree felling, excavation of bogs, carbon sink.
- Noting the OPW submission the Hill of Ward viewpoint has not been adequately addressed. Screening mitigation proposed is not physically accurate and in any case is not a sustainable solution. Ash tree coverage is vulnerable.
- Failure to address OPW recommendation with regard to World Heritage Impact Assessment toolkits in respect of Tara, Slieve na Calliagh and Hill of Uisneach.
- Request the Board to consider the visual impact of a cumulative 35 turbine windfarm plus anemometers. Ref ABP09PA0041 Maighne Windfarm.
- Cloncreena and Concant windfarms both located within 25km of the proposed development are not referenced in assessment. Yellow river windfarm under construction.
- Concerns remain regarding impact on biodiversity. EIAR highly subjective. Impact on Stoneyford River and River Deel and impact on Boyne River SAC and SPA. (ABP-09-PA0041). Badger setts require further assessment.
- Loss of ancient woodland habitat on southern edge of Ballivor Bog close to T8 unacceptable.
- Regarding distance to dwellings, the 2019 draft guidelines require a setback distance for visual amenity purposes of 4 times the tip height between the turbine and nearest point of curtilage of a residential property. A number of examples of less than 800m T3 versus House 180, T14 versus House 83, T7 also within 800m of nearest dwelling.
- Regarding reasonable alternatives applicant fails to consider such as off shore wind, solar and biomass. The “do nothing” alternative of carbon sequestration through rewetting and rewilding must be considered in a serious slight. Lough Boora a leading example of alternative approach.
- Regarding Narrow Gauge railway (protected structure RPS 021/008 NIS 1540102) and Woodtown House Protected structure within 850m and Lisclogher Bridge (RPS 014-022) not included nor archaeological consideration of Cloneycavan man.

- Questions remains regarding compliance with SEA Directive 2001/42/EC.
- Response by Jesmond Harding (butterfly expert) on behalf of DRB Community Company Limited.
    - Welcomes the correction that the multidisciplinary walkover survey, during which adult marsh fritillary were identified, was carried out on 26 May 2020 rather than April 2020.
    - The zones of influence for the Marsh Fritillary (zone within which potential effects are anticipated) differ according to the site characteristics such as the topography of the surrounding landscape, including levels of exposure to wind and sunlight, the soil moisture levels and whether these characteristics will be changed by development such as tree and scrub removal or development, the excavation of soil near a habitat and the erection of structures that have a shading effect or require drainage.
    - It is of concern that the time constrained surveys carried out in May 2023 on behalf of DRB community CLG identified habitat for the Marsh Fritillary not identified in previous surveys and that 490 square metres of potential habitat is within the proposed development footprint. The finding of only three larval nests on 22 August 2023 between T13 and T14 raises questions about the survey as May and June 2023 were mainly dry with above average sunshine and temperatures in both months. June 2023 was the warmest June on record. These weather conditions favoured early adult emergence and breeding and accelerated development was noted with the first larval nest nationally recorded by Jesmond Harding on a bog site in County Kildare on 29 June 2023. This date was over 3 weeks earlier than the previous earliest known date for the appearance of a larval nest on the site.
    - The development of Marsh Fritillary larvae is reliant on warmth with direct sunlight in spring especially critical. Noting the potential suitable habitat between T13 and T14 it is outlined that the timing of larval web surveys in summer and autumn must consider prevailing weather conditions during and following adult flight period and site characteristics. When these circumstances favour rapid development, larvae enter their overwintering diapause earlier than on cooler wetter sites in cooler years. 2023 was the

warmest year on record. Examining the photographs of the larvae included in the report, these are in the third instar. This is the final instar before overwintering stages is reached. Synchronous development is not a marked feature of this species across a population - larvae shown in the report could be later developing larvae from eggs laid later during the flight period. When the diapause phase is reached the larvae disappear until spring forming dense hibernaculum webs out of sight beneath vegetation. It is possible that larval webs were missed owing to survey timing. The extent and quality of the habitat and the recording of 18 adults on site 1 on 29th May 2023 suggests that a figure greater than three larval webs with a wider spatial distribution can be expected. In this regard, it is suggested that a survey for Marsh Fritillary nests be repeated in March and April 2024. At a minimum this survey needs to be carried out on Site 1 and for c300m southwards along the railway bank and c300m south of the proposed location of T13.

- Regarding the loss of 0.049ha of potential suitable habitat for marsh fritillary and claim that this will not be significant as suitable habitat is abundant it is outlined that based on proximity to third larval web found in August 2023 and based on timing and weather conditions May-August 2023 this is likely breeding habitat rather than potential breeding habitat. The characterization of the loss of habitat as ‘slight in nature’ is disputed. The Marsh Fritillary often breeds in discrete areas of a site containing suitable and potentially suitable habitat for reasons that are not evident. Removal of part of this habitat might remove the population. The statement that ‘suitable habitat is abundant in the wider landscape’ does not appear to be supported by any of the surveys on behalf of the applicant and is not supported by surveys carried out on behalf of DRB CLG.
- Most areas of cutover bog contain vegetation characteristic of acid soils and is unsuitable for Devil’s-bit scabious. The farmland adjoining the bog is mostly intensively managed with evidence of fertilizer and herbicide application resulting in improved grassland for livestock grazing and silage containing no habitat for marsh fritillary. The project proposal to promote further areas of suitable habitat within the development site rather than avoid impacts to established habitat is deemed inappropriate. Sequencing is

also concerning. If work destroys habitat before potential compensating habitat develops it is likely there will be no remaining Marsh Fritillary population to occupy new habitat. The development site is extensive and design should be applied to avoid any loss of habitat.

- Mitigation does not address the changes to habitat that will occur when the road is constructed and cabling from proposed T13 and T14 is installed. It is likely that the drainage applied in advance of cable installation will reduce soil moisture stressing the shallow rooted foodplant of the marsh fritillary during extended dry weather which will impact food quality. This can result in starvation of larvae. Warmer drier summers expected will increase danger of population loss. It should be noted that the breeding habitat in much of the proposed development site is on elevated ground and additional drainage will increase stress on the habitat.
- Regarding proposals for peat stabilisation and pollinator enhancement measures, the use of imported seed mixes should be avoided. Natural colonization should be used taking precautionary measures against alien invasive species. Any 'green hay' should be obtained from a native donor as close to the bog as possible to ensure native provenance. The grassland along the railway which might be used as a source of green hay should be cut at no lower than 100mm setting except the areas immediately adjoining the tracks with cutting apart from this area restricted to October-January to avoid unnecessary damage to the high-quality grassland area.
- Report concludes that the applicant's impact assessment on Ireland's only legally protected insect (Marsh Fritillary) is insufficient. The available evidence suggests habitat elimination specifically in the areas of planned turbines 13 and 14 and the potential for drying out of the remaining habitat. Construction associated with any aspect of the windfarm must be avoided to assure habitat protection and the development of habitat that will occur naturally if nothing is done. The areas where no breeding habitat will develop should be re-wet under the PCAS scheme. The enhanced rehabilitation scheme will deliver benefits across climate action by optimising carbon storage potential within the residual peat, reducing

greenhouse gas emissions and accelerating the development of carbon sequestration by promoting the development of sphagnum rich vegetation (peat forming mosses) where possible. This will also enrich the states natural capital increase eco-system services, strengthen biodiversity, improve water quality and storage attenuation as well as enabling the amenity potential of the peatlands.

- As a public authority within the meaning of the European Communities (Birds and Natural Habitats) Regulations 2011 to 2021 Bord na Móna must 'strive to avoid pollution or deterioration of habitats'. Bord na Mona has responsibilities under the Wildlife Amendment Act 2023 and the National Biodiversity Action Plan 2023-3040 prepared by the National Parks and Wildlife Service in which Bord na Móna is listed as a state body with a role in biodiversity conservation. Ireland has lost 30% of its semi natural grasslands in the past decade and more than half of the Country's native plants are in decline. (4th National Biodiversity Action Plan 2023-2030). Further loss and the risk of further loss described in the documentation submitted for the proposed project is unnecessary and unacceptable."

- Application is premature pending long awaited guidelines for utility scale wind installations and pending full national led SEA assessment of utility scale installations and loss of finite agricultural land and natural habitat. Also, premature pending resolution of substitute consent issues.
- Impact on Lough Owel SPA, Garriskil Bog SPA.
- Fire hazard has not been adequately addressed.
- Congestion on R156 with 2 large quarries and products operating from Trammon c15km away. – Not assessed.
- Red listed species identified on or near the site need further evaluation including woodcock, snipe, lapwing, kestrel, golden plover.
- Failure to consider the alternative of deep bore geothermal energy.
- Many aspects of previous refusals (references cited) by the Board applicable in the current case.

- Notable discrepancies within the documentation eg. reference to golden plover surveys at 2.1.5 it states there were no golden plover observed during surveys but on review Appendix 1 Table 2 VP survey observations show golden plover observed on multiple dates over 2022-23 season.

7.7 Submissions from prescribed bodies in response to circulation of first party response

7.7.1 Submissions from the following prescribed bodies and summary of issues raised thereafter

- Transport Infrastructure Ireland

- Department of Housing Local Government and Heritage.

7.7.2 **Transport Infrastructure Ireland** TII note that the response of the applicant does not appear to address original TII submission which remains the position - summarised as follows:

- It remains a requirement that any operator who wants to transport a vehicle or load whose weight falls outside the limits allowed by the Road Traffic (Construction Equipment and Use of Vehicles) Regulations 2003 SI 5 of 2003 must obtain a permit for its movement from each local authority through whose jurisdiction the vehicle shall travel.
- The applicant shall consult with all Public Private Partnership (PPP) companies, Motorway Maintenance and Renewal Contracts MMaRC Contractors and Local Road Authorities over which the haul route traverses to ascertain any operational requirements such as delivery timetabling etc. and to ensure that the strategic function of the national road networks is maintained.
- Where temporary works within any MMaRC Contract Boundary are required to facilitate the transport of turbine components or construction traffic to site, the applicant / developer shall contact third party works @ti.ie in advanced as a works specific deed of indemnity will needed by TII before works take place.
- Any proposed works to the national road network including signage to facilitate turbine component delivery to site shall comply with TII publications and shall be

subject to road safety audit as appropriate. Works shall ensure ongoing safety for all road users and prior to any development necessary licenses approvals or agreements with PPP concessions motorway maintenance and renewal contracts (MMaRC) Companies and local authorities as necessary shall be in place.

- TII request referrals of all proposals agreed between the roads authority PPP concessions and MMaRC companies and the applicant impacting on national roads.
- Mitigation measures to be included as conditions of any grant of permission.
- Any damage caused to the pavement of the existing national road due to turning movements of abnormal ‘length; loads (e.g. tearing of surface course) shall be rectified in accordance with TII pavement Standards and details in this regard shall be agreed with the road authority prior to commencement of development.
- In relation to greenway proposals in the vicinity of the proposed works consultation with Meath and Westmeath County Councils own internal project and or staff is recommended.
- TII recommends resolution of these matters in advance of any decision.

7.7.3 Department of Housing Local Government and Heritage.

Regarding Heritage.

- Department is broadly in agreement with findings of EIAR in relation to Archaeology and Cultural Heritage.
- It is noted that the applicant has provided further information including clarification of matters pertaining to the assessment if indirect impacts to the setting of certain national monuments and sites subject to preservation orders within 10km of the proposed development and the assessment of cumulative impacts to certain national monuments and sites subject to preservation orders within 10km of the proposed development.
- Department recommends that as a condition of any permission. (Conditions align with sample conditions C3, C5 and C6 as set out in OPR Practice Note PN03: Planning Conditions (October 2022) with appropriate site-specific additions

/adaptions based on the particular characteristics of the development and informed by the findings of the EIAR.

1. All mitigation measures in relation to archaeology and cultural heritage as set out in Chapter 12 of the EIAR and in response to observations received shall be implemented in full, except as may otherwise be required in order to comply with the conditions of this order.
2. The CEMP shall include the location of any and all archaeological or cultural heritage constraints relevant to the proposed development as set out in Chapter 12 of the EIAR. The response to observations received and by any subsequent archaeological investigation associated with the project. The CEMP shall clearly describe all identified likely archaeological impacts both direct and indirect and all mitigation measures to be employed to protect the archaeological or cultural heritage environment during all phases of site preparation and construction activity.
3. The Planning Authority and the Department shall be furnished with a final archaeological report describing the results of all archaeological monitoring and any archaeological investigative work / excavation required, following the completion of all archaeological work on site and any necessary post excavation specialist analysis. All resulting and associated archaeological costs shall be borne by the developer.

Regarding Nature Conservation.

Regarding the loss of 0.26 ha of Oak ash hazel woodland growing on a mineral soil island in the bog to excavate a borrow pit for material to construct the road network, the Department does not accept the establishment of a new tree plantation, even if composed of native species, would compensate in less than a century and possibly never for the loss of an area of spontaneous native Oak Ash Hazel woodland growing on a bog island, which are characteristically sites of high biodiversity for ground flora, fungi and invertebrates as well as tree species. Such other elements of locally occurring biota may eventually colonise a new tree plantation, but this process will only take place over a considerable time frame. In order to preserve woodland biodiversity any planning permission should include as a condition that the area of oak

ash hazel woodland on mineral soil on the development site it is proposed to remove for borrow pit should be retained. Its boundary with the borrow pit to be agreed with the planning authority before development commences.

The Department welcomes proposal that a pre-construction badger survey of the proposed development footprint and adjacent areas to include the use of camera traps. The department recommends that this pre-construction survey following best practice should be carried out during winter when vegetation which might conceal setts and other evidence of the presence of badgers will be at its lowest.

- In relation to Ornithology and the Department's recommendation regarding radar surveys, while the Department accepts the evaluation set out in the applicant's response, based on the survey work already carried out, that it is unlikely because of their identified commuting routes Whooper Swans frequenting roost sites in the general vicinity of the proposed wind farm site would be significantly affected by collisions with wind turbines, it is still not clear to the Department that the risk to birds on migration of being involved in collisions with the proposed wind farm in its operational phase has been fully evaluated by the applicant. Relevant to assessment of the risk of migrant collisions is the information recently received by the NPWS concerning records of electronically tagged Greenland White Fronted Geese passing near the proposed wind farm during migrations from their most important wintering sites in Ireland on the Wexford slobs and their summering areas in Greenland. Research undertaken by the University of Saskatoon[7] involved tracking individual Greenland White Fronted Geese from their winter feeding grounds in Wexford. Those undertaking the research indicated to NPWS that some of the tagged birds came within 8km of the proposed development site near Ballivor with a smaller number flying within a 6km buffer zone around the development, possibly flying through the development footprint itself. It is essential that the assessment be revised to take account of this data and to determine objectively if the proposed development will have negative impacts on this species. In light of these records of White Fronted Goose migratory movements in the vicinity of the development site the Department recommends that the applicant be requested to submit as Clarification of FI a more thorough analysis, based if possible on additional survey using radar or other

[7] University of Saskatchewan, Canada.

techniques of the potential of night migrants and especially Greenland white fronted geese colliding with wind turbines and how the possibility of such collisions might be reduced.

7.8 Submission from Meath County Council in response to circulation of applicant's response to observations.

- Regarding The Tower House at Causetown, note response to this site is a duplication of the response regarding Hill of Ward.
- Meath County Council's Archaeologist and DAU request for advance archaeological testing.
- Regarding visual impact conclusions are not qualified and assume that worst case scenario will not occur. Applicant must address the impact of the development on the quality experience and setting of a heritage monument.
- Regarding Marsh Fritillary Management Plan ABP invited to condition the implementation of measures during operational phase.
- Condition recommended that no batching or storing of cement within 50m of any watercourse crossing.
- As some bird species are attracted to artificial lighting additional mitigation proposed (p29 of response) should be included as a condition, noting that lighting proposals are subject to Dept of Defense, IAA approval.
- On page 34 there is reference to the total footprint of the development comprising 52.17ha (2.9%) of the site and associated loss of this amount of cutover peat. The application refers to a permanent footprint of 32.4ha or 1.83% of the site.
- Regarding shadow flicker it is noted that applicant relies on post-planning mitigation so it is difficult to determine if measures will work. Level of cost needs to be ring fenced to ensure delivery.
- Conditions from Department of Defense and Irish Aviation Authority. IAA.
- Condition 4 recommended in Meath County Council's previous submission regarding decommissioning and retention of amenity tracks and associated car parking following the 30 year permission. Decommissioning plan to be agreed with the Planning

Authority prior to commencement of decommissioning in accordance with current best practice methods.

- Regarding cumulative landscape and visual effects noting updated cumulative map which shows 7 no solar farms potentially visible in combination with the proposed turbines. It was determined that only one viewpoint (VP19) has the potential for any cumulative in-combination effects with solar farms due to the distances to and views available from these locations. Friarspark Solar Farm is identified however it is stated that it would not be visible due to screening from mature woodland along 6 no field boundaries in the intervening landscape between the solar farm and urban fringe of Trim. (p73) Other locations were not addressed in the applicant's response.
- The concerns regarding cumulative impacts on Archaeological Architectural Cultural Heritage landscape in Co Meath EIAR and NIS as set out in the initial submission of Meath County Council remain. Given the international status of the Hill of Tara Meath County Council request that the Board obtain the independent advice of a World Heritage Expert with regard to the current proposal and the Knockanarragh proposal.
- Regarding withdrawal of substitute consent application, it is noted that the EIAR refers to subsequent substitute consent application being accompanied by an EIAR AASR and NIS which would assess the impacts of historical peat extraction activities on biodiversity and designated sites.
- MCC queries issue of safe routes though the site and amenity signage details to be agreed.

7.9 Further information request.

7.9.1 On 14th May 2024, An Bord Pleanála issued as request for additional information in accordance with Section 37(F)(1) of the Planning and Development Act 2000, as amended in relation to the effects on the environment of the proposed development, as follows:

" Collision Risk *- Having regard to the submitted EIAR and supporting information with regard to Ornithology and noting submissions received from the Department of Housing Local Government and Heritage, (NPWS), in relation to information received by the*

NPWS of records of electronically tagged Greenland White Fronted Geese passing near the proposed wind farm site during migrations from their most important wintering sites in Ireland on the Wexford slobs and their summering areas in Greenland, the Board notes the request of the Department for a more thorough analysis, based on additional survey using radar or other techniques of the potential for night migrants especially Greenland white fronted geese colliding with wind farm turbines and details of mitigation to ensure that the possibility of such collisions might be reduced. You are invited to respond to this submission.

Marsh Fritillary Butterfly Annex II Species - Key Ecological Receptor.

Regarding Marsh Fritillary Butterfly, Annex II listed species, (Categorised as inadequate status in Department of Culture Heritage and Gaeltacht. The Status of EU Protected Habitats and Species in Ireland, 2019) and noting the submissions to the Board of Mr Jesmond Harding, Butterfly Expert, on behalf of DRB Community Company Limited and the subsequent inclusion of the Marsh Fritillary as a Key Ecological Receptor, the Board notes concerns raised with regard to the 490sq.m categorised by you as "potential habitat" located within the proposed development footprint (T13 -T14) and the issues raised with regard to the timing and time constrained nature of the survey and potential for wider spatial distribution and quantity of the species. The classification of this area as "potential breeding habitat" rather than "likely breeding habitat" and the characterisation of its loss as "slight in nature" has been disputed and concerns raised that removal of part of this habitat might remove the population. It is further submitted that no evidence is provided that 'suitable habitat is abundant in the wider landscape' and the issue of sequencing is also raised. It has been suggested that the design should be applied to avoid any loss of Marsh Fritillary habitat and mitigate potential for drying out of habitat. You are invited to respond to this submission.

ZTV Mapping

The applicant is advised to note that the ZTV mapping colour banding error evident on the initial half blade ZTV map Fig 13-1 (digital and hard copy), a digital malfunction as referenced by you in the response to the observations, is also evident within the digital copy of further information on the standalone website - Response to Observations Received (ballivorwindfarmplanning.ie) at Fig 5 and Fig 13.1, though the

colour banding is present on the hard copy documents submitted to the Board. It is acknowledged that the colour banding is evident (digital and hard copy) on several of the other mapping figures included within the EIAR including the LVIA baseline map Fig 13-5, and landscape character areas Fig 13-11."

7.9.2 Response to Further Information Request

A response to further information request was received on 12th July which addresses the issues in turn and is summarised as follows:

With regard to Ornithology.

Response by Principal ornithologist at MKO Padraig Cregg the following is noted:

Regarding **collision risk** for migrating Greenland white fronted geese review of the flight activity of satellite tagged Greenland white fronted geese referenced by NPWS, associated with 2024 Paper, University of Saskatoon[8] provides the following key information :

- In all eight geese flew within 20km of the proposed development including migratory birds and one wintering bird.
- Two instances where geese flew within 6km of the proposed development and may have crossed the site.
- All twenty of the GPS points from satellite tagged geese were recorded to be flying at altitudes between 216m and 2,235m above sea level. The accompanying flight lines of the tagged geese were also provided by Shindler et al (2024) Fig 1.
- The two geese that flew within 6km of the proposed development were flying at altitudes between 1,606m and 2,210m above sea level.
- Caution should be applied when considering altitude data. (Altimiters on species were not specifically calibrated before use)

[8] Shindler, AR. Fox AD, Wikle CK, Ballard BM, Walsh AK, Kelly SBA, Cao L, Griffin LR, Weegman MD 2024. "Energetic trade-offs in migration decision-making, reproductive effort and subsequent parental care in a long-distance migratory bird. Proc. R Soc. B291:20232016. https://doi.org/10.1098/rspb.2023.2016

- When within 20km of the proposed development eight of the twenty GPS points from satellite tagged geese were recorded to be flying between sunset and sunrise (i.e. 40% of flights were at night).

Following review of the information it is submitted that the balance of evidence strongly suggests that migratory Greenland white fronted geese flying between the Wexford slobs and Iceland are not at significant collision risk from the proposed development. The rationale for this statement is as follows:

- Based on the information provided from the peer reviewed paper by University of Saskatoon, no significant collision risk is likely given the altitude at which the geese were flying. The geese were flying nearly ten times the height of the proposed turbines (Ie 1,606m, 2,210m or 2,235m). The flight height information was only provided in a range for six of the eight geese that flew within 20km of the proposed development. The flight height for the other two migratory geese within 6km was provided (1,606m and 2,210m respectively), it seems likely the lower end of the range was the Lough Iron bird undertaking the short distance flight and the higher end of the range must relate to another individual as it is a higher value than the geese that flew within 6km of the proposed development.
- In all only one of the eight geese that flew within 20km was a wintering bird (ie not migrating). This was the goose from Lough Iron and likely to be the flight at 216m.
- From evidence of surveys – it is notable that during the comprehensive suite of surveys undertaken at the site between April 2020 and March 2023 which included ornithological surveys on or near the site c25days a month during the migratory season (Sept/October and Late March/April). A reasonable explanation for how geese could have flown above the proposed development but were not seen would be if they were migrating at high altitudes, as indicated by the data provided by NPWS. The height is approximately ten times the proposed turbine height. Key focus of flight activity survey (Vantage Point surveys) is to record flight activity at the height where a collision is possible. If birds were flying at lower elevations, they would have been observed as NPWS data shows majority (60%) of migrating geese were flying during the day.

- A review of literature shows that many species of birds including water birds like swans and geese fly at high altitudes when migrating. When on migration Greenland white fronted geese have previously been recorded to fly at altitudes >2,500m when crossing the 2500m Greenland Ice Cap (Fox et al 2003)[9]
- While caution was recommended when considering altitude data as provided by NPWS, it is reasonable to assume that even following this application of caution the geese are still not at risk of a collision (i.e. given the high altitude of flights and the related considerable margin of error) particularly so as the evidence of surveys and a literature review corroborate the output of altimeters.
- While the altitude of flight is a key factor limiting potential for impacts, a further consideration is the number of migratory geese that are likely to migrate above the proposed development. Only a small proportion of the satellite tagged geese have flight paths that crossed the proposed development. For this to be meaningful information, this data would need to be representative of the wider Wexford Slobs population. The University of Saskatoon study aimed to tag a representative sample of the Wexford slobs population as this would facilitate a meaningful study of the migratory routes taken by the population rather than just the individuals involved. A similar satellite tracking study in late 90s tagged geese from the Wexford slobs showed that a majority of tracked Greenland white fronted geese flew directly to staging areas in Iceland (Fox et al 2003) [10] with only a small proportion of the tagged geese coming close to the proposed development area. On departing Wexford slobs a majority of the geese flew directly to Iceland, while others staged (stopped briefly) in Lough Foyle Northern Ireland. This is not surprising as there is no particular landscape feature on or near the site likely to attract the geese to the proposed development area. The relative width of the turbine envelope limits the potential for migratory geese to collide with a turbine. The width of proposed turbine envelope (outermost blade tip to outermost blade tip) is small (c5km) relative to the total width of the migration corridor taken by the Greenland white fronted

[9] Fox A.D., Glahder C.C and Walsh A.J. 2003. Spring Migration routes and timing of Greenland white fronted geese – results from satellite telemetry. – Oikos 103:415-425.
[10] Fox A. D. Glahder C.M and Walsh, A.J. 2003. Spring migration routes and timing of Greenland white fronted geese- results from satellite telemetry. – Oikos 103: 412-425

geese migrating between the Wexford slobs and south west Iceland at the latitude of the proposed development, as outlined in Figure 1. (Shindler et al 2024)

- Regarding radar. The provision of radar data of relevance is not possible within the timeframe for response to further information request. In any case the use of automated sensing techniques such as radar is not well suited to surveying migratory Greenland white fronted geese as outlined in section 2.1.4 of response to observations received document.
- It is submitted that the balance of evidence leaves little doubt that migratory Greenland white fronted geese flying between Wexford slobs and Iceland are not at significant collision risk from the proposed development. Notwithstanding this, a comprehensive suite of commencement /pre-construction and operational phase monitoring is proposed in Appendix 7-7 of the EIAR. The proposed monitoring programme is not proposed in response to any identified significant effect but rather as a best practice measure (SNH 2009). The monitoring is comprehensive and considered entirely adequate in this regard. Monitoring results will be reported to the Planning Authority following each monitoring year and will include recommendations that may inform additional mitigation or adaption if required.
- Adaptive management is an iterative process whereby the results of previous monitoring are analysed to inform future monitoring or mitigation as relevant. As the bird monitoring programme is considered entirely adequate as currently submitted, no change will be proposed unless there is a significant change in the use of the site by the local avian community. Similarly, no requirement for additional mitigation is anticipated. However, if following monitoring, bird usage on the site changes and the potential for negative effect is identified, adaptive mitigation will be employed to avoid any potential for significant effects on avian receptors.
- It is concluded that the information provided before An Bord Pleanála is adequate and no deficiencies in information remain. It has been demonstrated that the proposed development site will not significantly impact migratory Greenland white fronted geese flying between the Wexford Slobs and Iceland.

Regarding Marsh Fritillary.

- Noting submissions received highlighting concerns relating to the extent and timing of targeted marsh fritillary surveys, additional surveys throughout the life cycle of marsh fritillary were undertaken in order to obtain additional data on the presence and use of the proposed site by marsh fritillary. Additional surveys 22 August 2023, 24 April 2024 and 6 June 2024. The surveys focused on suitable marsh fritillary habitat within the proposed Ballivor wind farm development footprint and coincide with i) the autumn larval web stage, ii) the late instar larval stage (spring) and iii) the adult flight / egg laying season (summer) for marsh fritillary, respectively.
- Regarding the categorisation of the habitat in the submitted biodiversity chapter and marsh fritillary report as “potential supporting habitat”, and in light of the findings of the additional surveys carried out, it can be confirmed that the areas of semi natural grassland which delineate railway infrastructure between T13 and T14 provide supporting habitat for this species. The surveys confirmed the presence of marsh fritillary at all stages of its life cycle to be using small sections of these grasslands.
- Regarding the loss of approximately 490m2 of semi natural grassland to facilitate T15, following on from additional surveys, while no indication of marsh fritillary was recorded in this 490m2 area of semi natural grassland the assessment of the area as “potential” supporting habitat has been re-evaluated as “likely” supporting habitat due to its proximity to confirmed breeding sites for marsh fritillary. In light of this an updated impact assessment has been provided in the marsh fritillary report which is included as appendix 1. This report also provides mitigation measures to ensure that there is no loss of likely supporting habitat for marsh fritillary at a local or county scale as a result of the proposed development. Measures include the following:
    - Prior to commencement of construction works, an updated survey will be undertaken to determine if there has been any changes to the extent of identified suitable marsh fritillary habitat within the construction footprint.
    - Areas of suitable habitat within and adjacent to the construction footprint will be fenced off under the supervision of a qualified ecologist using heras fencing to ensure no inadvertent removal or damage of habitat. A modified construction methodology will be adopted at this location to ensure that

there will be no loss to this small section of habitat (Table 4-1 of the updated Marsh Fritillary report).

- Regarding concerns with respect to potential drying out of suitable habitat a technical letter provided by Michael Gill from Hydro Environmental Services (Appendix 2) addresses this issue, concluding that as a result of the geometry and existing drainage conditions of the rail bed, it has little or no potential for further drying out as arising from the wind farm development. In the operational phase (subject to consent and construction) the area of the wind farm footprint (at T13 and T14) will be locally drained and the vast areas of the surrounding cutover bog will be rewetted to optimise climate and habitat enhancement benefits. Therefore, the wider potential effects of drying out on the wider cutover bog will not occur.

I note the details of the updated Marsh Fritillary Report which compiles the details of surveys undertaken over 2020, 2021, 2022, 2023 & 2024 both on behalf of the applicant and also as detailed in the Lepidoptera report prepared by Mr Jesmond Harding, on behalf of DRB Community CLG. Table 3-1 provides a concise summary of surveys undertaken within the site and their findings and Table 4-1 provides an assessment of the potential impacts. Regarding potential for habitat loss during construction, it is noted that the proposed development has been designed to avoid areas identified as providing suitable habitat for marsh fritillary where possible. However, section of likely breeding habitat 0.049ha identified within the development footprint. The potential for drying out of supporting habitat for marsh fritillary is also considered. All suitable habitat for marsh fritillary was recorded on raised supporting embankments for the existing railway infrastructure and therefore is highly drained. Surrounding areas have already been significantly drained for peat extraction therefore there is no potential for construction to result in further drying out of any supporting marsh fritillary habitat. Regarding disturbance / direct mortality whilst marsh fritillary was recorded in close proximity to the footprint of the proposed development, within grasslands delineating railway infrastructure between T13 and T14 in the form of larval webs, caterpillars (5^{th} instar larvae), eggs and adults, no adults or breeding sites for marsh fritillary were identified within the footprint of the proposed development. However, there is potential for the inadvertent disturbance/direct

mortality to the species arising from the construction phase of the development via encroachment of machinery into identified breeding sites.

Regarding the assessment of significance prior to mitigation it is asserted that in the absence of mitigation the loss of 0.049ha (1.23%) of identified likely breeding marsh fritillary habitat constitutes a permanent slight negative impact at local and county scale. This would not be reversible as it is within the construction footprint. Regarding disturbance /direct mortality, there is potential for significant negative impacts on populations of local and county importance via direct mortality arising from encroachment of machinery into identified breeding sites win close proximity to the construction footprint.

Mitigation measures to ensure no loss of suitable marsh fritillary habitat and to prevent disturbance / direct mortality include:

- Prior to commencement of construction works, an updated survey will be undertaken to determine if there have been any changes to the extent of identified suitable marsh fritillary habitat within the construction footprint.
- Areas of suitable habitat within and adjacent to the construction footprint will be fenced off under the supervision of a qualified ecologist using heras fencing, to ensure no inadvertent removal or damage to the habitat.
- A modified construction methodology will be adopted, removing the necessity of losing the small section of habitat.

  The pad for the crane boom, which forms the overlap with supporting habitat for marsh fritillary will be removed and the crane boom will be laid on the road, on other remaining hard standing or temporary bog mats if necessary.

  The assist crane pad will be reduced in size to ensure they do not encroach on this area of habitat.

  A suitable buffer zone between the works area and marsh fritillary habitat will be established under the supervision of a qualified ecologist.

A marsh fritillary management plan will enhance and promote further areas of suitable habitat within the development site.

In terms of residual impact following mitigation. No loss of marsh fritillary habitat is anticipated. The proposal has potential to have an overall positive impact on suitable habitat. Following incorporation of mitigation measures no significant negative impacts are anticipated on any geographic scale.

In terms of operational phase no impacts on supporting habitat are anticipated.

Decommissioning phase - no additional or ancillary impacts are anticipated. Mitigation measures for the construction phase will be implemented during decommissioning ensuring that no marsh fritillary breeding sites are damaged / destroyed during any works.

Response from Hydro Environmental Services relates to the hydrological aspects of the further information request and specifically the potential for drainage and drying out of peatland habitats associated with the Marsh Fritillary Butterfly Annex II species. It is outlined that from a hydrological perspective the potential for drying out of the rail bed will not occur for the following reasons:

- Rail beds have been in this position for >50 years and the local hydrology and drainage regime is well established incorporating longitudinal toe-drains on both sides of the raised embankments to maintain drainage and stability during the extraction of peat.
- The rail beds would be reasonably dry areas and surrounding peat fields are drained by frequent field drains. While the drainage of the surrounding cutover bog has been diminished slightly over recent time by reduced / infrequent drainage maintenance and vegetation encroachment, those drains still exist. Vast areas of the surrounding cutover bog will be rewetted to optimise climate and habitat enhancement benefits therefore, the potential effects of drying out on the wider cutover bog will not occur.

- Regarding **error in ZTV mapping**, the banding error is acknowledged and noted that this occurred when the files were compressed for upload to the SID website. The response to submissions document has been split into 4 parts and uploaded to the SID website to allow for the document to be uploaded in full resolution.

8.0 Planning Assessment

8.1 I have read the entire contents of the file, visited the site and surroundings, and have had particular regard to the national and local policy in respect of the wind farm development. I have also had regard to all the submissions contained on file including the submissions of the various third-party observers, the prescribed bodies and submissions from Westmeath County Council and Meath County Council.

8.2 All three following sections of this report (Planning Assessment, EIAR Assessment and the Appropriate Assessment) should be read in conjunction so as to enable holistic analysis and to avoid unnecessary repetition under each of the sections.

Planning Assessment

I consider the following issues are pertinent in determining the current application before the Board:

- Principle of Development
- Legal and Procedural issues
- Landscape and visual impact
- Residential Amenity - Noise, Shadow Flicker, Health & Safety
- Traffic and Transport
- Biodiversity

8.3 The Principle of Development

8.3.1 National Policy recognises the need to urgently move towards a low carbon and climate resilient society with a sustainable renewable energy supply and associated grid infrastructure provision. Ireland is committed to achieving climate neutrality no later than 2050 with a 51% reduction in greenhouse gas emissions by 2030. These legally binding objectives are set out in the Climate Action and Low Carbon Development (Amendment) Act of 2021.

8.3.2 The Climate Action Plan, 2023 (the second annual update to Ireland's Climate Action Plan 2019) and follows the introduction in 2022 of economy wide carbon budgets and sectoral emissions ceilings states that large scale deployment of renewables will be critical to decarbonising the power sector. The Plan sets out a roadmap for taking decisive action to halve our emissions by 2030 and reach net zero no later than 2050. Climate Action Plan 2024 currently under public consultation restates the key national target of 9GW for onshore wind by 2030.

8.3.3 Transitioning to a low carbon and climate resilient society is a National Strategic Outcome of the Project Ireland 2040 National Planning Framework. Reflecting this, NPO1 seeks to enhance the competitiveness of rural areas by supporting innovation and diversification of the rural economy into new sectors and services including those addressing climate change and sustainability. NPO 54 seeks to reduce carbon footprint by integrating climate into the planning system in support of national targets for climate policy mitigation and adaption objectives as well as targets for greenhouse gas emission reduction. National Policy Objective 55 will seek to "promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050." The transition to a low carbon energy future requires a shift from predominately fossil fuels to predominately renewable energy sources. In relation to peatlands the National Planning Framework notes that some of Ireland's cutaway bogs are suitable to facilitate the generation of energy, most notably wind / biomass. A medium to longer term strategic national land use plan for peatlands in state ownership will be prepared in order to manage their most appropriate future use, building on existing national peatlands strategy and other national policy related to peatlands conservation and management.

8.3.4 At a regional level, the Regional Spatial & Economic Strategy for the Eastern and Midland Region 2019-2031 supports an increase in the amount of new renewable energy sources in the Region. This includes the use of wind energy – both onshore and offshore, biomass and solar photovoltaics and solar thermal, both on buildings and at a larger scale on appropriate sites in accordance with National Policy and the

Regional Policy objectives outlined in the strategy. Objective RPO10.22 seeks to support the reinforcement and strengthening of the electricity transmission and distribution network to facilitate the planned growth and transmission and distribution of renewable energy. Objective RPO7.35 sets out that the EMRA shall, in conjunction with local authorities in the Region, identify strategic Energy Zones as areas suitable for larger energy generating projects, the role of community and micro energy production in urban and rural settings and the potential for renewable energy within industrial areas. The strategic energy zones for the region will ensure all environmental constraints are addressed in the analysis. A regional landscape strategy could be developed to support delivery of projects within the Strategic Energy Zones.

8.3.5 Section 6 above lists various other reports and guidelines which set out targets, policies and objectives seeking to reduce dependence on fossil fuels whilst also encouraging the expansion and development of the renewable energy sector. It is clear that the proposed 26 turbine windfarm with potential installed capacity of c.117-169 MW complies with the overarching aim set out in the Climate Action Plan 2024 of tackling climate breakdown by reducing greenhouse gas emissions and by contributing towards the provision of 9GW of renewable energy capacity over the period to 2030.

8.3.6 At the local level the proposed windfarm site falls across the administrative areas of Meath and Westmeath therefore both the Meath County Development Plan 2021-2027 and the Westmeath County Development Plan 2021-2027 are relevant. Both encourage and support the principle of development of wind energy and highlight the need to reduce reliance on fossil fuels and to reduce greenhouse gas emissions.. The Westmeath County Development Plan 2021-2027 specifically refers to Industrial Scale Windfarms and to reference within the RSES to after use of Peatlands for climate change mitigation and adoption including renewable energy production. CPO 10-145 is to direct large scale energy production projects in the form of wind farms onto cutover cutaway peatlands subject to environmental landscape habitats and wildlife protection requirements being addressed. Numerous policies contained in the Meath

County Development Plan seek to ensure that wind energy is harnessed in a manner that is consistent with the proper planning and sustainable development of the area.

8.3.7 It is noted that both Meath and Westmeath County Council in their submissions acknowledge that the principle of development is supported by development plan policy. I note that some third party submissions question the very principle of windfarm development in the context of its performance relative to alternative renewable energy sources. I note that this is considered in some detail in the context of alternatives as part of the Environmental Impact Assessment of the proposal.

8.3.8 It is clear from the foregoing review, that policy at all levels acknowledges that significant increases in wind energy capacity will be required to meet the mandatory national targets set out in relation to tackling climate change. The proposed wind farm, with a projected maximum output of up to 169 megawatts will deliver and build upon the renewable energy resource available in Ireland and will assist in the progress to a low carbon economy and to a reduced dependence on fossil fuels. The additional wind generated energy will enable the decarbonisation of the electricity sector in line with European and national climate strategies. Having regard to the overarching policy statements contained in the various documents at national and local level, it is reasonable to assume that the proposed development, subject to qualitative safeguards is acceptable in principle and in accordance with the overall goal of reducing reliance on fossil fuels and promoting and developing more sustainable forms of renewable energy. The policy support for on shore wind farm development and for the use of cutover peatlands for this is notable therefore it is appropriate that this application should be assessed on its merits having regard to impacts on the surrounding environment and the proper planning and sustainable development of the area. I also note that there is a clear precedent for wind energy development in this locality given the grant of permission for a windfarm development of 9 turbines known as Bracklyn Windfarm. (ABP311565.21). Overall, I consider that the proposed windfarm is in compliance with the strategic objectives of the national and regional policy on renewable energy. The proposed development will deliver a significant increase in renewable energy production and an associated reduction in CO_2

emissions, thereby helping to address climate change at a local level. The proposal is therefore acceptable in principle and in accordance with the proper planning and sustainable development subject to the assessment of the detailed matters addressed hereunder.

8.4 Legal and Procedural Issues

8.4.1 A number of the third parties raise issues of a legal and procedural nature which include :

Project Splitting

Proposal does not constitute strategic infrastructure type development SID

Ownership

Inadequate public consultation

Premature pending authorisation / substitute consent for historical peat extraction

8.4.2 On the allegation of **project splitting** also known as salami slicing, it is contended that this arises in the context of the proposal and other individual windfarm applications in the locality including in particular the permitted Bracklyn and proposed Knoakanarragh projects. I note that the definition and the undesirable outcome of project splitting relates to the splitting of large scale developments into smaller applications in order to create subthreshold Environmental Impact Assessment (EIA) development proposals thereby circumventing the requirement to carry out EIA. In assessing the current context, I note that the developers in the three projects are different and in any case the applicant has carried out a comprehensive EIA therefore there has been no attempt to circumvent the EIA process. Furthermore the EIAR includes a thorough cumulative impact assessment of the proposed development in combination with the permitted Bracklyn and proposed Knockanarragh projects and other permitted and proposed windfarms within the study area. Whilst I acknowledge that the context is not static and other projects may evolve over time, I consider that the application has

endeavoured to assess the cumulative impact based on available information as far as is practicably possible and I am satisfied that the information provided enables the Board to carry out a full comprehensive and robust assessment of cumulative impact.

8.4.3 Regarding **the status of the proposed development as SID** under the provisions of the Act, I note that following the conclusion of consultations under section 37B of the Planning and Development Act 2000 as amended, the Board decided on 4th April 2022 under section 37B(4)(a) that it is of the opinion that the proposed development falls within the scope of paragraphs 37(A)(2)(a) (b) and (c) of the Act. Accordingly the Board decided that the proposed development would be strategic infrastructure within the meaning of section 37A of the Planning Act 2000, and any application for permission for the proposed development must therefore be made directly to An Bord Pleanála under Section 37E of the Act.

8.4.4 Regarding the **ownership issue**, legal rights of way and such property entitlements, I note that a number of the third parties have outlined the contested ownership in particular in relation to several land tracts evidently not currently registered with Bord na Mona, easement rights and with regard to access routes at Liscloher. It is outlined that a number of properties are subject of legal proceedings where the third parties have contested Bord na Mona's claim for adverse possession. The applicant in response claims ownership and sufficient legal entitlement. I acknowledge the complexity of landownership and easement rights in this peatland context and I consider that it is not a matter for the Board to adjudicate on such matters. I note that all matters raised are essentially civil matters between the parties and are not strictly matters for determination within the scope of planning legislation. In this regard I would refer the parties to Section 34(13) of the Planning and Development Act 2000, as amended as follows: "*A person shall not be entitled solely by reason of a permission under this section to carry out any development.*"

8.4.5 Regarding **public consultation** a number of third parties have argued that no meaningful consultation took place with the local community, noting that much of the public consultation period coincided with the covid pandemic thereby limiting

opportunity for the local community to participate in the process. It was further contended that hard copies of the application should have been made available to the local community.

8.4.6 I note the provisions and advice set out in the Department of the Environment's "Wind Energy Development Guidelines 2006" under Section 4.4 titled 'Public Consultation with the Local Community' as follows:

"Planning authorities should encourage developers to engage in public consultation with the local community. While it is not a mandatory requirement, it is strongly recommended that the developer of a wind energy project should engage in active consultation and dialogue with the local community at an early stage in the planning process, ideally prior to submitting a planning application."

The guidelines explore the consultation process at all stages of the project and set out best practice guidance on pre application public consultation in Appendix 2. It is noted that the provision of a good flow of information to the public about a proposed wind energy development prior to formal application can avoid conflict.

8.4.7 In their response submissions on the matter the first party refers to Code of Practice for Wind Energy Development in Ireland for community Engagement (Department of Communications, Climate Action and Environment 2016 and to the detail of public consultation carried out is set out in the Ballivor Wind Farm Community Engagement Report, (Appendix 2-2 of the EIAR). It is asserted that comprehensive consultation and public participation was carried out including notification of local representatives and community, briefing sessions for local elected members and electronic communications. A community liaison officer delivered a project introductory letter regarding the proposal to households within a minimum of 1.5km of the proposed site boundary and ongoing liaison and engagement with the local community. Community information sessions were held in the villages of Ballivor, Delvin and Raharney and feedback invited. The communication strategy was modified to take account of Covid restrictions with ongoing communications through community information sessions written communications and meetings. Dedicated contact details and project website provide for ongoing communication with the public.

Details of consultation with prescribed bodies is set out at Section 2.5 and Appendix 2.1 of the EIAR.

8.4.7 A summary of the key issues raised during the course of consultations is provided together with a description of how these prescribed body and community inputs influenced the evolution of the design of the proposed development. Whilst I acknowledge the difficulties posed by the covid pandemic restrictions and complex nature of the development, having considered the information provided in the EIAR, I am satisfied that the level of consultation undertaken had regard to the relevant guidance for wind farms and meets the statutory obligations and is acceptable in this regard.

8.4.8 On the matter of the **substitute consent application** and authorisation of historic peat extraction, I note that leave to apply for substitute consent application LS.17.311646 was withdrawn on 15/1/2024 arising from legislative changes with regard to the substitute consent process under the Planning and Development, Maritime and Valuation (Amendment) Act 2022. Given the nature of the current application it is my considered view that the current application is not constrained pending resolution of single stage substitute consent application process with regard to historic peat extraction and it is considered that the proposed development as set out in this application can be assessed on its own merit and without prejudice to any future application.

8.5 Landscape and Visual Impact, Archaeology and Cultural Heritage

8.5.1 Third party submissions express significant concerns regarding the visual impact of the proposed development on the landscape, on residential amenity and on heritage assets having regard particularly to the scale and height of the proposed development and the cumulative impact particularly when considered in conjunction with the nearby permitted Bracklyn windfarm. A number of observer submissions question the adequacy of selected photomontage viewpoints. Meath County Council raise concerns

regarding impact on historical landscapes, world heritage sites (UNESCO Tentative list), protected structures and other sensitive locations reiterating concerns with regard to the coalescence of windfarms from sensitive views. The submission from the Office of Public Works expresses significant concerns regarding the impact on landscape and cultural heritage assets of significance including views from and to the Hill of Tara, Loughcrew / Slieve na Calliagh, Trim Castle Delvin Castle, Donore Castle, Frewin Hill and Raharney Ringfort. The submission from the Development Applications Unit Department of Housing Local Government and Heritage references three nearby monuments omitted from the cultural heritage impact assessment namely Tlachtga Hill of Ward (National Monument No 150) Tower House at Causetown (Lune By) (Preservation Order 176/1945) and Barrow at Rathwire Upper (Preservation Order No 18/1977) subsequently considered within the response to observers submission.

8.5.2 Chapter 13 of the EIAR addresses the landscape and visual impact focussing on the proposed turbines as the essential aspects of the proposal from a landscape and visual perspective. The cumulative impact in conjunction with other windfarm developments in particular the permitted Bracklyn project needs also to be considered. The baseline landscape comprises a flat lowland expansive network of peatlands which is strongly influenced by historical industrial peat extraction practices. The proposed development is within a large expanse of uninhabited peatland while the wider area is relatively sparsely populated also flat landscape while more heavily vegetated. Consequently vegetation provides for limited exposure of the proposed development from receptors particularly beyond 3km of the proposed turbines. In terms of surrounding settlement the nearby villages Ballivor 3.5kmE, Raharney 4km W and Delvin 5km NW are considered. As regards landscape designations 16 of the proposed turbines are located within Westmeath landscape character area 3 (River Deel Lowlands designated as an area with ‘low’ capacity for wind energy, (as are all other LCAs in Co Westmeath save Uisneach which has no ‘capacity’). The remaining 10 proposed turbines are within Meath LCA 15 (South-west lowlands) designated as having ‘medium’ potential for wind energy development.

8.5.3 In terms of mitigation by design, it is noted that the layout proposed adheres to the guidance for siting of wind farms in flat peatland landscape types as set out in DoEHLG Guidelines 2006. The layout creates two coherent clusters consistently spaced and visually connected and sufficiently separated to enable legibility in the landscape. Connection to the national electricity grid is via direct connection into the Mullingar Corduff 110kV overhead line which traverses Carranstown Bog. The use of existing tracks and machine pass routes where possible is favourable in terms of reducing visual effects.

8.5.4 As set out in Figure 13-5 of the EIAR a review of the landscape policy context reveals that the immediate setting of the site is not unduly sensitive in terms of scenic qualities and landscape designations with most sensitive landscape designations set back at the outer periphery of the study area (>10km). Whilst the closest designated scenic views Meath V 54, and Westmeath-SR along the Royal Canal and the Royal Canal corridor have theoretical visibility of the proposed development, more detailed observation of actual visibility reveals mitigation by way of vegetation screening and the topography along the canal.

8.5.5 The overall character of the local landscape will clearly be substantially altered by the introduction of 26 no, 200m tip height, vertical man-made structures, and ancillary infrastructure on the development site, and particularly so where open visibility is afforded across the flat peat bogland. However the extent of visibility within the surrounding area will be mitigated to a degree by localised undulations, vegetation and manmade elements in the landscape, particularly beyond 5km from the development site. As noted within the documentation the low base elevation of the turbines relative to the surrounding landscape causes a disproportionate screening effect.

8.5.6 The impact of the proposed development, in conjunction with the permitted Bracklyn windfarm, on the immediate locality will be significant and material in terms of the visual presence due to height and scale. However, it must also be acknowledged that these peatlands have been identified as an area with capacity to provide for windfarm

development to meet national and strategic objectives in terms of renewable energy targets. Furthermore, the context has clearly been subject to historical landscape alterations in terms of industrial peat extraction, settlement and infrastructure and has the capacity to absorb such change.

8.5.7 Regarding the adequacy of visual impact assessment in terms of the submitted photomontages, I consider that the locations are representative and justification for their inclusion is clearly outlined and reasoned within the EIAR. Of the 19 viewpoint locations no 'profound' or 'very significant' effects occurred at any of the viewpoints. Residual effects of 'significant' occurred at one viewpoint location (VP03) given proximity <1km.

8.5.8 Regarding visual impact effects on residential amenity and the question of potential for overbearing impact, I note that there are a number of sensitive residential receptors arranged predominantly along the local road network within 5km of the proposed turbines where the most visibility will occur. The proposed layout adheres to the recommended 500m minimum set back distance in the current 2006 guidelines and the 4 times tip height 800m set back prescribed for residential visual amenity in the Draft Guidelines 2019. Photomontage viewpoints 03, 04, 10, 15, 19,and 17 seek to represent the visual effects on nearby residential receptors. I consider that while clearly altering the local context, the expansive nature of the site and the generous spacing of turbines mitigates the potential for overbearing impact.

8.5.9 Regarding settlements I note that Ballivor village, 3km east, has limited views due to screening from residential dwellings and infrastructure. VP04 from residential dwellings within the village was given a 'high' sensitivity rating due to proximity where 7 of the 26 proposed turbines are visible. Magnitude of change was deemed to be 'slight' and residual effect 'slight.' Regarding Ratharney located 3.9km to the west of the nearest proposed turbine, analysis found that route vegetative screening along the roads and the built form within the settlement combine to limit views of the development. VP 17 is taken from 1.5km east of Ratharney where residual visual effects were deemed to be 'moderate'. No significant effects are likely to occur from

receptors within Ratharney. Regarding Delvin 5.3km northwest route screening analysis indicated mostly no visibility from within Delvin. VP18 to the south of Delvin shows open views towards the site. Vegetation reduces open views and residual effects were deemed to be 'slight'. Trim is located 14.3km east of the nearest proposed turbine and views are limited due to screening by vegetation and built infrastructure. Views are only likely from high elevations (e.g. top of Trim Castle). No significant visual effects will occur. Crossakeel village 14.5km north will have limited areas of open visibility. VP13 from local road leading to Crosakeel where visual effects were deemed to be 'slight'. Rathmoylon, Rathcairn, Clonard and Kildalkey are all further than 5km from the proposed development and visual impact will not be significant.

8.5.10 The sensitivity of the wider landscape in terms of archaeology and cultural heritage, recreational and tourism destinations is fully acknowledged within the EIAR. A number of key receptors including designated scenic views from the Hill of Tara (25.8km), Slieve na Calliagh and Loughcrew Megalithic Tomb (17km), the Royal Canal Way, Hill of Ward 9.5km, Trim Castle (14.5km) and Spire of Lloyd (17.9km) are addressed in detail within the EIAR. The fundamental structure of the impact assessment (Sensitivity x Magnitude of Change = Effect) is clearly laid out in the impact assessment and account is taken for cumulative effects particularly with other wind energy development.

8.5.11 I note also the additional information submitted in response to the observations and particularly submission of the Department of Housing Local Government and Heritage with respect to heritage sites within 10km, which includes an assessment of the landscape and visual effects from additional local heritage sites including the Hill of Ward, and Martinstown Castle. I note the error with regard to Tower House at Causetown however having considered the context, I am satisfied that the separation distance involved and screening ensures that the impact on setting is not significant. In my view the information provided enables a thorough and robust assessment of landscape and visual effects and indirect effects on the setting of the heritage assets. Having considered the photomontages submitted with the application I consider that

the proposed windfarm has been comprehensively assessed from representative vantage points. It is my considered view that the proposed wind farm will result in an acceptable visual impact within the wider landscape.

8.5.12 Regarding the adequacy of visual impact assessment in terms of the submitted photomontages, I consider that the EIAR provides a representative comprehensive review and discussion of the landscape and visual effects of the proposed development on the relevant high sensitivity cultural heritage sites. Regarding Loughcrew and Slieve na Calliagh Hills, which are classified as having exceptional value and high sensitivity on account of the cultural heritage value and relevant designations in the Meath County Development Plan, the nearest proposed turbine is 18.7km distant. Two of the photomontages VP11 and VP12 assess the views from the landscapes and visual receptors at Loughcrew and Slieve na Calliagh. Regarding VP11 from the elevated peak around Loughcrew Megalithic Cemetery shows open and clear views of the proposed development along with the permitted Bracklyn windfarm. The turbines read as one coherent cluster of similar turbine scales. Several other windfarms in the study area will be visible in the distant background however the vast open expanse of the view allows for the assimilation of the projects into the landscape. The proposed Knockanarragh windfarm[11] would be viewed in closer proximity and this will be considered as part of this planning application also currently before the Board. Regarding solar developments as noted in the first party submission in response to observations, due to setback distance, nature of the undulating vegetated landscape and the ground based nature of solar development no cumulative landscape and visual effects on Loughcrew and Slieve na Calligh arise in combination with the proposed development and other development.

8.5.13 I note the concerns raised with regard to implications of the proposed development given the intervisibility between Hill of Uisneach and the Royal Site of Tara. It is asserted in particular in the submissions of Meath County Council and the Office of Public Works, that by virtue of the significance of the Royal Sites on the tentative World Heritage site list, and in the context of outstanding universal value, reference to

[11] ABP319448 Proposed development of an 8 no turbine windfarm development and associated works.

UNESCO guidance and toolkit for assessment in a world heritage context is a necessity. I note that in addressing this issue in the response of the applicant to observations, reference is made to the findings of the EIAR LVIA that no significant impact on sites and views at the Hill of Tara will occur. Whilst the Hill of Tara was given a 'very high' sensitivity rating the 'magnitude of change' was deemed to be 'negligible' for a number of reasons including setback distance of 26.1km, location within a landscape deemed to be suitable for the development of wind energy, appearance as very small features in the distance, appearance as collective 11^{o} field of view within 360^{o} panoramic views and positioning in the landscape view and lack of impact on key scenic and special landscape characteristics or qualities.

8.5.14 Regarding Hill of Uisneach (33.2km), Brú na Bóinne (37.5km), Dun Ailinne (46.6km), it is argued that given the separation distance to these features the proposed development will not have a material impact on these sites of national significance. I have considered the recommendation of Meath County Council that the Board seek the advice of an independent world heritage expert with specific expertise in assessing world heritage site nominations on behalf of UNESCO to assess whether the development could impact (either alone or in-combination with other developments) on any future nomination by the state to UNESCO for world heritage status using established international best practice. Having deliberated on this issue, I am inclined to concur with the findings of the EIAR LVIA regarding visual effects on the Hill of Tara which concluded that the 'magnitude of change' was negligible noting the key considerations that the nearest proposed turbine is set back a distance of 26.1km west of the Hill of Tara. The turbines are visible in a location to which wind energy is directed in local planning policy and to a landscape deemed to be of relatively low sensitivity and one which is highly suitable for wind energy development. The peatlands form part of a modified working landscape setting where there is limited visibility and large setback distances from large population centres and highly sensitive visual receptors. The proposed turbines are seen as small features at this distance and are absorbed within an expansive flat plain and do not obstruct or interfere with views of any other distinguishable feature of the landscape or special landscape qualities and key sensitivities. The proposed turbines in conjunction with the permitted Bracklyn turbines are accommodated successfully within the landscape

from a visual amenity point of view. Regarding cumulative visual impact I note the updated cumulative context map submitted in response to observations which takes account also of the permitted Friarspark Solar farm noting no in combination cumulative landscape and visual interactions with the proposed development from the Hill of Tara. Turbines of the proposed Knockanarragh project are likely to be visible in combination. The Knockanarragh turbines would potentially be viewed at a similar scale and form as the proposed Ballivor turbines slightly to the right (north-west) within the field of view and there would be some visual separation creating a third turbine cluster. However, I would concur that the landscape is capable of absorbing these developments and will not result in any significant landscape and visual effects.

8.5.15 Regarding the 'Royal Sites of Ireland' grouping, which has been included by the Government in Ireland's 2022 UNESCO World Heritage Tentative List for World Heritage Site Status, The Tentative List is an inventory of natural and cultural heritage sites that may have potential to demonstrate Outstanding Universal Value (OUV) and therefore be considered suitable for nomination to the World Heritage List. World Heritage Properties are places of outstanding importance to all people no matter where they live and form a common inheritance for humanity. The Royal Sites of Ireland are proposed as a serial nomination as a group of six separate sites, which are stated in the submission to UNESCO to be unique through their well-preserved cultural continuity and large scale Iron Age complexes. Four of the places are reputed to have been the provincial royal capitals of Ireland; Rathcroghan, Co. Roscommon in Connaught; Navan Fort, Co. Armagh in Ulster; Dún Ailinne, Co. Kildare, in Leinster; Cashel, Co. Tipperary, in Munster. Tara, Co. Meath had a special status as the seat of the High King and in all cases, their kings, 'Rí Temro', had claim to supreme kingship. The sixth site, Uisneach, Co. Westmeath, was seen as the omphalos or centre of Ireland and the point at which the provinces converged. It had a symbolic function that bound the provinces together spiritually. Under the submission in relation to 'Justification of Outstanding Universal Value' it is stated that 'All of the Royal Sites form part of larger archaeological landscapes characterised by a large concentration of ritual monuments. Situated on strategic and elevated locations, the Royal Sites are organically evolved relict cultural landscapes where the pre-Christian kingship in Ireland evolved and ended. The Royal sites are directly associated with Irish

mythology and traditional beliefs and continue to represent spiritual and symbolic centres of Irish culture and identity, which have influenced approaches to life in many countries of the world'. It is indicated that the Royal Sites must remain on the tentative list for at least one year before nomination to UNESCO, and the nomination process with UNESCO takes place over a period of four to six years.

8.5.16 I note that Uisneach is located 33.2km from the nearest proposed turbine Dún Áilinne 46.6km and Brú na Boinne 37.5km. Given the limited visibility at these distances, that they fall outside of the LVIA study area. I accept the reasoning within the LVIA study that based on the distances involved and landscape character, no significant impacts are likely to occur. I note policy requirements and the draft Wind Energy Development Guidelines (WEDGs) which refer to the necessity of achieving a balance in terms of providing for wind energy development in the context of tackling climate change and not materially affecting our natural and built environment. The draft guidelines recognise the importance of landscape and refer to UNESCO world heritage sites noting that in terms of identifying suitable locations for wind energy development planning authorities should evaluate landscape sensitivity in terms of national landscape strategy, landscape character areas, landscape sensitivity and value areas, high amenity zones, scenic views and prospects and land use objectives relating to landscape protection, National Parks, Special Amenity Order Areas and UNESCO World Heritage Sites.

8.5.17 I have reviewed the entry on the UNESCO World Heritage Convention tentative list in reference to The Royal Sites of Ireland: Cashel, Dún Ailinne, Hill of Uisneach, Rathcroghan Complex, and Tara Complex. https://whc.unesco.org/en/tentativelists/5528/. In terms of the justification of outstanding universal value it is stated that:

"The ensembles of monuments of the royal sites are universally unique through their well-preserved cultural continuity and large-scale Iron Age complexes. The Royal Sites were sacred sites and places of royal inauguration and bear exceptional testimony to Iron Age civilisation. Historically, their roots go back to the Neolithic period and they illustrate significant stages in human history through the large array of monuments ranging from Bronze Age tumuli to Iron Age ring forts and to early Christian architecture. All of the Royal Sites form part of larger archaeological landscapes characterised by a large concentration of ritual monuments. Situated on strategic and elevated locations, the Royal Sites are organically evolved relict cultural landscapes where the pre-Christian kingship in Ireland evolved and ended. The Royal sites are directly associated with Irish mythology and traditional beliefs and continue to represent spiritual and symbolic centers of Irish culture and identity, which have influenced approaches to life in many countries of the world."

Regarding integrity it is stated that
"Based on preliminary observation the sites appear are largely intact and to have retained their original attributes. Overall the sites are well preserved and retain high visual landscape qualities. The archaeological sites have been excavated to varying degrees (e.g. Uisneach, excavated from 1925-30; the Rathcroghan complex, remains largely unexcavated with some ongoing works; the Tara complex, major excavations under the Discovery Programme and the National Roads Authority; Dún Ailinne, excavations from 1968-75). In the case of Cashel there have been recent restoration works on the buildings and the frescoes in Cormac's Chapel. Nevertheless, it would appear that the form, design, materials and substance of the archaeological complexes and monuments are reasonably intact. Ritual uses of the sites still occur on a small scale today, including celebrations of the Winter and Summer Solstices as well as Bealtaine and Samhain, and the tradition of agricultural use of the landscapes continues. The sites are located in largely pastoral landscapes and include hilltop locations with dramatic panoramic views, which contribute to a unique sense of character, spirit and feeling.

To varying extent the sites have been impacted by erosion, agricultural and quarrying activity considering their rural location. However, the range of monuments and the considerable quantity of surviving earthworks across the archaeological complexes incorporates all the elements necessary to express the outstanding universal value of the royal sites. Each of the individual sites occupies a relatively large area, which is of adequate size to ensure the complete representation of the features, and processes conveying their significance."

8.5.18 I have reviewed the Guidance and Toolkit for Impact Assessments in a World Heritage Context, Unesco 2022. I note provisions at 3.2.23 regarding Impact Assessment, boundaries, buffer zones and the wider setting where it is noted the wider setting of a world heritage property might also play an essential role in protecting the authenticity and integrity of the property, and its management is related to its role in supporting the outstanding universal value. The assessment of impacts on world heritage involves determining whether the proposed development would affect the property's outstanding universal value and other heritage/conservation values. The focus of the assessment changes from 'what is the impact of this project/plan' to 'what is its impact on outstanding universal value.' Where a proposed action has the potential to affect a world heritage properties Outstanding Universal Value OUV and other heritage conservation values either alone or jointly with other actions (cumulative impact) the assessment of the actions effects on OUV should be carried out. The guidance provides that where formal assessment of impact on heritage is required as part of local national framework the assessment of OUV can and should be integrated into this wider impact assessment.

8.5.19 I consider that based on the distance to the archaeological complexes and monuments of the Royal sites and in light of the findings of the Landscape and visual impact Assessment as set out in the EIA there is no potential for significant effects on outstanding universal value.

8.5.20 Arising from my assessment of the submitted information I consider the visual impact of the proposed development has been thoroughly assessed and I find the impact to be acceptable. I note in particular that while the proposed development due to its height and scale will have a profound visual impact when viewed from vantage points in the immediate vicinity of the subject site and up to a distance of 5 kilometres from the subject site, the receiving landscape constitutes a working landscape in a rural area and that is devoid of any specific designation in terms of scenic quality or high amenity and a landscape setting which has been identified in adopted policy at all levels, as potentially suitable for wind farm development. While wind farms by their very nature due to their overall height and scale will undoubtedly have a profound impact on the immediate receiving environment in which they are located a refusal of

planning permission purely on visual presence would prohibit the development of wind energy projects, which would obviously jeopardise national targets in respect of renewable energy. The applicant has in my view carried out a robust and comprehensive visual impact assessment from appropriate vantage points in the vicinity area and has adequately demonstrated that while the wind farm will clearly be discernible from various vantage points in the wider study area, the impact cannot be considered significant in visual terms. Based on the analysis undertaken it has been demonstrated that the proposed wind farm will not detract from the setting and context of sensitive heritage sites including the Royal Sites of Ireland, UNESCO World Heritage Tentative List. The cumulative impact of the proposed development in combination with other permitted and proposed developments including the permitted Bracklyn Windfarm and proposed Knockanarragh windfarm has been taken into consideration and it is my considered view that while the proposed development will constitute a significant intervention in the landscape resulting in impacts from a number of receptors and viewpoints, the landscape has the capacity to absorb such development. Wind energy developments have and are likely to become increasingly part of the Irish rural fabric and this is well supported by policy.

8.6 Residential Amenity, Noise, Shadow Flicker, Health & Safety.

8.6.1 A number of third parties express concerns regarding potential negative impacts on residential amenity in terms of noise and vibration, shadow flicker and health issues. In relation to noise and vibration it is contended that the introduction of continuous operational noise within this rural area where background ambient noise levels are low will impact negatively on residential amenity and concern is expressed particularly with regard to the potential negative effects on families who experience autism and or sensory issues.

8.6.2 Noise and vibration is addressed in detail within chapter 11 of the EIAR. The assessment relates to both construction and operational phases of the development. It is noted that there are 272 noise sensitive locations (NSL) within 3.5km of the proposed turbine locations. The nearest NSL to the northern cluster is H057 which is

815m from T17and the nearest to the southern cluster is H179 which is 825m from T03. The Bracklyn windfarm is included in the cumulative impact assessment. The assessment of impacts is undertaken with reference to the 2006 Wind Energy Development Guidelines, Department of Heritage and Local Government. The guidelines note that “in general a lower fixed limit of 45 dB(A) or a maximum increase of 5 dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours”. It is noted however that in very quiet areas the use of a margin of 5 dB(A) above background noise at nearby noise sensitive properties is not necessary to offer a reasonable degree of protection and maybe unduly restrict wind energy developments which should be recognised as having wider national and global benefits. Instead in low noise environments where background noise is less than 30 dB(A) it is recommended that the daytime level of the LA90, 10 minutes of the wind energy development be limited to an absolute level within the range of 35 to 40 (dB(A)). Separate noise limits should apply for day-time and for night-time. A fixed limit of 43 dB(A) will protect sleep inside properties during the night.

8.6.3 The EIA refers to the Draft Wind Energy Guidelines 2019 however relies on the 2006 guidelines in terms of compliance assessment. It is stated that in the event that updated Wind Energy Guidelines are published during the application process any relevant changes affecting noise (if any) will be addressed through appropriate planning conditions or where supplementary assessment is necessary through the provision of additional information. I note that the draft guidelines state that the preferred approach is to propose a relative rated noise level of 5dB(A) above the existing background noise in the ranges of 35 to 43 dB(A) with 43dB(A0) being the maximum noise permitted day or night.

8.6.4 Noise levels for the proposed development were calculated for the 272 no noise sensitive receivers located within 3.5km of the proposed turbines and the assessment includes the permitted Bracklyn wind farm to enable cumulative assessment. Omni directional assessment applies assuming all noise locations are downwind of all turbines at the same time is outlined. Five locations where potential exceedances are

noted at H061, H062, H083, H097 and H239. As regards H061, H062 and H239 located to the west of Bracklyn wind farm and where contribution from Bracklyn turbines are greater than that of Ballivor. It is noted that using cumulative assessment of specific locations using background noise levels from the Bracklyn EIAR the predicted noise levels fall within the noise limit criteria.

8.6.5 Regarding H083 and H097 taking account of the effect of directionality of noise emissions the predicted noise levels are within the noise limit criteria therefore no mitigation measures are necessary. It is proposed that in the unlikely event that an issue with low frequency noise in association with the proposed development were to arise an appropriate detailed investigation will be undertaken and if exceedance of relevant threshold values were confirmed measures to mitigate low frequency noise at noise sensitive locations will be implemented through operational controls of the relevant turbine type which may include turbine curtailment and/or stopping turbines under specific operational conditions. Similarly in the event of a confirmed compliant indicating potential amplitude modulation associated with turbine operation an independent acoustic consultant will be employed to assess and devise appropriate operational control mitigation if necessary. Regarding construction and decommissioning phase I am satisfied that the EIAR provides sufficient detail in terms of the potential adverse effects that might arise. Elevated noise levels arising from heavy goods vehicles for turbine delivery excavation and construction will be temporary in nature and relatively short term in duration.

8.6.6 On the basis of the analysis undertaken and presented within the EIAR, I am satisfied that it has been demonstrated that the proposed wind farm development will not give rise to any material impacts in terms of noise generation to the extent that it would adversely affect the amenity of nearby residents.

Shadow Flicker.

8.6.7 Shadow flicker is addressed within chapter 5 of the EIAR Population and Human Health. The EIAR notes that the current 2006 guidelines require shadow flicker to be

limited to 30 minutes per day and 30 hours per year at sensitive receptors while 2019 draft guidelines require that no existing dwelling or other affected property experience shadow flicker as a result of any proposed wind energy development.

These draft guidelines note that 'if a suitable shadow flicker prediction model indicates that there is potential for shadow flicker to occur at any particular dwelling or any other potentially affected property, then a review of the site design including the possible relocation of one or more turbines is required. Following such a review if shadow flicker is not eliminated for any dwelling or any potentially affected property then clearly specific measures which provide for automated turbine shutdown to eliminate shadow flicker should be required as a condition of the grant of planning permission'. The guidelines note that 'modern wind turbines have the facility to measure sunlight levels and reduce or stop turbine rotation if conditions were to occur which would lead to shadow flicker at any neighbouring property'. The guidelines highlight the fact that the use of appropriate equipment and computer software can ensure that no existing dwelling or other affected property should experience shadow flicker.

8.6.8 The Shadow flicker study notes that there are 217 sensitive receptors within 10 rotor diameters of the proposed turbine locations (1.7km). No dwellings are within 4 times tip height setback distance of each turbine (2019 guidelines). Modelling of predicted daily and annual shadow flicker levels under a worst-case scenario, results in daily threshold of over 30 minutes being potentially exceeded at 80 properties. The annual threshold of over 30 hours for shadow flicker is predicted to be exceeded at 12 properties once the regional sunshine average factor of 30% has been considered. Cumulative assessment with Bracklyn Windfarm shows that the daily threshold of over 30 minutes shadow flicker may potentially be exceeded at 83 properties with three of these properties being impacted by Bracklyn alone. The annual threshold of over 40 hours for shadow flicker is predicted to be exceeded at 15 properties once the regional sunshine average factor has been considered. Mitigation measures to include screening measures and wind turbine control measures using the wind farm's SCADA control system are proposed.

8.6.9 Having regard to the draft guidelines, and the applicant's acknowledgement that technological mitigation is available to reduce shadow flicker levels, it is recommended that in the event of a permission, a condition be attached which limits or curtails the operation of the turbines during the probable infrequent periods where shadow flicker occurs at any dwellinghouse. The attachment of such a condition will address concerns in relation to shadow flicker.

8.6.10 Regarding electromagnetic interference and potential for impact on telecommunications it is noted that as part of the scoping and consultation exercise national and regional broadcasters and fixed and mobile phone operators were contacted regarding potential interference. As all requested setbacks from operators links are incorporated into the design no interference risk was identified. The applicant sets out a commitment with regard to the implementation of remedial measures in the event of any interference occurring on television or radio reception due to operation of the wind farm to ensure mitigation measures to rectify any interference.

8.6.12 Having considered the details submitted within the EIS I do not consider that the proposed development will have an unacceptable impact on amenity through excessive noise levels or shadow flicker and other disturbance therefore will not adversely impact on the health and safety of persons living in proximity to the proposed wind farm. I am satisfied that the applicant has undertaken a comprehensive, detailed and vigorous analysis of the potential impacts of the proposed development on residential amenity in the area and I am satisfied that any potential impact will not be significant and would be acceptable.

8.7 Traffic and Transport

8.7.1 A number of the third party observers submit that the Regional Road - R156 is unsuitable for the nature of traffic projected to arise from the proposed development noting sections without foundations and requiring significant remedial works. It is

further contended that conflict with established users including local schools, agricultural, commercial and quarry traffic will give rise to congestion, inconvenience and potential hazard. I note that the Transport Infrastructure Ireland TII submission sets out requirements with regard to consultation and agreement with Public Private Partnership (PPP) companies, motorway maintenance and renewal contracts (MMaRC) contractors and local road authorities with regard to operational requirements.

8.7.2 Chapter 14 of the EIAR addresses traffic and sets out a detailed assessment of the road network for construction operation and decommissioning traffic including the turbine component haul route from the M3 Motorway to the west of Dunshaughlin. (Fig 14-1) It is noted that the delivery route for HGV construction traffic may vary depending on the location of quarries and suppliers used. It is envisaged that general construction traffic may travel to the site via the turbine delivery route, or via the M4/N4 and the R156 from the west or the N52 from the north. The assessment of the effects of traffic generated during the construction of the proposed development is considered in two stages. Stage 1 for site preparation and groundworks, turbine foundation development and stage 2 component delivery. Component delivery stage us likely to give rise to the most significant traffic impact due to slow speeds, size and geometric requirements of these vehicles and the provision of traffic management measures will be required to minimise the impact.

8.7.3 The assessment of the impact on the road network in the study area was undertaken for the various construction stages. Based on the assessment it is noted that .

- On the M3 Motorway the link capacity is forecast to operate at 59% for the no-nothing scenario, increasing to a maximum of 61% during the construction of the development.
- On the regional network the R154 is forecast to operate over capacity for the do nothing scenario at 152% increasing short term to a maximum of 164% for the 484 days on which general site works and construction is undertaken.

- From the R161 between Trim and Doolistown, background traffic flows are low with forecasts showing that this road will operate at 15% of capacity, increasing short term to a maximum of 35% during the 484 days for general site works and construction.
- The R156 is forecast to operate at 92% capacity for the do-nothing scenario, increasing to 112% short term for the 484 days on which general site works and construction is undertaken.

  While background link flows on sections of the regional road network on the delivery route are high, the forecast increases due to the construction of the proposed development are manageable and short term. In terms of actual effects on the road network and specifically on junctions the capacity of junction most affected the R161-R156 junction. The capacity of the junction was assessed using industry standard junction simulation software PICADY and results show that additional trips passing through the junction will have a slight effect falling within acceptable limits as set out by TII.

8.7.4 Regarding traffic management measures for abnormal loads these include identification of a delivery schedule, details of alterations required to infrastructure and a dry run of the route using vehicle of similar dimensions. Extensive route proofing and consultation with the roads authorities and An Garda Siochána and abnormal loads will be delivered during night time hours. Assessment of the abnormal load route (M3 R125 R154 to Trim and R161 and R156 Fig 14.1) included an assessment of turning requirements (swepth path analysis) of the abnormally sized loads or locations along the route. The swepth path analysis identified the need for some remedial /accommodating measures to include:

- M3 Junction 6/R125 Roundabout. Levelling and surfacing works to centre island of roundabout. Temporary removal of road signs.
- R125 / R154 roundabout. – Levelling and surfacing of centre island and traffic island at the north western exit onto the R154 arm of the roundabout. Temporary removal of road signs.
- R154 roundabout approaching Trim.

Strip of centre island and removal of temporary removal of signage

- R154 / R160 Roundabout bypass Trim. Temporary removal of street furniture planters and roads signs. Movement of telephone pole and road sign to the north and bollards on southern side temporarily.
- Double Bend on Patrick Street, Trim. Temporary road widening on north side of first bend, Lamp post and vegetation to be relocated. Lamp post at western bend and zebra crossing poles temporarily removed.
- R161 R 156 junction. – Surfacing of area of third party land on southern side of R156 required. 2 telegraph poles one sign post and road sign section of fence and hedgerow to be temporarily removed.
- Bridge over River Boyne. – Pruning of horizontal plane of various trees.
- Left hand bend on R156. Area of third party land required to negotiate abnormal loads. Road widening and temporary removal of telegraph pole trees vegetation and traffic signs,
- Right hand bend on R156. Narrow strip of road widening on north side of R156. Temporary removal of gate, telegraph poles trees vegetation and traffic signs.
- Site Access Junctions A and B on R156. Visibility splays. Design to accommodate swepth path analysis requirements of 76m blade transporter using temporary over run areas.
- Site access junction C (crossing point between Bracklyn and Liscloher bogs) on local road for construction traffic.

8.7.5 In terms of likely and significant effects and associated mitigation during the construction phase it is noted that during Construction stage 1 when concrete foundations are poured the effect on the surrounding network will be negative resulting in an increase in traffic levels ranging from 1.6% on the M3 to an increase of 64.4% on the R161 between Trim and Doolistown. The effect will be negative temporary and slight. During the remaining 484 days of construction stage 1 for the site preparation and ground works when deliveries to the site will take place, the effect on the surrounding road network will be negative resulting in an increase in

traffic levels ranging from 3.2% on the M3 to an increase of 133% on the R151 between Trim and Doolistown. While the percentage increase at this location is high, it is accentuated by the relatively low background traffic volume. The effect is negative short term and slight. During the 47 days of construction stage 2 when the abnormally sized component parts of the wind turbine plant are delivered by extended articulated HGVs the effect of the additional traffic on these days will be moderate due to the size of vehicles involved resulting in increased volumes between 0.6% on the M3 to 24% on the R151 between Trim and Doolistown, but will be temporary. The effect may be reduced to slight by nighttime delivery. Impacts will be negative and temporary. During the 26 days of the construction stage 2 when smaller sections of the blades and other smaller components for the turbines are delivered to the site by means of standard HGVs the additional traffic generated will result in a negative impact on the surrounding road network, increasing traffic levels ranging from 0.4% on the M3 to increase of 14.6% on the R161 between Trim and Doolistown. The effect will be negative and temporary.

8.7.6 Operational phase effects on the surrounding road network will be neutral and long term. Recreational and amenity proposals will give rise to small volumes of traffic (up to 40 car trips on a typical day and potentially 70 on weekends). No significant effects are anticipated on roads and traffic. Decommissioning phase will involve disassembly of turbine towers and equipment for recycling and waste disposal. It is proposed that turbine foundations hardstanding areas and access roads will be left in situ.

8.7.7 Regarding cumulative impact issues it is noted that the permitted Bracklyn Wind farm development delivery route is from the west via the N52 rather than from the M3 and the east for Ballivor. It is likely that routes used for general materials including sand and stone will ovelap during construction phases. If the two projects are constructed at the same time there will be a temporary and moderate level of cumulative impact. A slight potential for cumulative traffic effects with Yellow River Windfarm is also noted. Careful scheduling of deliveries will mitigate effects.

8.7.8 Mitigation measures are set out in detail at 14.1.9.6 of the EIS involving proposals for mitigation both in construction and operational stages. Design mitigation includes selection of most appropriate delivery route and construction of temporary improvements to local road network at specified locations. During construction stage significant coordination and planning will be put in place to minimise effects of additional traffic to include:

- Scheduling of construction program
- Use of material from borrow pits
- Delivery programme to be agreed with relevant authorities.
- Traffic Management Plan.
- Appointment of Traffic Management Co-ordinator.
- Delivery programme to be agreed with relevant authorities.
- Information to locals.
- Pre and post construction road condition survey.
- Reinstatement of road surfaces and boundaries to pre development condition.
- Liaison with relevant local authority during delivery phase.
- Implementation of temporary alterations to road network at critical junctions.
- Identification of delivery routes.
- Timing of delivery for large turbine components.
- Travel plan for construction workers.
- Improvements to vertical alignment of the R156 adjacent to access junctions A and B.
- Additional measures to minimise the effects of the development traffic on the surrounding road network, including wheel washing facilities and sweeping / cleaning of local roads as required.
- All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.

8.7.9 No mitigation measures are required for the operational stage. Improvements to the R156 and unnamed local road and the 3 amenity car parks will be of general benefit to traffic. A decommissioning plan, including a material recycling / disposal and traffic management plan, will be prepared for agreement with the local authority prior to decommissioning. Overall during the 24 month construction stage it is forecast that the additional traffic that will appear on the delivery route will have a slight, negative and temporary impact on existing road users which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan. No significant residual impacts during construction, operation or decommissioning are anticipated.

8.7.10 Having considered the details as submitted, I conclude that clearly inconvenience and other negative effects will inevitably arise particularly in terms of construction traffic having regard to the scale and nature of the proposed development. Such adverse effects, however, will be temporary and can be appropriately mitigated in accordance with the traffic management plan and construction and environment management plan. I am satisfied that the detailed measures in respect of traffic management and road safety as set out in the EIAR appropriately predict and mitigate negative effects arising. On this basis I consider that the proposed development is acceptable from a traffic and transport perspective.

8.8 Impact on Biodiversity.

8.8.1 The third party submissions raise concern with regard to potential negative effects on flora and fauna that the proposal will be disastrous to the local ecosystem and a significant disruption to wildlife particularly bird species. Chapter 6 of the EIAR deals with biodiversity and Chapter 7 Ornithology. The application is also accompanied by an NIS addressing the appropriate assessment of the proposal. The EIA and AA sections below address the impact on biodiversity in detail below. I am satisfied that

the information provided which includes comprehensive survey information enables review of the impact of the development on biodiversity.

8.8.2 Having considered to the information provided I am generally satisfied that the submitted information adequately addresses the potential impacts on biodiversity. Although the construction works could give rise to habitat loss, species disturbance and displacement, it is likely that species displaced during this phase would return to the site when the works are completed, subject to the implementation of mitigation measures. I am satisfied that the proposed development would not give rise to any additional significant adverse impacts on biodiversity, including birds and bats, as well as mammals using the site. The proposed development is to be carried out in conjunction with the rewetting of the surrounding peatland, enhancement and native woodland planting. I am satisfied that it has been demonstrated that restoration or rehabilitation is compatible with wind energy installations.

9.0 Environmental Impact Assessment

9.1 Statutory Provisions.

9.1.1 The European Union Directive 2014/52/EU, amending Directive 2011/92/EU, on the assessment of the effects of certain public and private projects on the environment, requires Member States to ensure that a competent authority carries out an appraisal of the environmental impacts of certain types of projects, as listed in the Directive, prior to development consent being given for the project. The EIA Directive was transposed into Irish law under the Planning and Development Regulations 2001 to 2018 (as amended). Part 1 of Schedule 5 of the 2001 Regulations, includes a list of projects for which mandatory EIA is required. Part 2 of Schedule 5 provides a list of projects where, if specified thresholds are exceeded, an EIA is also required.

9.1.2 This section of the report consists an Environmental Impact Assessment of the proposed development. The proposed development falls within the definition of a project under the EIA Directive as amended by Directive 2014/52 and falls within the scope of Class 3 (i) of Part 2 of the Fifth Schedule of the Planning and Development Regulations 2001, as amended: Energy Industry (i) ‘Installations for the harnessing of

wind power for energy production (wind farms) with more than 5 turbines or having a total output of greater than 5 megawatts' require EIA. The proposed development with a total of 26 no. turbines with an estimated installed capacity of 117MW-169MW with a maximum total rated output greater than 5 megawatts exceeds both the thresholds referred to in Class 3(i) and is therefore subject to mandatory EIA.

9.1.3 It is noted that the proposal also includes elements requiring EIA as set out in Schedule 5 of Part 2.

" 2. Extractive Industry (b) "Extraction of stone, gravel, sand or clay, where the area of extraction would be greater than 5 hectares."

The proposal includes borrow pits exceeding 5 hectares for the purpose of aggregate material.

"10 Infrastructure Projects

(dd) All private roads which would exceed 2000m in length".

The proposed development includes for 28 km of new internal tracks.

9.2 Compliance with legislation

9.2.1 The application falls within the scope of the amending 2015 EIA Directive (Directive 2014/52/EU). In terms of content and structure the EIAR, by MKO Planning and Environment Consultants, is set out in grouped format in 4 volumes as follows:

Volume 1a Non-Technical Summary and Main Report

Volume 1b Main Report

Volume 2 Appendix 13-4 Photomontage Booklet

Volume 2a EIAR Appendices 2.1-5.2

Volume 2b EIAR Appendices 6.1-6.6

Volume 2c EIAR Appendices 7.1-7.7

Volume 2d EIAR Appendices 8.1-14.3

Further information was submitted in response to third party observations which includes an additional Marsh Fritillary Report (Appendix 1), Winter Bird Survey Data Summary 2022-2023 (Appendix 2), Field Survey Data (Appendix 1-1) and updated Collision Risk Assessment (Appendix 3), Scoping Responses (Appendix 4) and Amenity Signage (Appendix 5).

In response to the Board's request for additional information further detail was submitted in relation to ornithology- collision risk for migrating Greenland white-fronted geese and impact on marsh fritillary breeding habitat.

9.2.2 The EIAR, as supplemented by details submitted by way of further information in response to observations and in response to further information request, provides a description of the project, comprising information on the site, design, size and other relevant features of the proposed development. It identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors: (a) population and human health ; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape and it considers the interaction between the factors referred to in points (a) to (d).

9.2.3 It provides an adequate description of forecasting methods and evidence used to identify and assess the significant effects on the environment. It also provides a description of measures envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects. The mitigation measures are presented in each chapter and are summarised in Chapter 17 of the EIAR. Where proposed, monitoring arrangements are also outlined. Chapter 15 of the EIAR provides a consideration of the effects deriving from the vulnerability of the project to risks of major accidents and or natural disasters. Any difficulties which were encountered in compiling the required information are set out under the respective environmental topics. A description of the main alternative studied by the developer and alternative layouts considered is provided and reasons set out for the preferred choice.

9.2.4 I am satisfied that the information provided in the EIAR and supplementary submissions in response to third party observations and to the Board's further

information request is generally up to date, adequately identifies and describes the direct and indirect and cumulative effects of the proposed development on the environment and complies with article 94 of the Planning and Development Regulations 2001, as amended.

9.2.5 I note the details of the project team members, their qualifications and experience provided at Section 1.8 of the EIAR. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality.

9.2.6 I am satisfied that the information provided is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment. I am also satisfied that the information contained in the EIAR complies with the provisions of Articles 3, 5 and Annex (IV) of EU Directive 2014/52/EU amending Directive 2011/92/EU and Article 94 of the Planning and Development Regulations 2001, as amended.

Section 94 (a) Information to be contained in an EIAR (Schedule 6, paragraph 1)	
A description of the proposed development comprising information on the site, design, size and other relevant features of the proposed development (including the additional information referred to under section 94(b).	A description of the proposed development is contained in Chapter 4 of the EIAR including details on the location, site, design and size of the development, arrangements for access and construction methodology, spoil and waste to be generated. In each technical chapter the EIAR details are provided on use of natural resources and the production of emissions and/or waste (where relevant).
A description of the likely significant effects on the environment of the proposed development (including the additional information referred to under section 94(b).	A description of the likely significant effects of the development on the environment is provided in the technical chapters, and associated documentation, of the EIAR. Technical chapters reflect the environmental parameters set out in Article 94.
A description of the features, if any, of the proposed development and the	The proposed development includes designed in mitigation measures and measures to address potential

measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment of the development (including the additional information referred to under section 94(b).	adverse effects identified in technical studies. These, and arrangements for monitoring, are summarised in Appendix 17.1 (Schedule of Mitigation and Monitoring Measures), Appendix 4.3 (CEMP) and Appendix 6.5 (Habitat Management Plan). Additional measures are outlined in further information submissions. Mitigation measures are largely capable of offsetting significant adverse effects identified in the EIAR.
A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment (including the additional information referred to under section 94(b).	A description of the alternatives considered is contained in Chapter 3 of the EIAR. The alternatives considered include, do nothing, alternative location, alternative renewable energy technology, alternative turbine numbers and model, alternative layout and design, alternative electricity substation locations and grid connection, alternative met mast location, alternative location for temporary infrastructure, alternative transport route and site access, alternative wind farm site boundary options and alternative mitigation measures. The main reasons for opting for the current proposal were based on minimising environmental effects. I am satisfied that the applicant has undertaken a study of reasonable alternatives in assessing the proposed development and has outlined the main reasons for opting for the current proposal before the Board and in doing so the applicant has taken into account the potential impacts on the environment.
Section 94(b) Additional information, relevant to the specific characteristics of the development and to the environmental features likely to be affected (Schedule 6, Paragraph 2).	
A description of the baseline environment and likely evolution in the absence of the development.	In each technical chapter the EIAR details are provided on the existing baseline environment and a 'do nothing' scenario is considered.
A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge)	The methodology employed in carrying out the EIA, including the forecasting methods is clearly set out, in each of the individual chapters assessing the environmental effects.

encountered compiling the required information, and the main uncertainties involved	The applicant has indicated in the different chapters where difficulties have been encountered (technical or otherwise) in compiling the information to carry out EIA. I am satisfied that forecasting methods are adequate.
A description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it.	This issue is specifically dealt with in Chapter 15 and in in addressing the project's vulnerability to flooding, aircraft loss/collision, water contamination, fire, major crowd safety and civil disorder, loss of critical infrastructure, lope failure, flooding and fire. Risks with regard to peat stability is addressed in Chapter 8. These risks are reasonable and are assessed in my report.
A summary of the information in non-technical language.	This information non-technical summary is provided within Volume I. I have read this document and I am satisfied that the document is concise and comprehensive and is written in a language that is easily understood by a lay member of the public.
Sources used for the description and the assessments used in the report	The sources used to inform the description and the assessment of the potential environmental impact are set out within each chapter. Concerns raised in respect of biodiversity, ornithology, landscape and visual effects, have been addressed within response to submissions and in the response to the Board's further information request. I consider the sources relied upon are generally appropriate and sufficient.
A list of the experts who contributed to the preparation of the report	The issue of various experts who contributed to the report is addressed within Chapter 1 and generally within the introductory section of each of the chapters with details of the individuals expertise and demonstrating the competence of the person in preparation of the individual chapters within the EIAR.

9.2.7 I have carried out an examination of the information presented by the applicant, including the EIAR and the submissions made during the course of the application. A summary of the submissions made by the prescribed bodies and observers, during the

course of the application have been set out in section 6.0 of this report. The main issues raised specific to EIA relate to:

Visual impact

Impact on Cultural Heritage

Residential Amenity impacts

Impact on biodiversity including impact on Marsh Fritillary Butterfly

Water Quality

These issues are addressed below under the relevant headings and as appropriate, in the reasoned conclusion and recommendation.

9.3 Consideration of Alternatives

9.3.1 Article 5(1)(d) of the 2014 EIA Directive requires: that an EIAR contain (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment." Chapter 3 of the EIAR addresses the matter of alternatives in terms of the "do nothing" option, alternative locations, alternative renewable electricity technologies, alternative project design options, alternative turbine numbers and model, alternative turbine layout and design, alternative electricity substation location and grid connection, alternative met mast locations, alternative locations for temporary infrastructure, alternative delivery routes and access options, alternative component delivery routes and alternative construction and operational options, alternative wind farm site boundary options and alternative mitigation measures.

9.3.2 In a 'do-nothing' scenario, the site would continue to be managed under the requirements of the IPC licence and ongoing site management, environmental monitoring, stock pile removal (to be completed in 2024) and wind measurement would continue and the implementation of the peatland rehabilitation plans would occur with PCAS Scheme in the adjacent bogs. These land uses and activities will also continue if the proposed development is to proceed however the opportunity to

capture a significant part of Meath / Westmeath's renewable energy resource would be missed as well as the opportunity to contribute to meeting the Government and EU 2030 targets for production and consumption of energy from renewables and reduction in greenhouse gases. The opportunity for generation of local employment, development contributions and the development of proposed access and car parks for amenity access would also be lost.

9.3.3 Regarding alternative locations the Bord na Móna landbank was examined and a technical review completed based on planning policy context, proximity to sensitive receptors, peat depths, suitable wind speeds, proximity to national electricity grid and proximity to designated sites and onsite environmental sensitivities. Ten sites were identified as having higher potential for wind energy development. Following site specific assessment with regard to factors including grid access/capacity, policy, proximity to houses environmental sensitivity landscape capacity and cumulative impact, aviation, land use, communications infrastructure, flood risk and supporting infrastructure, Ballivor was selected as a site with relatively low potential for environmental effects.

9.3.4 Regarding alternative renewable energy technologies, solar energy was considered and it was outlined would require significantly larger development footprint due to capacity factors with potential for higher environmental effect on hydrology and hydrogeology, traffic and transport and biodiversity. A comparison of the potential environmental effects is set out in table 3-4.

9.3.5 Regarding alternative project design options the use of smaller turbines would necessitate installation of 30-44 turbines thus a larger footprint and would not result in as efficient use of the wind resource. Increased infrastructure requirements and increased potential for negative environmental impacts on biodiversity, hydrology, traffic and transportation would also arise. Regarding alternative turbine layout and design, the approach has been a collaborative and iterative process. Turbine layout iterations have been based on constraints mapping to optimise site layout. Comparative environmental effects of previous design iterations are set out against

the proposed 26 turbine layout in Table 3-7. Alternative road layout, alternative substation locations and grid connection details and alternative met masts are detailed.

9.3.6 Regarding the alternative location for construction compounds, the use of multiple temporary construction compounds was deemed preferable for a number of reasons regarding efficiency of construction practices and shorter traffic movements. The use of construction phase on-site borrow pits as opposed to offsite quarries was deemed to be preferable particularly with regard to potential traffic, noise and dust emissions. Alternative access and delivery routes and site entrance options are set out. Windfarm site boundary was refined based on the refined project design. Regarding alternative mitigation it is outlined that mitigation by avoidance is the key aspect of the design process.

9.3.7 I note that some of the third party observers assert that the consideration of alternatives is inadequate citing particularly alternative renewable energy sources including solar and geothermal. Having reviewed and assessed the EIAR I consider that the process of site selection, consideration of alternative layouts, configurations and technologies followed a comprehensive process. It is clearly outlined how the proposed development evolved and how it was adjusted to take into consideration environmental effects. On balance I consider that the requirements in terms of reasonable alternatives have been satisfactorily discharged and the requirements of the EIA Directive in this regard have been met.

9.4 Vulnerability to risks of major accidents and/or disasters

Article 3(2) of the Directive requires a consideration of the vulnerability of the project to risks of major accidents and/or disaster that are relevant to the project concerned. This is addressed in chapter 15 of the EIAR and in Chapter 8 with regard to peat stability. Risk of flooding is deemed to be low. Six risks identified during the construction phase are identified including severe weather, flooding, peat stability, traffic incidents, contamination and industrial accident – fire. Operational risks considered include contamination- discharge of fuel, chemical solvents, sewage/wastewater, industrial

accident / fire, collapse /damage of structures, traffic incident and loss of critical infrastructure. Decommissioning phase risks are similar to construction phase including severe weather, flooding, traffic incidents, contamination and industrial accident – fire and loss of critical infrastructure.

The potential risk of peat instability during construction is minimised through careful design and the flat landscape and will be limited by adherence to best practice construction control measures. The risk is deemed very unlikely and will have limited consequences representing a low risk scenario. The risk of contamination during construction operation and decommissioning is unlikely having regard to mitigation measures as set out in the CEMP. The risk of industrial accident / fire is unlikely and would have limited consequences. The implementation of peatland rehabilitation under IPC and PCAS can reduce the potential fire risk due to rewetting measures. No potential for significant in combination or cumulative mitigation effects associated with the potential for impact by major accidents and or disasters. I consider that there are unlikely to be any significant effects deriving from major accidents and or disasters.

9.5 Likely Significant Effects on the Environment

9.5.1 This section of the EIA identifies, describes and assesses the potential direct indirect and cumulative effects of the project under each of the environmental factors referred to in Article 3(1) of the Directive as follows:

Population and Human Health

Biodiversity

Land, Soil

Water

Air and Climate

Noise and Vibration

Material Assets

Cultural Heritage

Landscape

Interactions of the Foregoing

9.6 Population and Human Health

9.6.1 Chapter 5 of the EIAR identifies describes and assesses the potential significant direct and indirect effects of the proposed development on population and human health, examining in particular employment, settlement and land use patterns, population and demographic trends, tourism and amenity and human health (health and safety and shadow flicker). The vulnerability of the project to the risk of major accidents and/or disasters is dealt with separately in chapter 15. Other environmental factors with the potential to impact on population and human health, such as air quality, noise, traffic and transport landscape and visual impacts soil and water are addressed in the respective relevant chapters of the EIAR.

9.6.2 In terms of the baseline environment the site is within a rural area with relatively low population numbers and densities. The study area (defined in terms of the 8 District Electoral Divisions within which the proposed windfarm is located) extending to 16,047km2 has a population of 4,841 persons in 2016 census. The closest dwelling to the proposed windfarm is located approximately 815m from the nearest proposed turbine. (T17)

9.6.3 In terms of employment it is estimated that during construction and decommissioning at peak construction between 100-120 jobs will be created with a knock on effect on the local economy through supply of services to the workforce. 2-3 jobs during the operational lifetime of the development and an estimated 20-30 jobs during decommissioning. Rates payments to Meath and Westmeath County Councils as well as approximately €14 million in community funding will be provided to the local area.

9.6.4 Regarding land use, the site comprises bare cutaway bog, revegetation of bare peat degraded blanket bog, scrub, low woodland, remnants of high bog and small area of conifer plantation. The predominant use in the wider area is agriculture with 253 farms within the 8 DVDs in the study area. The nearest village Ballivor 3.5km to the east with

further services in Delvin (5km NW) and Raharney (5km W). The nearest school is ‘Coolronan NS circa 1.5km southeast, while Scoil Columbain is circa 2.2km east.

9.6.5 As regards tourism and amenity, there are a number of notable tourist attractions within the area including Delvin Castle (2.8km North), Trim Medieval and Ecclesiastical Town c13km East Trim Castle Priory of St John the Baptist and Black Friary and Donore Castle. Reference is made to various studies and surveys carried out to assess the attitude of tourists to onshore wind farms with reference to Scottish Tourism Survey 2016 and Fáilte Ireland Survey 2007 and 2012. In the Scottish study the conclusion was that there is no relationship between the development of onshore windfarms and tourism employment and no detrimental effect on tourism. The Fáilte Ireland surveys indicate a generally positive disposition among tourists towards wind development in Ireland. Regarding public perceptions of wind energy SEAI surveys indicate an overall attitude to wind farms being “almost entirely positive.” A review of an IWEA study on wind energy 2021 found that local people become more favourable towards wind farms after construction, that the degree of acceptance increases with proximity to them and that NIMBY syndrome does not adequately explain variations in public attitudes due to the degree of subjectivity involved.

9.6.6 Regarding impact on property values, it is submitted that in the absence of Irish studies a number of studies from the United States and Scotland provide findings that wind farms did not impact on property values.

9.6.7 On the subject of health impact the potential for negative effects during the windfarm construction phase is noted and relates to emissions to air of dust, emissions to land or water of hydrocarbons, release of potentially silt laden runoff into watercourses and noise emissions. Residual impacts are not significant and will not lead to significant effects on any environmental media with the potential to lead to health effects for humans. On this basis the potential for negative health effects associated with the proposed development is imperceptible. Noting the offsetting of carbon emissions associated with burning of fossil fuels it is estimated that during operational stage the windfarm will have a long term moderate positive effect on air quality which will

contribute to positive effects on human health and assist in reaching emissions targets and renewable energy goals.

9.6.8 Regarding shadow flicker it is outlined that with the benefit of mitigation measures all turbines will comply with the adopted 2006 guideline threshold of 30 minutes per day or 30 hours per year. If the more stringent, revised guidelines (2019 draft) are adopted compliance can be achieved through the use of turbine control software. It is stated that there are a total of 217 sensitive receptors located within 10 rotor diameters (1.7km) of the proposed rubines. No dwellings are located within the 4 times tip height. Of the 217 no residential properties modelled, 71 properties experience shadow zero flicker while it is predicted that 146 properties may experience some daily shadow flicker. Based on the 2006 guidelines the daily threshold of over 30 minutes may potentially be exceeded at 80 properties. The annual threshold of over 30 hours for shadow flicker is predicted to be exceeded at 12 properties once the regional sunshine average factor of 30% has been considered. Predicted exceedances are considered conservative and in reality occurrence or duration is likely to be eliminated or reduced due to screening or window orientation.

9.6.9 Regarding cumulative shadow flicker, the consented Bracklyn windfarm is considered. The 2006 guidelines daily threshold of over 30 minutes shadow flicker may potentially be exceeded at 83 properties with three of these properties being impacted by Bracklyn Windfarm alone. The annual threshold of over 30 hours for shadow flicker is predicted to be exceed at 15 properties once the regional sunshine average factor has been considered with Bracklyn Windfarm alone causing exceedances at three of these properties.

9.6.10 In terms of shadow flicker mitigation measures it is proposed that where shadow flicker exceedance have been predicted at buildings by modelling software a site visit will be undertaken to determine the level of occurrence, existing screening and window orientation. Prediction data will be used to determine dates on which a shadow flicker event could be observed and conditions observed. Screening measures will be discussed with relevant owners and such measures implemented at

the developer's expense. The windfarm SCADA control system can be programmed to shut down any particular turbine to ensure that the windfarm is in line with the requirements of the guidelines.

9.6.11 In terms of the likely significant impacts, in the do nothing scenario the proposed development would not proceed and the site would continue to be managed under the relevant IPC licence and ongoing site management and environmental monitoring, peat stockpile removal and wind measurement would continue. Peatland rehabilitation plans as required under the IPC licence, and PCAS scheme in the adjacent bog would continue to be implemented. These land uses will also continue if the proposed development proceeds. The opportunity to capture part of a valuable renewable energy resource would be lost.

9.6.12 During the construction phase there will be a positive effect on employment levels and long term effect on investment in the local and wider region in terms of payment of commercial rates. There will be no significant effect on land use activities during the construction phase as the proposal has been designed to co-exist with peatland rehabilitation under IPC or PCAS. During the operational phase it is envisaged that 2-3 jobs will be created during this phase resulting in long term slight positive effect. Rates payments to the local authority, the community gain scheme and near neighbour scheme will be in the region of €14 million over the lifetime of the project. A long term positive effect is predicted. No significant effect on property values is predicted. As regards tourism impacts there would be a short term imperceptible impact on tourism in the wider landscape due to the construction phase and no significant effect on tourism in the wider landscape. A long term positive impact on tourism is predicted with regard to the social and recreational benefits associated with recreational amenity walkways/ paths to be provided as part of the development. It is asserted that the visibility of the turbines in the landscape will not have a significant effect on visitor experience to attractions in the wider landscape.

9.6.13 As regards land use patterns and activities, given the ability to co-exist with ongoing site activities in the landscape the proposed development will have no significant impact on other land uses within the site and wider area.

9.6.14 Regarding health and safety all construction, operation and decommissioning work is proposed in accordance with all relevant health and safety legislation and a detailed health and safety plan covering all aspects of the construction process will be drawn up and implemented and no residual impacts are anticipated. Dust and emissions from the construction phase will be mitigated through best practice mitigation measures and no significant indirect or indirect effects are predicted.

9.6.15 Regarding noise, I note that a detailed noise assessment is provided in Chapter 11 Noise and Vibration. Predicted noise levels during construction and decommissioning phase are not significant, are short term and are within recommended threshold values subject to proposed mitigation. Regarding operational phase the predicted residual operational turbine noise effects at the closest noise sensitive locations are noted to be ‘negative’ ‘moderate’ and ‘long term’ in nature. Regarding traffic and transport subject to implementation of the traffic management plan residual impact will be short term imperceptible negative.

Assessment of Population and Human Health Chapter

9.6.16 The main concerns arising in the observer submissions relate to impact on human health, shadow flicker, noise. residential amenity and potential impacts on property values and tourism. I note that there is no evidence that wind farms per se give rise to negative health outcomes. Whilst disturbance or potential nuisance arises particularly in terms of noise, dust or other disturbance impacts during the construction period these are temporary effects and can be appropriately mitigated by way of standard best practice construction methods. As regards operational impacts, I note that the applicant has outlined a commitment to ensuring compliance with recommended noise limit levels to protect residential amenity and human health. I am satisfied that should any effects relating to noise including in relation to low frequency noise, occur, that

mitigation measures set out in the application documents will ensure that there will be no adverse impacts on the local population.

9.6.17 As regards shadow flicker the modelling has suggested that 80 residential receptors may be impacted by shadow flicker. The applicant has outlined a mitigation strategy to ensure that the development complies with the thresholds set out in the 2006 DoEHLG Wind Energy Guidelines and if adopted the 2019 Draft Revised Wind Energy Development Guidelines through the curtailment of turbines using the wind farm SCADA system.

9.6.18 Regarding impact on property values, I note the observers questioning of the representativeness of the Scottish and American studies referenced within the EIAR. I note the lack of evidence with regard to potential adverse impact on property values. Of note the benefits arising to the local economy, the provision of community fund and near neighbour scheme and enhanced amenity facilities will provide infrastructure and facilities which could in fact enhance property values in the area. I note the separation distances involved and the nature and character of the landscape. I consider that based on my findings in relation to residual impact on residential and rural amenity it is reasonable to conclude that the proposed development will not be likely to result in a significant impact on property values in the area.

9.6.19 Regarding impacts on tourism assets I consider that the assessment has identified the potential impact on tourist attractions in the area and has demonstrated that the potential to affect tourism is low. While the visual presence of the proposed turbines will change the context of tourism attractions in the wider area, there is an acceptance that renewable energy infrastructure is a feature in the landscape and the impact on tourism is not significant.

9.6.20 Regarding cultural heritage monuments I note submissions with regard to potential impact, alone or in combination, on UNESCO World Heritage Royal Sites of Ireland World Heritage Tentative List. I note that Meath County Council recommended that the

Board seek advice from an independent world heritage expert with specific expertise in assessing world heritage site nominations on behalf of UNESCO to assess whether the proposed development could impact on ant future nomination. I have deliberated on this issue and concluded as set out at 8.5 above that as found within the EIAR LVIA given the distance of the proposed development from the Royal sites, location within peatland landscape deemed to be of relatively low sensitivity and highly suitable for wind energy development, set back from population centres and highly sensitive visual receptors, absorption capacity of the landscape and absence of obstruction of key sensitive features, the scale and form of the proposed development will not result in significant landscape and visual effects. Based on these considerations significant effect on setting or outstanding universal value does not occur.

9.6.21 I have considered all of the written submissions made in relation to population and human health. I consider that the proposed development will have significant positive impacts on the local socio-economic environment. I am also satisfied that the potential for significant adverse impacts on population and human health can be avoided, managed and mitigated by measures that form part of the proposed scheme, the proposed mitigation measures and through suitable conditions. I accept the conclusions of the EIAR that the residual impacts on population and human health, following the implementation of listed mitigation measures, are not significant in effect. I conclude that the proposed development would not have any unacceptable direct, indirect or cumulative significant effects on population and human health.

9.7 Biodiversity.

9.7.1 Chapter 6 of the EIAR assesses the likely significant effects of the proposed development, both alone and cumulatively on biodiversity and sets out measures to avoid reduce or offset the identified significant effects. The chapter addresses relevant legislation, sets out details of survey and assessment methodologies, describes baseline ecological conditions and receptor evaluation. A Natura Impact Statement was also submitted with the application and this is addressed in the Appropriate Assessment below.

9.7.2 The desk study includes a review of available data pertaining to the site and study area including NPWS Article 17 datasets, online web mappers (National Parks and Wildlife Service NPWS, Environmental Protection Agency EPA, Water Framework Directive WFD and Inland Fisheries Ireland IFI and National Biodiversity Data Centre NBDC), relevant plans and records. It is noted that Bord na Mona ecologist carried out detailed habitat surveys of the Ballivor Bog Group in 2011 and 2012 with follow up in subsequent years. Field surveys were carried out by the project ecologists between April 2020 and February 2023 and further updated surveys were submitted in response to the observer's submissions to March 2023. A comprehensive walkover of the entire site was completed and all habitats were classified in accordance with Fossit 2000.

9.7.3 The site does not overlap any designated site however it is within 412m of the River Boyne and Blackwater SAC, 3.4km to Mount Hevey Bog SAC and 10.4km to Girley (Drewstwon) Bog SAC. As regards Nationally Designated Areas Molerick Bog NHA 3.9km and Girley Bog NHA 10.3km and Royal Canal pNHA 3.3km and Lock Shesk pNHA 7km north. Regarding Annex I listed habitats, an area mapped as Active Raised Bog (7710) is present in an area of uncut raised bog at the southern extent of Bracklin Bog. This raised bog remnant is located approximately 722m from the nearest proposed windfarm infrastructure (access road) and approximately 944m from the nearest turbine T13. It is separated from the proposed development infrastructure by drained, cutover bog habitats. No impact is predicted arising from the proposed development.

9.7.4 An area mapped as Anex I Alkaline Fen (7230) Cladium fen (7210) and Transition Mire (7140) in the Article 17 Habitats dataset is present to the north of proposed turbine T18 and associated access road. The mapped habitats are located partially within the site boundary however at a distance of 180m and will not be impacted. An Area mapped as Annex I Old Oak Woodland 91AO is present at the south of the proposed development to the southwest of and >230m from infrastructure associated with T8. No impact is predicted.

9.7.5 As regards water quality EPA Q rating data for the Deel (Raharney), Stonyford and Boyne rivers shows that the Q status ranges from, “poor” to “good” status (most recent available data 2020). Regarding Water Framework Directive WFD the majority of surface water bodies in the vicinity and downstream of Ballivor Bog Group have been deemed to be “at Risk” of not meeting their WFD objectives. Hydro morphological changes (changes to physical habitat or natural functioning for example by channelisation and straightening of rivers or land drainage) have been deemed to be significant stressors on several of these surface water bodies. As regards groundwater body status the Athboy Groundwater Body underlies the Ballivor Bog Group and this has been assigned “Good Status” in both the 2010-2015 and 2013-2018 WFD monitoring rounds. The Athboy GWB is deemed to be “At Risk” of not meeting its WFD objectives however no significant pressures have been identified to be impacting on the groundwater body.

9.7.6 Regarding vascular plants no species listed under Annex II of the Habitats Directive or the Flora (Protection) Order are shown in the New Atlas of the British and Irish Flora. NPWS Protected Species Records show a number of rare and protected species records for hectads N55 N65 and N66 within which the site Is located. Regarding invasive species a number of high impact invasive species are noted.

National Biodiversity Data Centre records and NPWS Article 17 data also note records of Marsh Fritillary at the southern end of Bracklyn Bog.

9.7.7 Ecological Walkover Surveys were carried out between 2011 and 2012 and a habitat map produced for the entire Ballivor Bog Group. Between 2020 and 2023 project ecologists visited the site to verify habitat mapping and carry out detailed vegetation surveys. The Main Habitats and Flora within the site are detailed in Section 6.6. of the EIAR. The main body of the site with the exception of remnant sections of raised bog mainly along the peripheries of the site comprise cutover raised bog or cutaway peat classified as cutover Bog (PB4). Where peat cutting has ceased relatively recently on large areas of the site these areas are dominated by bare peat with little growth of vegetation. Where vegetation has begun to colonise relatively recently areas consist of mosaics of bare peat and pioneer open cutaway communities including ling heather

(Calluna vulgaris) dominated dry heath (HH1) vegetation and pioneer common cottongrass (Eriophorm angustifolium) dominated poor fen PF2 or a mosaic of both. Where peat production/ extraction has ceased for some time for example in much of Bracklin Bog as well as southern extent of Ballivor Bog and Lisclogher Bog, mosaics of well-established secondary dry heath and poor fen type communities as well as birch (Betula pubescens) dominated scrub (WS1) and dry bog woodland (WN7) are present.

9.7.8 A small number of areas of cutover bog within the study area particularly those in low lying areas with impeded drainage are relatively wet with some standing water and an abundant Sphagnum component in comparison to dried cutover habitats. These often occur in association with areas of standing water and poor fen and flush communities with abundant common cottongrass. Secondary habitats that have begun to form on cutover bog following cessation of peat extraction / milling include birch dominated bog woodland, (WN7), birch dominated scrub (WS1), Cutover bog supporting secondary dry heath (HH1) type communities. It is noted that the secondary cutover raised bog habitats within the site do not conform to Annex I heath habitats or Annex I raised bog habitats. Poor Fen (PF2) occurs within the site predominantly as pioneer poor fen vegetation with established poor fen and flush less common. Small areas of open water are present in low lying areas associated with poor fen and flush communities. Silt ponds which are present at various locations are classified as Other Artificial Lakes and Ponds (FL8) and drainage channels (FW4) which are extensive. The site is drained by a number of watercourses within and surrounding the site Lowland depositing streams (FW2).

Small areas of grassland habitats categorised as dry calcareous and neutral grassland (GS1) and Dry meadows and grassy verges (GS2) occur within the site along the sides of railway lines and existing track verges and in areas where underlying glacial till has been exposed.

9.7.9 Grassland Habitats: Improved agricultural grassland (GA1) and Wet grassland (GS4) occur within and adjacent to the site. An area classified as Amenity Grassland (GA2) is present at the northern extent of Ballivor Bog in the built area around Bord na Mona

buildings. Two small mineral islands located on Carranstown Bog and copse area at Bracklyn Bog are classified as oak ash hazel woodland (WN2). There are a number of areas of remnant uncut raised bog habitat classified as Raised Bog (PB1). While the proposal has been specifically designed to avoid areas of uncut raised bog approximately 1.03 hectares of highly degraded uncut raised bog is located within the construction footprint. Sections of proposed infrastructure for T13, T23 and T24 traverse areas of highly degraded, dry and fragmented remnant raised bog at Lisclogher Bog and Bracklin Bogs. The proposed floating access track linking Lisclogher East and Bracklin Bogs also traverse an area of degraded remnant raised bog surrounded by facebanks and cutover bare peat, while the temporary floating access road to Borrowpit No 2 to the south of Bracklin Bog will also travers an area of dry but uncut remnant raised bog.

9.7.10 The potential for the raised bog fragments within the site to conform to Annex I habitats Active Raised Bog (7110) and Degraded Raised bog still capable of Natural Regeneration (7120) was considered. It is noted that Article 17 Report (NPWS 2013) The status of EU Protected Habitats in Ireland, refers to Active Raised Bog as "characterised by the presence of an acrotelm, which is defined as the living, actively growing upper layer of a raised bog, the surface of which is composed mainly of living bog mosses (Sphagnum species)." Smith and Crowley 2020 reference previous raised bog research indicating that Active Raised Bog in the midlands generally supports cover of sphagnum greater than 40%, (Fernandez Valverde et al 2005. 2012.) It is noted that the raised bog remnants within the construction footprint lack a diverse or abundant Sphagnum component. Sphagnum cover was generally <10% or absent within these areas, with the exception of the raised bog remnant along the proposed temporary access track to Borrowpit 2 to the south of Bracklyn bog. Typical raised bog microtopography, including hummocks, bog pools and sphagnum lawns were absent from these habitats. The areas of remnant raised bog within the construction footprint given their highly degraded and fragmented nature and absence of typical raised bog micro topography do not conform to Annex I habitat Active Raised Bog (7110). It is noted that the 1.03 ha of uncut raised bog is made up of small marginal sections of this habitat within six separate fragments of highly degraded bog.

9.7.11 Small Areas of conifer plantation (WD4) are present within the northern extent of Ballivor bog. Access tracks within the site are classified as spoil and bare Ground (ED2) and recolonising bare ground (ED3). Areas classified as buildings and artificial surfaces (BL3) include that railway infrastructure, local roads, and storage buildings. Treeline and Hedgerow (WL2 and WL2) habitats make up a small proportion of the habitats within the site as well as areas of land take for proposed haul route. The haul route also includes areas of improved agricultural grassaland, (GA1) and Hedgerow (WL1).

9.7.12 Regarding fauna, a badger sett was recorded at Carranstown Bog with an outlier sett to the northeast. It is proposed that a pre-construction survey of development footprint and adjacent areas will be carried out to include the use of camera traps. No otter resting or breeding sites were recorded within the site during dedicated otter surveys. Otter spraints were recorded in proximity to a drainage ditch in Lisclogher Bog and otter prints at Liscloher Bog. It is outlined that the majority of drainage ditches within the site are small and therefore not suitable for otter given their size, extensive modified channels and low fisheries value however some of the larger drains may be used for foraging and commuting.

9.7.13 I note that a bat survey report is provided as Appendix 6-2 of the EIAR. With regard to foraging and commuting bats the area of cutover bog, dry heath poor fen spoil and bare ground and grassland habitats were considered to have low suitability but isolated habitat could be used by small number of foraging or commuting bats, scrub, bog woodland, oak ash hazel woodland, conifer forestry edge habitats, lowland depositing streams drainage ditches and artificial lakes/ ponds were assessed as having moderate potential for commuting or foraging. The majority of the trees within the site do not provide optimal habitat for roosting bats and were assessed as having negligible-low roosting potential. Structures within the site were assessed as having negligible low roosting potential. Field surveys carried out in 2020 and 2022 and bat conservation records of bat activities and roosts noted no record of roosts within 1km of the site. Six bat species were recorded within a 10km radius of the site common pipistrelle, leisler’s bat, brown ear bat, soprano pipistrelle, daubintons bat and

natterer's bat and some instances of myotis bat. Review of range maps presented in the 2019 Article 17 reports (NPWS 2019) noted the site is outside the current range for lesser horseshoe bat, nathusius pipistrelle, natterer's bat and whiskered bat, and is within range of all other species.

9.7.14 In manual transect surveys undertaken in spring summer and autumn 2022 bat activity was recorded on all surveys. A total of 108 bat passes were recorded. Common pipistrelle was most frequent(n=96) followed by Leisler's bat (n=8) and soprano pipistrelle (n=4). Low activity was recorded across the site. In ground level static surveys a total of 44,101 bat passes were recorded across all deployments during 2022. Common pipistrelle occurred most frequently (n=24,670) and soprano pipistrelle (n=11,871 and Leisler's bat (n=6,711). Instances of Myotis app (n=645) brown long-eared bat (n=192) were significantly less and Nathusius pipistrelle (n=12) were rare. Bats as an ecological receptor are assigned local importance (higher value) on basis that the habitats within the study area are utilised by a regularly occurring bat population of local importance. Collision risk assessment was determined as low risk for local population Leisler's Bat, Natusius pipistrelle, soprano pipistrelle. With regard to local population of common pipistrelle collision risk is low in spring and autumn and medium risk is assigned in summer.

9.7.15 Regarding loss or damage to commuting and foraging habitat no net loss of commuting or foraging habitats is anticipated. Vegetative connectivity is to be retained and replanting options are proposed. Best practice mitigation measures are set out to reduce potential for effects. The overall risk levels for high collision risk bat species was typically low or medium with the exception of common pipistrelle which had a high risk level for summer at peak activity levels. Taking a precautionary approach an adaptive monitoring and mitigation strategy has been devised and no significant effect is anticipated.

9.7.16 As regards fisheries and aquatic fauna the majority of watercourses draining the site are of local importance (higher value) in terms of their aquatic ecology. The Stonyford River, River Deel and River Boyne all located downstream of the site provide suitable

habitat for a range of aquatic species including salmonids, freshwater crayfish and European eel. The majority of watercourses within the site itself comprise artificial drains with a poor structure and silty substrate. While they provide some suitability for lamprey, only low densities of lamprey were recorded during electrofishing surveys.

9.7.17 During multi-disciplinary walkover surveys signs of mammal species were recorded including fox, hare, pine marten, deer and pygmy shrew. Other species likely to occur such as wood mouse, stoat and mink. Common lizard, common frog, hare, pine marten assessed as of local importance (higher value). Due to the scale of the site and considerable presence of vegetation woodland and scrub cover in the wider locality these are not likely to be significantly affected by the proposed development.

9.7.18 Table 6.10 sets out key ecological receptors and assigns them an ecological importance in accordance with the Guidelines for Assessment of Ecological Impacts of National Roads Scheme (NRA 2009). Key Ecological Receptors (KER's) in and around the site include designated sites, rivers and streams, aquatic and fisheries species, uncut raised bog, drainage ditches, rivers and streams, aquatic and fisheries species, uncut raised bog, cutover bog and associated secondary habitats, bog woodland, oak-ash-hazel woodland and pioneering scrub, poor fen, heath type communities, otter, badger and bats. Whilst Marsh Fritillary was initially excluded as a key environmental receptor this decision was revisited and subsequently the Marsh Fritillary included as a Key Environmental Receptor in the first party response to the observers submissions and specifically the report by Jesmond Harding, butterfly expert, including surveys carried out in May 2023. Further information was also submitted in response to the Board's request for additional information in relation to potential impact on marsh fritillary.

9.7.19 Regarding likely significant impact on designated Natura 2000 sites, these are assessed under Section on Appropriate Assessment below. Regarding the following pNHAs Trim pNHA, Boyne Woods pNHA, Crewbane Marsh pNHA, Rossnaree Riverbank pNHA, Dowth Wetland pNHA, Boyne River Islands pNHA and Boyne Coast and Estuary pNHA, a pathway for indirect effects arises from run-off of pollutants

during construction operation and decommissioning. Best practice pollution methods are designed to ensure no potential for impact on water quality within and downstream of the proposed development site.

9.7.20 In terms of construction phase impacts potential impacts on habitats include direct habitat loss within the development footprint and indirect deterioration of aquatic habitats due to deterioration of water quality. The proposal will result in the loss of habitats of local importance, predominantly cutover peatland habitats including bare peat and mosaics of establishing dry heath, pioneer poor fen and scrub. There will be small scale loss of birch dominated dry bog woodland, small areas of highly degraded, dry remnant uncut raised bog and sections of hedgerow with scattered trees. I note regarding the proposed loss of a small area of oak ash hazel woodland on a mineral island at Carranstown Bog which would arise due to the proposal to excavate a borrow pit for material for the construction of the road network, the NPWS is opposed to this on the basis that the loss of spontaneous oak ash hazel woodland, characteristically of high biodiversity, could not be effectively compensated or only within a considerable timeframe. On this basis in the event of permission and in order to preserve woodland biodiversity a condition requiring that this area of oak ash hazel woodland be retained is recommended. I consider that this is appropriate.

9.7.21 The potential for deterioration of river habitats due to runoff of pollutants during construction and operational phase is considered. The construction footprint has been designed to avoid the main watercourses within the site with a 50m buffer between the main windfarm infrastructure and natural watercourses (with the exception of upgrades to watercourse crossings and existing site access tracks). Culverts will be provided on artificial drains throughout the site for the proposed turbine access roads and a culvert on the Bolandstown Stream where a bottomless clear span culvert is proposed.

9.7.22 Taking a precautionary approach there is potential for a temporary significant negative effect on water quality of the watercourses within and downstream of the site during construction with potential to cause degradation of habitat for aquatic receptors. It is noted that the artificial drainage ditches and small streams do not provide optimal

habitat for fisheries and other aquatic fauna and no instream works are proposed of the Bolandstown Stream. Therefore there will be no direct loss of supporting habitat for fisheries or aquatic fauna. Mitigation measures to ensure no significant effect on water quality or aquatic receptors within and downstream include the use of interceptor drains and collector drains to collect and intercept runoff from construction areas, temporary settlement ponds to attenuate and treat run-off, the use of silt fences between works and watercourses and dewatering silt bags to remove silt from pumped waters. Existing drainage system which is operating in line with IPC licence requirements will be maintained and expanded locally. Following implementation of mitigation no residual effect on aquatic habitats or species is predicted.

9.7.23 Regarding potential effect on uncut raised bog the construction of the proposed windfarm and associated infrastructure will result in the permanent loss of approximately 1.03hectares of highly degraded, heavily drained and/or fragmented uncut raised bog habitat. These areas of bog are assigned local importance (higher value). The loss of this habitat is associated with construction of T23 and T24 hardstand areas and access tracks at the northern end of Lisclogher East Bog, the construction of the access track between Lisclogher East and Bracklin Bog and construction of T13 hardstand and access track at Bracklin Bog. Temporary loss of this habitat arises to facilitate floating access road to proposed borrow pit 2 south of Bracklin Bog. The access road will be floated over an existing drain traversing the uncut bog habitat and area fully reinstated on completion of works. The potential for indirect effect on raised bog habitat immediately adjoining the construction footprint through drainage is also noted.

9.7.24 The total area of uncut remnant bog within the site is 317.1ha and the loss of 1.03ha represents approximately 0.3% of the total area of this habitat. Bog remnants involved are small, fragmented and surrounded by cutover bog with no potential for re-wetting and/or are heavily drained. They are extremely dry in nature and dominated either exclusively or predominantly by ling heather with little to no sphagnum cover. The loss of 1.03 hectares is a permanent and irreversible negative impact on this habitat of local importance (higher value). The magnitude of this impact is slight as it only affects

a small percentage of the overall habitat within the site and avoids the largest undrained wetter areas of this habitat. Phasing of the proposed development is designed to minimise the loss of uncut raised bog within the site. A habitat management and enhancement plan has been prepared providing for the ecological enhancement of approximately 12ha of uncut but drained raised bog at the northern extent of Bracklin Bog through drain blocking and rewetting to promote the development of wetland vegetation. No significant residual negative effect on raised bog habitat is predicted.

9.7.25 Regarding potential effect on revegetated cutover bogs habitats and associated woodland the proposal will result in direct loss of approximately 32.8hectares (1.9% of the total habitat within the site) of revegetated cutover bog which is developing as a mosaic of pioneer poor fen, dry heath type vegetation communities, scrub and bog woodland. Approximately 1.0 ha of this will be dry birch dominated bog woodland habitat the loss which results from proposed construction of turbine handstands, access tracks and other associated infrastructure. Based on the minimum 50m buffer to all habitat species used by bats as recommended in NatureScot Guidance, an additional 1.5ha of bog woodland is to be felled. Total woodland to be lost amounts to 2.78ha representing 2.2% of overall area of woodland within the site boundary. As noted above the loss of approximately .28 ha of oak ash hazel woodland on mineral island at Carranstown Bog to facilitate construction of borrow pit has been opposed by the NPWS and its retention can be addressed by way of condition. Tree felling will be under licence and replanting of area equivalent area within the site boundary is proposed. Indirect effects on cutover bog habitats resulting from drainage are also possible.

9.7.26 The loss of cutover bog habitats is a permanent and irreversible impact on peatland habitats of local importance (Higher Value). The magnitude is deemed to be slight as it represents a small percentage of cutover peatland habitat. No significant drainage related impacts are anticipated. The habitat management and enhancement plan provides for the setting aside of an area of approximately 6.5ha in size for replanting

with native birch and willow woodland and an area of approximately 1.5ha in size for the planting of oak ash hazel woodland.

9.7.27 Regarding potential effects of treelines and hedgerows the proposal will result in the removal of approximately 315m of hedgerow habitat with scattered small ash trees as well as approximately 60m of conifer treeline. The magnitude is assessed as a permanent slight negative impact at local scale as hedgerow and tree line habitat is widespread in the wider landscape. Mitigation will include replanting of same length of tree line and hedgerow and removal of vegetation to be undertaken in line with The Wildlife Act 1976. Approximately 8ha is set aside for native woodland within the development site boundary.

9.7.28 Regarding effects on fauna during construction potential for habitat loss and destruction on faunal species recorded on the site is noted. Given the extensive area of cutover bog which will remain undisturbed and the avoidance as far as possible of faunal habitat of significance significant effects are not anticipated. No significant habitat for salmonids, lamprey, coarse fish, white clawed crayfish, European Eel, aquatic invertebrates or other aquatic species were recorded within the footprint of the proposed development and with the exception of the crossing of the Bolandscatown stream all major infrastructure is located more than 50m from main watercourses within the site. The potential for significant effects on aquatic species is restricted predominantly to indirect effects on their habitat resulting from water pollution in addition to the potential for direct loss of small areas of supporting habitat as a result of the culvert within the Bolandstown Stream.

9.7.29 Regarding impact on Badger there will be direct loss of a single entrance badger sett at the location of the proposed substation at Carranstown Bog. This single entrance is located approximately 190m to the north of the main sett and is considered an outlier sett. Best practice mitigation measures will be incorporated and no significant negative impacts are anticipated. A pre-construction survey of the development footprint and adjacent areas will be carried out to include the use of camera traps.

9.7.30 Regarding otter there is potential for indirect impact on otter habitat in the form of water pollution from runoff during construction activities. Based on the absence of significant suitable habitat for otter within the site there is no potential for significant effects on otter as a result of disturbance during construction activities. Following mitigation there will be no residual effect.

9.7.31 Regarding impact on bats taking a precautionary approach in the absence of mitigation there is no potential for significant effects on bats on any geographical scale as a result of loss of roosting, foraging or commuting habitats or as a result of disturbance or displacement. Given the small area of suitable habitat to be lost relative to the area of suitable habitat in the wider landscape and given standard best practice measures to be implemented during construction there is no potential for significant effects on bat species.

9.7.32 No invasive species were recorded within or adjacent to the site during ecology surveys. Best practice biosecurity measures will be in place during construction to avoid the introduction of invasive species.

9.7.33 Regarding operational impacts on habitat no potential for significant effect are identified, The proposed development has the potential to result in enhancement of the surrounding peatland habitats through habitat rehabilitation measures. Significant effects on water quality are not anticipated. No potential for significant effect on fauna during operation as there is no additional habitat loss or degradation. Regarding potential effects on bats the assessment of collision risk and barotrauma is set out with additional detail in Appendix 6.2. The overall risk assessment for high collision risk species was determined in accordance with NatureScot guidance. The collision risk for local populations of the high risk species Leisler's bat, Nathusius pipistrelle and soprano pipistrelle was low for both spring, summer and autumn. Collision risk for common pipistrelle was low in spring and autumn and there is a medium collision risk in summer. In the absence of mitigation there is potential for significant effect on local

bat populations of high collision risk species in particular common pipistrelle as a result of collision and barotrauma. Mitigation measures include provision of a minimum 50m buffer to all habitat features used by bats (buffering). Assessment of buffer mitigation to form part of post construction monitoring and updated as necessary. Blade feathering will be implemented in accordance with NIEA guidelines. An adaptive monitoring and mitigation strategy will be implemented (Including 3 years post construction monitoring to assess the effects of construction related habitat modification on bat activity. Taking into consideration the design of the project and best practice adaptive mitigation measures outlined significant residual effects on bats with regard to collision mortality are not anticipated.

9.7.34 Regarding the decommissioning phase there will be no additional habitat loss associated with the decommissioning of the proposed development and therefore no significant effects. The same suite of mitigation measures will be employed to ensure the protection of water quality during the decommissioning stage.

9.7.35 The proposal was considered in combination with other plans and projects in the area that could result in cumulative impacts on European sites, nationally designated sites and protected species. Peatland restoration measures within the site will not be significantly affected by the proposed development. It is noted that PCAS peatland restoration measures at Carranstown East was completed in 2022 and Bracklin West was selected and intended to commence in 2023. No potential pathways for significant negative cumulative impacts on biodiversity when considered in combination were identified. Regarding wind energy projects no potential pathways for significant negative cumulative impacts on biodiversity were identified when considered in combination. The potential for the development to contribute to cumulative effect on water quality is assessed. The implementation of mitigation measures to minimise any water pollution or hydrological effects ensures that there is no potential for significant cumulative effects on any downstream receptors whether considered ion its own or in combination.

Assessment of biodiversity chapter.

9.7.36 I consider that the potential impacts of the proposed development on the biodiversity of the site have been comprehensively assessed in the application. The surveys and assessments have been carried out in accordance with best practice and by competent experts. I consider that the nature and scope of the surveys is robust, proportionate and reasonable.

9.7.37 I consider that it has been demonstrated that the impact of the development on habitats and species on the site have been largely reduced by avoidance and design. The construction of the proposed windfarm will result in small scale loss of a number of habitats of local importance (higher value) comprising predominantly cutover bog habitats. The proposal has been designed to avoid the vast majority of uncut remnant raised bog though there will be a loss of a 1.03ha of highly degraded uncut habitat across 6 fragments of degraded remnants of the habitat. The proposed loss of a small area 0.28ha of oak-ash-hazel woodland can be excluded by condition. A habitat management and enhancement plan allows for rewetting and enhancement of approximately 12ha of drained remnant uncut raised bog at the northern extent of Bracklin Bog, and planting of c6.5ha of native woodland within the site which is a significantly positive outcome. No potential for significant effects on faunal species were identified. Watercourses within the site do not provide optimal fisheries habitat or optimal habitat for otter and no otter breeding or resting sites were identified within the proposed development site. No instream works are proposed within natural watercourses. The site provides suitable habitat for badger and a badger set was recorded in close proximity to proposed infrastructure at Carranstown bog. Best practice measures are set out to ensure no significant effect. I note that the Department of Housing Local Government and Heritage recommends that pre-construction survey of the development footprint be carried out following best practice during winter when vegetation which might conceal setts will be at its lowest. No significant effect on surface water quality, ground water quality or the hydrological / hydrogeological regime were identified and therefore no significant effects on rivers streams and sensitive aquatic faunal species.

9.7.38 Regarding bat species I am satisfied that the EIAR and Appendix 6.2 provide a thorough understanding of the bat species and has provided a comprehensive range of mitigation and monitoring measures to reduce potential impacts on bats. I accept that based on the design and best practice adaptive mitigation measures as outlined significant residual effects on bats with regard to collision mortality will not arise. Mitigation measures include use of minimal lighting, use of directional lighting to avoid lighting of ecologically sensitive areas and avoidance of long term LED lighting.

9.7.40 Regarding Marsh Fritillary Butterfly, the only Irish insect Annex II listed species, (Categorised as inadequate status in Department of Culture Heritage and Gaeltacht. The Status of EU Protected Habitats and Species in Ireland 2019), I note the submissions of Mr Jesmond Harding, Butterfly Expert, on behalf of DRB Community Company Limited which raised concerns with regard to the 490sq.m inititially identified as "potential habitat" which is located within the proposed development footprint. (T13 -T14). The submission of Mr Harding set out the possibility that during the survey work, larval webs were missed owing to the timing and time constrained nature of the survey. It was outlined that based on the recording of 18 adults on the site on the 29th May, a wider spatial distribution and greater quantity of larval webs would be expected. It was suggested that additional survey works was required to assess the matter. Regarding classification of this area as "potential breeding habitat" rather than "likely breeding habitat" and the characterisation of its loss as "slight in nature", this was disputed. Marsh Fritillary often breeds in discrete areas of a site containing suitable and potentially suitable habitat for reasons that are not evident. Therefore removal of part of this habitat might remove the population. It was further submitted that no evidence has been provided that 'suitable habitat is abundant in the wider landscape' and this is not supported by the surveys. It is noted that most areas of cutover bog contain vegetation characteristic of acid soils and is unsuitable for Devil's-bit scabious. The farmland adjoining the bog is mostly intensively managed with evidence of fertilizer and herbicide application resulting in improved grassland for livestock grazing and silage containing no habitat for marsh fritillary. The feasibility of promotion of further areas of suitable habitat within the development site where avoidance of impacts to established habitat is preferable is questionable. Sequencing is also concerning. If work destroys habitat before potential compensating habitat

develops it is likely there will be no remaining Marsh Fritillary population to occupy any new habitat. On this basis it was argued that the design should be applied to avoid any loss of habitat. The Board issued a request for additional information inviting the applicant to address the concerns raised with regard to the potential for significant negative effects on the Marsh Fritillary Annex II species.

8.6.41 In response on this issue, the applicant submitted a revised the Marsh Fritillary report including additional survey detail and an updated impact assessment based on amalgamated survey information. It is noted that over the course of the numerous surveys no larval webs, caterpillars, adult marsh fritillary or eggs were ground within the construction footprint. On a precautionary basis areas previously identified as providing potential suitable marsh fritillary habitat were extended. Regarding the potential 0.049 area, now deemed likely breeding habitat which is within the development footprint, mitigation measures are outlined to ensure no loss of habitat. Measures include updated surveys to be carried out prior to commencement of development, fencing of suitable habitat with heras fencing, modified construction methodology to ensure no encroachment and the establishment of suitable buffer zones under supervision of a suitably qualified ecologist. A marsh fritillary management plan is proposed to enhance and promote further areas of suitable habitat. I consider that based on the information provided the applicant has provided an adequate assessment of the potential impact on Marsh fritillary and has set out appropriate mitigation measures to address impacts arising.

9.7.39 I have had regard to the various submissions received in respect of the application raising concerns in respect to biodiversity, I consider that the information provided in the planning application documents is sufficient to allow the impacts of the proposed development to be assessed. Significant impacts are not anticipated. I am satisfied that the impacts identified on biodiversity would largely be avoided, managed or mitigated by the measures forming part of the proposed scheme. I consider that the potential for impact on Marsh Fritillary habitat and potential for disturbance /direct mortality impact has been assessed and appropriately mitigated. The marsh fritillary management plan will enhance and promote creation of further areas of suitable

habitat. I am, therefore, satisfied that the proposed development would not have any direct, indirect or cumulative significant effects on the biodiversity of the site or the area surrounding the site.

9.8 Ornithology.

9.8.1 Chapter 7 of the EIAR sets out the relevant information and assessment with respect to ornithology. The chapter sets out the legislative and policy context and provides details of consultation with statutory and non statutory organisations. A precautionary screening approach was taken with regard to the identification of key ornithological receptors . Field surveys undertaken between April 2020 and September 2022 form the core dataset for assessment of effects on ornithology while supplementary survey work was undertaken between October 2019 and March 2020. The core surveys sought to monitor flight activity on the study area to within a 500m radius of the proposed turbines. In addition breeding walkover surveys, breeding raptor surveys, breeding woodcock surveys, barn owl surveys, winter walkover surveys, waterbird distribution and abundance surveys, connectivitiy vantage point surveys, hen harrier roost surveys, wintering golden plover surveys were caried out and detailed. Supplementary surveys between October and March 2020 included VP surveys, winter walkover surveys, whooper swan surveys,

9.8.2 Ornithological evaluation criteria and impact assessment methodology is clearly set out. The potential impacts arising from the proposed development on birds relates to

Direct habitat loss, disturbance / displacement and death through collision. For each risk the effects are assessed with regard to the construction phase, the operational phase and the decommissioning phase. Cumulative assessment with other projects is also presented. Collision risk is calculated using mathematical model to predict the numbers of individual numbers of a particular species that may be killed by collision with moving wind turbine rotor blades. The ‘Band Model’ as recommended by NatureScot Guidance is used.

9.8.3 Seven SPAs are located within 15km of the proposed windfarm. A comprehensive list of bird species recorded during field surveys is provided in Table 2 of Appendix 7-1. Determination of population importance of birds within the likely zone of influence is provided. Table 7-11 of the EIAR outlines the rationale for including or excluding each target species as a key species of importance in terms of its sensitivity. Based on this rationale one species considered to be of

Very high sensitivity was :

- Kingfisher.

High Sensitivity species include:

- Hen Harrier.

Medium sensitivity species include:

- Golden Plover
- Merlin
- Peregrine
- Whooper Swan
- Barn Owl
- Kestrel
- Lapwing
- Snipe
- Woodcock

Low sensitivity species include:

- Buzzard
- Long-eared Owl
- Sparrowhawk

9.8.4 In terms of potential effects the potential impact on key ontotheological receptors

Potential Effects					
	Construction Phase		Operational Phase		
	Habitat Loss	Displacement & Barrier Effect	Habitat Loss	Displacement & Barrier Effect	Collision
Golden Plover Not dependent on windfarm site for foraging during wintering period Not regularly recorded utilising habitats within the site boundary	Very Low effect	Low Effect	None	Low	Low

Hen Harrier -Wintering No confirmed roosting sites within the site or within 2km Infrequent recording of foraging or commuting	Low Effect	Low	None	Low	Very low
Kingfisher Observed within the site on two occasions. Limited to watercourses and drainage ditches. 50m buffer for development footprint.	Low significance	Low	None	Negligible	None
Merlin Recorded on 30 occasions between April 2020-Sept 2022.	Low effect	Low	Low	Low	Very low
Whooper Swan Wintering. No observations of roosting. Six observations of birds landing within the site during April 2020-Sept2022. Species not dependent on the windfarm site for foraging or roosting	Low effect	Low	None	Low	Low
Barn Owl One breeding site within the site and one within 3.5km. Irregular foraging	Low	Low	None	Low	None
Kestrel 3 confirmed and 4 probable breeding territories identified. Up to 8 kestrel territory within the windfarm site.	Potential for short term moderate negative effect on availability of nesting habitat during construction.	Low	None	Low	Low
Lapwing (Breeding) Commuting birds observed over the site and adjacent. Roosting observed.	Low	Low	None	Low	Low
Lapwing (Wintering) Commuting birds over the site. No observations of roosting or foraging.	Very low	Low	None	Low	Low
Snipe Regularly recorded. 19 breeding territories identified 2020 6 within or partially within the site. 2022 10 breeding territories 9 within or partially within the windfarm site.	Low	Low	None	Low	Low
Woodcock Breeding Recorded regularly	Low	Low	None	Low	None

Breeding within the site. 6 breeding territories identified at or within 500m 2020,14 in 2021& 11in2022					
Buzzard Frequently recorded during breeding and winter seasons. One probable breeding territory partially within the windfarm site during2020 breeding season, 2 during 2021 and 2 during 2022. No confirmed breeding territories.	Lack of suitable breeding habitat within the site, Direct loss of foraging habitat to footprint of windfarm will be minimal Very low	Very low Abundance of suitable habitat	None	Very low	Very low
Long Eared Owl Infrequent recordings. Nest site 160m from nearest turbine. Foraging and commuting within the site	Small footprint relative to total area Habitat suboptimal for foraging Very low	Abundance of suitable habitat Very low	None	Very Low	None
Sparrowhawk Frequently recorded during breeding and winter. One confirmed breeding territory 2020 4 probable breeding territories 2021 and 3 probable 2022.	No significant loss of foraging habitat. Loss of nesting habitat not unique to site or rare in wider surroundings. Very low	Very low.	None	Very Low	Low
Effects of Key Ornithological receptors during decommissioning.					
Direct Habitat Loss	No direct effects anticipated	Significance - No effect			
Disturbance	As per construction phase for species listed above	As per construction phase for species listed above			

9.8.4 With regard to the effects associated with the turbine delivery route accommodating works etc., the majority of habitats are of low ecological value and works minor. No potential for significant habitat loss or displacement of key ornithological receptors arises. The effects on Natura 2000 sites is addressed in the Appropriate Assessment section below.

9.8.5 Mitigation and best practice measures are set out in some detail at Section 7.7 of the EIAR. These include mitigation by design including avoidance of wildlife refuge sites (e.g. waterbodies) and minimising hardstanding areas. Construction, operation and decommissioning phase mitigation measures are set out including disturbance limitation measures. A suite of mitigation measures are set out in the CEMP to minimise construction impacts including works outside of the bird nesting season, noise control measures, hours of operation, water protection measures, buffer zones. An Ecological Clerk of Works will be appointed to oversee all works and oversee management of ornithological and ecological issues. No operational phase impacts requiring mitigation were identified however monitoring in line with best practice is proposed. During decommissioning phase disturbance limitation measures as per construction phase are proposed. In terms of compensation best practice measures these include replacement kestrel nest boxes at a ratio of 5:1 to compensate loss of kestrel nesting habitat and ten barn owl nest boxes.

9.8.6 As regards cumulative effects plans considered included the Meath County Development Plan 2021-2027, Westmeath County Development Plan 2021-2027 and National Biodiversity Action Plan 2017-2021. Projects considered including PCAS Scheme, and other wind farm developments within 25km of the site. (Seven windfarms (70 existing/permitted turbines and 54 proposed/pending turbines) were identified within 24km radius. Regarding Bracklyn Wind farm c515m from the nearest proposed turbines, shared key ornithological receptors include hen harrier, woodcock, golden plover, lapwing, snipe, kestrel, barn owl, whooper swan, merlin, peregrine, buzzard and sparrowhawk. With regard to Milltown Pass Windfarm, Yellow River windfarm, Ballydermot Windfarm, Cushaling / Cloncant wind farm, given the location, nature of habitats and lack of residual impacts on bird species significant cumulative or in combination effects on key ornithological receptors are not anticipated. The assessment of cumulative effects on key ornithological receptors is provided in Table 7-13. Cumulative habitat loss, displacement and collision risk associated with operational turbines is assessed. No residual additive antagonistic or synergistic effects with regard to habitat loss, displacement or collision mortality were identified. Therefore it is asserted that cumulative impacts on ornithology can be ruled out.

Assessment of Ornithology Chapter

9.8.7 The EIAR and appendices sets out extensive survey data in respect of bird population within and surrounding the site and further information submitted during the course of the application to the Board. A detailed analysis is provided of the significance of bird species recorded within the study area noting in particular species of importance at various levels (national, county, local, higher value). The potential impacts of the proposed development on each of the key environmental receptor species with regard to habitat loss, disturbance and displacement and collision risk was assessed during construction and operational phase and at decommissioning phase is addressed. The identification of key ornithological receptors and assessment of effects follows a precautionary approach. The methodology is clearly set out and is based on detailed and systematic assessment. It is concluded that no adverse impact would arise as a result of the proposed development. The implementation of mitigation will render any potential effects on avian receptors to low significance. The cumulative impacts is also assessed with other existing and proposed windfarms within a 25km radius and it is reasonably concluded, on the basis of the assessment carried out, that the impact would be negligible.

9.8.8 I note the concerns raised in the submission by Meath County Council and observers with regard to the location of T21 in the flightline of an incidental Kingfisher sighting. It was asserted in the response by the first party that Kingfisher was observed only on two occasions within 500m of the site throughout the survey period and also not at collision height and is therefore deemed to be an infrequent visitor. The effect on kingfisher was deemed to be no greater than low effect significance. (Percival 2003).

9.8.9 I note the submissions of the Department of Housing Government and Heritage setting out a recommendation for radar surveys of nocturnal migrants to enable assessment of collision risk with reference specifically to Whooper Swan and Greenland White fronted Goose. The applicant in response noted the inability of radar to differentiate these species from several other species of migratory / wintering swans and geese occurring in Ireland. It was outlined that NatureScot (2017) recommends use of radar to assess sites where there is likely to be high nocturnal activity of

important species, especially if an SPA qualifying species are potentially affected. The applicant notes that submitted surveys demonstrate no evidence of high levels of nocturnal activity. Whooper swan was recorded roosting at dusk on local water bodies and based on observations it was assumed that once on the roost the birds did not undertake further nocturnal flights. Whooper Swans recorded during surveys were local winter residents not found to be connected to the SPA. Greenland white fronted goose were not present locally throughout the surveying. An estimation of nocturnal activity based on percentage increase of flight activity during VP survey was applied in the assessment of collision risk analysis whereby no significant risk was predicted for either whooper swan or greenland white fronted goose.

9.8.10 I note that the Department of Housing Local Government and Heritage in response to first party submission accepted the assertion that based on survey work carried out that it is unlikely because of their identified commuting routes that Whooper Swans frequenting roost sites within the general vicinity of the proposed wind farm site would be significantly affected by collisions. The Department maintained concern regarding risks to birds on migration in the operational phase. Reference was made to research undertaken by the University of Saskatoon which involved tracking individual Greenland white fronted geese from their wintering feeding grounds in Wexford which indicated that some of the tagged birds came within 8km of the proposed development site and a smaller number within a 6km buffer zone around the site and possibly flying though the development footprint. Further to this issue the Board sought additional information to include a more thorough analysis, based if possible on additional survey using radar or other techniques, of the potential for night migrants especially greenland white fronted geese colliding with wind farm turbines and how the possibility of such collisions might be reduced.

9.8.11In response the first party provided a detailed analysis of the University of Saskatoon study[12] and set out the following conclusions:

No significant collision risk arises in migratory greenland white fronted geese flying between the Wexford slobs and Iceland having regard to :

[12] Shindler et al 2024

- Altitude at which tagged geese were flying (in excess of 10 times the height of the proposed turbines)
- Survey evidence over c25 days a month during the migratory season did not detect Greenland white fronted geese- this is reasonably explained by the high altitude i.e beyond the key focus of VP surveys.
- Literature review shows that many species of birds including waterbirds such as swans and geese fly at high altitudes when migrating.
- Acknowledging the caution recommended regarding altitude data, it is reasonable to assume, even following the application of caution, collision risk does not arise, given the altitude and margin of error.
- Limited proportion of tagged geese that crossed the proposed development as evidence of both Saskatoon study and similar satellite tracking study in the late 1990s.[13]
- No particular landscape features on or near site likely to attract geese.
- Having regard to width of turbine envelope relative to width of migrating corridor.

9.8.12I consider that based on the evidence submitted the conclusion that greenland white fronted geese are not at significant collision risk in relation to the operational period has been reasonably made. Having considered the detail of all submissions received by the Board in respect of this application, the information provided in the planning documents, EIAR and further information responses, I am satisfied that the impacts identified on avifauna have been fully assessed and that with the implementation of mitigation measures and best practice measures as outlined negative impacts are appropriately avoided managed and mitigated by the measures forming part of the proposed scheme. I am satisfied that the proposed development would not have any direct, indirect or cumulative significant adverse effects on the bird population within and surrounding the site.

[13] Fox et al 2003

9.9 Land Soils and Geology

9.9.1 The potential impacts of the proposed development on lands, soils and the geological environment are assessed in Chapter 8 of the EIAR. The assessment methodology is clearly set out involving desk study, baseline monitoring and site investigation, geological mapping and a detailed walkover survey of the site undertaken on various dates between May 2020 and January 2022. Geotechnical ground investigations included peat probing investigations, trial pits and boreholes. The existing environment is described in detail including review of land use over the site, soils and subsoils. A total of 457 peat probes were completed across the site at all key infrastructure locations and along access tracks. Shear vane analysis was carried out at proposed turbine locations to determine peat stability. A total of 102 trial pits were completed across the site at each of the 26 no proposed turbine locations and other key infrastructure locations. A total of 16 no cable percussion boreholes and 5 no rotary boreholes were also completed at key infrastructure locations.

9.9.2 Bedrock underlying the site is dinantian pure unbedded limestones of the waulsortian limestone formation, dinantian upper impure limestone of the tober colleen formation and the lucan formation and dinantian lower impure limestones of the ballysteen formation. Depth to bedrock at the site is expected to be in excess of 11m. There are no licensed waste facilities or dump sites in the site or immediate environs. The closest EPA mapped waste facility is Annaskinnan landfill located approximately 5.6km southwest of the stie. A number of Industrial Emission Licensing (IEL) facilities and Integrated Pollution Control (IPC) facilities are located in the area. An IPC license was granted to Bord na Mona energy on 28/04/2000 for the extraction of peat at Ballivor Bog. There are no geological heritage sites at or near the site the closest such site being Ballycor Mushroom Rocks (Site Code WH001) located approximately 7.3km to the west of the site.

9.9.3 In terms of the peat stability assessment an analysis of peat stability was carried out at the 26 no turbine locations, substation compound, 4 no construction compounds and 2 no meteorological masts for both the undrained and drained conditions to determine the factor of safety of peat slopes. The findings show that the site has an acceptable

margin of safety and is suitable for the proposed development and is at low risk of peat failure. A series of control measures for construction in peatlands is set out to ensure that all works adhere to an acceptable standard of safety.

9.9.4 The main characteristics of the proposed development that could affect local soils and geological environment are set out in detail at 8.4. Summary volumes of material to be excavated, peat and spoil placement /reinstatement areas are provided in table 8.14 and 8.15. In terms of likely significant effects, in the do nothing scenario the decommissioning and rehabilitation plan including PCAS scheme would proceed. The main potential effects on soils and geology would occur during the construction phase. The proposal with a total development footprint of 32.4ha will result in the loss of approximately 26.59ha of peat bogs and 5.81ha of agricultural land (associated with proposed borrow pit 2 to the south of Bracklin Bog). Due to the relatively small footprint of the proposed infrastructure no significant effect on land or soils will occur.

9.9.5 Excavation of peat and subsoil will be required for the construction works. In total it is estimated that 732,000m^3 of material (550,400m^3 of peat and 180,730m^3 of non peat subsoils) will be excavated during the construction phase. There is no loss of peat or subsoil as it will be relocated within the site. Minor haul route works will have minimal impact on soils and subsoils. Design measures incorporated within the project include the avoidance of deeper peat areas such as bog remnants and areas on the boundary. The small development footprint combined with the medium and low importance of the deposits means that residual effect is not significant. Accidental contamination of soil by leakages and spillages of hydrocarbons during refuelling and operation of construction plant will be mitigated by way of best practice and effective mitigation measures. Erosion of exposed subsoil and peat during construction of infrastructure is also considered as a potential adverse impact. A series of mitigation measures are designed to counteract this including implementation of a peat and spoil management plan, minimising distance of movement of material, reseeding and planting.

9.9.6 In relation to peat instability and failure the peat stability assessment finds that the site has an acceptable margin of safety and is a low risk of peat failure. Regarding piling works the potential for peat /subsoil compaction and displacement is considered and no significant effects are predicted. Approximately 28km of internal roads and 3.3km of dedicated amenity pathways will be provided as part of the proposed development. Subject to implementation of mitigation no significant effects on peat soils/subsoils or bedrock will occur.

9.9.7 Regarding operational phase potential direct and indirect effects include potential hydrocarbon spillage as a result of maintenance of turbines and use of granular material for maintenance of roads. Proven and effective mitigation measures will be used to minimise potential adverse effect. The potential effects associated with decommissioning will be similar to those associated with the construction phase.

9.9.8 Regarding cumulative effects significant effects on lands soils sand geology are unlikely to arise, predominantly due to the localised nature of construction works and small construction footprint. It is envisaged that the decommissioning and rehabilitation plans for the Ballivor bog group and PCAS schemes will coincide with the construction of the proposed development. The peat bog land loss 2% of the wider Ballivor Bog group associated with the proposed development is considered to be negligible.

Assessment of the Land and Soils Chapter

9.9.9 The EIAR assesses the likely significant effects that the proposed development may have on land, soils and geology. The existing topography is relatively flat and the geotechnical and peat stability assessment demonstrates an acceptable margin of safety. Recognised control measures are set out in the peat stability assessment to manage all risks associated with peat instability. It has been demonstrated that no significant impact on lands, peat and soils and underlying bedrock geology will occur during construction operation or decommissioning phases of the proposed development. I consider that the information provided in the EIAR and application is

sufficient to allow the proposed development to be fully assessed. I am satisfied that the impacts identified on lands, soils and geology would be avoided managed or mitigated by the measures outlined in the EIAR. I am satisfied that the proposed development would not have any direct indirect or cumulative significant effects on land soils and geological environment.

9.10 Hydrology and Hydrogeology

9.10.1 Chapter 9 of the EIAR sets out an assessment of the potential effects of the proposed development on the hydrological and hydrogeological environment Scoping and consultation details are outlined and legislation and relevant guidance noted. The methodology involved desk study and baseline monitoring and site investigations including hydrological walkover surveys, with detailed drainage mapping carried out between May 2020 and February 2023. Hydrological monitoring included flow monitoring, field hydrochemistry and grab sampling.

9.10.2 The surface of the site is drained by a network of drains typically spaced every 15m - 20m. Larger arterial drains connect the smaller field drains and gently slope towards the perimeter silt ponds and surface water outfalls which discharge in turn to local stream and river network. Drainage of the site and wider Ballivor Bog Group is operating under IPC licence from EPA (P-0501-01). 9 no silt ponds are located within the site boundaries. A flow diagram of the existing drainage system is shown in figure 9-7 and drainage maps for each individual bog Ballivor, Carranstown and Bracklin and Lisclogher are shown in Figures 9-8, 9-9, 9-10 and 9-11 respectively. Detailed hydrological audit and flow paths from each bog to its eventual discharge point at regional catchment scale is set out. A long term water balance assessment and surface water runoff assessment for baseline conditions is set out.

9.10.3 A flood risk assessment FRA is provided in Appendix 9-1. No recurring flood incidents or incidents of historical flooding were identified within the site in historic or OPW flood mapping. Local Authority Strategic Flood Risk Assessment mapping indicates areas in

the northwest of Lisclogher Bog are vulnerable to fluvial flooding and mapped within Flood Zone A however site walkovers revealed that this section of the mapped watercourse does not exist therefore indicating that SRFA flood maps are incorrect. On this basis it is set out that the actual flood risk in this area is zone C. Based on CFRAM mapping the risk of fluvial flooding along the Ballivor River to the east of the site backing up into the site drainage is very low. The main risk of flooding is via pluvial flooding. The existing drainage network has reduced the risk however during prolonged rainfall events localised surface water ponding is likely to occur in places. Site infrastructure will be raised above existing ground level by 1m to ensure negligible pluvial flooding risk.

9.10.4 Regarding surface water quality biological Q rating data for EPA monitoring points on the Stonyford, Deel, Ballivor and Boyne rivers in the vicinity and downstream of the site range from 'Poor' to 'Good' in the 2020 WFD monitoring round. Regarding Hydrogeology the majority of the bedrock geology underlying the site is mapped as the Dinantian Pure Unbedded Limestones of the Waulsortian Limestone Formation and the Dinantian Upper Impure Limestones of the Lucan Formation, classified as a locally important aquifer -bedrock which is moderately productive only in local zones.(LI) The Tober Colleen Formation which is mapped to underlie sections of Lisclogher Bog and Bracklin Bog is classified as a poor aquifer – bedrock which is generally unproductive except for local zones. (PI). The 4 bogs are underlain by the Athboy Groundwater Body (GWB) which is characterised by poorly productive bedrock. Due to the presence of the peat and low permeability of the underlying mineral subsoil deposits local groundwater recharge will be minimal. The vulnerability rating of the bedrock aquifer is classified as "moderate" to "low". Regarding WFD Waterbody Status the Athboy GWB which underlies the Ballivor Bog Group has been assigned good status in all 3 WFD cycles. The draft 3rd cycle Boyne catchment report lists states that the Athboy GWB is "at risk" of not meeting its WF objectives and is under significant pressure from agricultural activities. Regarding surface water body status the majority of surface water bodies in the vicinity and downstream have been deemed "at risk" of not meeting their WFD objectives. Agriculture has been identified as a significant pressure. River basins management plan states that a number of surface water bodies in the vicinity of the proposed site (Deel and Boyne) have been

subject to excessive modification due to the presence of drainage schemes. In addition dams barriers locks and weirs were identified as a pressure on the Stonyford. The 3rd cycle draft Boyne catchment report lists peat (peat drainage and extraction as a significant pressure on the 13 no river waterbodies within the Boyne catchment. This is a reduction from 18 waterbodies in the 2ndWFD cycle. There are 12 surface water bodies within the Boyne catchment identified as drinking water protection areas (DWPA). The Stonyford in the vicinity of the site is listed in Article 7 Abstraction for Drinking Water. Downstream of Trim the Boyne River is also a DWPA. There is one mapped public water supply scheme within 3km of the site and the source protection area is more than 2km form the boundary of the site. Assumptions were made for the purpose of assessment that all private dwellings in the area has a well supply.

9.10.5 Given the nature of the windfarm development, effects on groundwater are generally negligible and surface water is the main sensitive receptor. As piling works are proposed for foundations the underlying groundwater aquifer is identified as a sensitive receptor. The primary potential contamination downstream surface waters is via elevated concentrations of suspended solids and nutrient enrichment. The local surface waters downstream of the site including the Deel, Stonyford and Boyne Rivers are considered to be of extremely high importance due to their designation as part of the River Boyne and River Blackwater SAC/SPA. Downstream drinking water areas including the Stonyford River and the River Boyne and Blackwater SAC/SPA are also included in impact assessment.

9.10.6 Regarding likely significant effects during the construction phase, excavation activities give rise to potential sediment laden waters, drainage and seepage water from excavations, sediment release from stockpiled excavated material, erosion of sediment from emplaced site drainage channels. These activities can result in release of suspended solids to surface water resulting in increased sediment load and in increased turbidity which could affect water quality of downstream water bodies. Potential effects on all watercourses downstream could be significant if left unmitigated.

9.10.7The key mitigation measures include the avoidance of sensitive aquatic areas by application of suitable buffer zones. All key development areas are located away from the delineated 50m watercourse buffer zones except for the upgrading of existing watercourse crossings, new drain crossings and upgrade to existing site access track. The proposed development drainage system will link into the existing bog drainage system and discharge from each of the bog sites via existing large settlement ponds. The system will be maintained and expanded locally as required with improvements to water treatment elements such as inline controls and treatment systems including wind farm related silt traps and settlement ponds. Detailed mitigation by design measures include filtration treatment systems, silt fences, silt bags, adverse weather management, management of runoff from peat and subsoil storage areas, timing of site construction works, drainage and water quality management. It is asserted that proven and effective measures to mitigate the release of sediment will ensure no significant effects on surface water quality will occur.

9.10.8 Regarding effects on groundwater levels during excavation works based on separation distances between proposed works and wells and streams and rivers and the relatively shallow nature of the proposed works and prevailing geology of the proposed site the potential for water level drawdown impacts at receptor locations are considered negligible. Regarding excavation, dewatering measures including interceptor drainage, pumping of excavation inflows, discharge via sediment attenuation ponds / specialist treatment systems to mitigate potential effects on surface water. No direct discharge to the existing bog drainage network is proposed. Daily monitoring of excavations and water treatment system is proposed during the construction phase. Potential threat to groundwater quality from piled foundations in terms of the creation of a pathway for upward migration of alkaline groundwater to the peat surface will not arise due to the prevailing ground conditions. Mitigation measures ensure the potential pathways for interaction of shallow (acidic peat water) and deeper (alkaline) groundwater are prevented. Due to the small footprint of the pile clusters and spacing between turbine bases the potential for blocking of regional groundwater flow is imperceptible. No significant effects on the Athboy GWB will occur and no significant effects on peat water hydrochemistry from proposed piling works.

9.10.9 Measures to mitigate potential release of hydrocarbons, release of cement based products and risk to surface water and groundwater quality break the pathway between potential source and receptor. Risk to surface water from wastewater disposal is mitigated by way of proven and effective measures. Regarding effects on local groundwater well supplies, BP2 is located adjacent to an existing borrow pit. No significant groundwater effects have been reported in respect of this borrow pit. All other wells are located a sufficient distance from the proposed development to be affected by any of the proposed works. Regarding potential effects on surface water drinking supplies having regard to mitigation measures no significant effects on designated drinking water protection areas are envisaged. No significant effects on surface groundwater quality arising from proposed amenity links. Proven and effective measures to mitigate risks to surface water and groundwater arising from turbine delivery route works.

9.10.10 The site is located in the River Boyne regional catchment and the River Blackwater SAC and SPA is located immediately downstream and is hydrologically linked with the proposed site. Proven and effective measures to mitigate the risk of surface and ground water contamination are proposed to break the pathway between potential source and downstream receptor. No significant effects on designated sites, WFD groundwater bodies and surface water bodies status, risk or future objectives are envisaged.

9.10.11 Regarding the operational phase, the main impact on the water regime relates to the increase in hardstanding areas thereby increasing surface water runoff. New proposed drainage measures will create additional attenuation ensuring a reduction in the overall runoff coefficient of the bog. No significant effects on downstream floodrisk arises. Mitigation measures are designed to ensure no deterioration in water quality. A groundwater well is proposed adjacent to the substation. No effects on local groundwater levels are predicted. Regarding effluent a sealed underground holding tank for effluent from the substation building will be routinely emptied by a licensed contractor. Decommissioning phase is likely to give rise to the same impacts as are associated with the construction phase, but of a reduced magnitude.

9.10.12 In terms of cumulative effects, private peat cutting, agriculture commercial forestry, one off housing, decommissioning and rehabilitation and consented Bracklyn Wind farm are considered. No significant cumulative impacts are anticipated.

Assessment of Water Quality Chapter.

9.10.13 The EIAR outlines detailed mitigation measures to protect surface water during construction, operational and decommissioning phases. Surface water drainage measures, pollution control and other preventative measures have been incorporated into the design to minimise significant impact on water quality and downstream designated sites. A 50m buffer zone from streams and lakes was incorporated into the design. No direct discharge to watercourses or bog drainage network is proposed. Other preventative measures include fuel and concrete management and waste management plan to be incorporated into the CEMP. I am satisfied that the impacts identified can be avoided management and mitigated. Subject to the implementation of mitigation measures as set out and to appropriate monitoring, I consider that it has been demonstrated that the proposed development will not have unacceptable direct, indirect or cumulative impacts on surface water or groundwater in the area. I consider that the information provided in the application documentation is sufficient to allow the impacts of the proposed development to be fully assessed.

9.11 Air and Climate

9.11.1 Chapter 10 of the EIAR sets out to describe and assess the potential significant direct indirect effects on air quality and climate arising from the construction, operation and decommissioning of the proposed Ballivor windfarm. Relevant guidance, legislation and air quality standards are detailed. The site lies within Zone D, of the Air Quality Zones for Ireland as designated by the EPA, which represents rural areas. (These zones were defined to meet the criteria for air quality monitoring assessment and management described in the CAFE Directive 2008/50/EC and daughter directives.)

9.11.2 Details of baseline air quality based on EPA 2021 data with regard to Sulphur dioxide (SO2) Particulate Matter (PM10) Nitrogen Dioxide (NO2), Carbon Monoxide (CO) and Ozone (O3) is reviewed. Monitoring for dust deposition during peat extraction from 2000-2020 had been undertaken as a requirement of the IPC licence for the Ballivor Bog Group. AERs indicate no exceedances of dust emission limit value and no complaints from sensitive receptors in relation to dust emissions.

9.11.3 Regarding sensitive receptors, there are 5 no high sensitivity residential properties within 100m of the proposed development footprint and 23 high sensitivity residential properties within 350m of the development footprint where potential to generate dust can occur.

9.11.4 The main emissions during construction phase relate to exhaust emissions from construction vehicles and plant and transport vehicles and dust emissions. A Construction and Environmental Management Plan is to be in place throughout the construction phase. Due to the isolated nature of the site and screening afforded by vegetation no significant effects on air quality are considered from exhaust emissions and dust during the construction phase.

9.11.5 Regarding operational phase exhaust emissions and dust associated with maintenance vehicles and members of the public availing of the amenity paths are not considered to give rise to significant impacts on air quality. The generation of electricity will result in emissions savings of carbon dioxide (Co2) oxides of nitrogen (NOx) and sulphur Dioxide (SO2). The production of renewable energy will have long terms significant positive impact on air quality due to offsetting approximately 6,035,010 tonnes and 8.717.237 tonnes of carbon dioxide (CO2) per annum. Decommissioning phase effects will be similar to the construction phase however will be a temporary negative effect on local air quality. Based on the assessment there will be a long term moderate positive indirect effect on air quality.

9.11.6 As regards climate, international legislation and policy with regard to greenhouse gas emissions targets are noted include: The Kyoto Protocol and Doha amendment, COP 21 Paris Agreement, COP 25 Climate Change Conference, COP 27 Climate Change Conference Sharm El Sheikh, United National Sustainable Development Summit 2022, European Green Deal – European Climate Law 2021, Intergovernmental Panel on Climate Change, Climate Change Performance Index, Climate Action and Low Carbon Development (Amendment) Act 2021 and climate Action Plan 2023. The methodology for calculating carbon losses and savings from the proposed development is set out at Section 10.3.7. The methodology assesses the effect of the proposed wind farm in terms of potential carbon losses and savings taking into account peat removal, drainage and operation of wind farm. Based on the calculations 384,030 tonnes of CO2 will be lost to the atmosphere due to changes in the peat environments, changes in the cycling of gas fired generation units and due to the construction, operation and decommissioning of the proposed development. This represents a fraction of the estimated 6,035,010 tonnes and 8,717,237 tonnes of Carbon Dioxide (CO2) (Against EU FFC) that will be offset by the operational phase. The volume of CO2 that will be lost to the atmosphere during the construction phase will be offset by the proposed development between 1.17 and 2.37 years of operation depending on the fuel source to which it is compared. In relation to the % loss of carbon sequestration arising from the construction of the windfarm this is estimated to be in the range between 2.9% and 7.7% and therefore does not have a significant impact on the carbon balance of the site.

9.11.7 Regarding cumulative assessment of impact on air quality and climate existing/permitted windfarms in particular the Bracklyn Wind Farm and the Peatland Rehabilitation Plans and PCAS are considered. No construction phase cumulative effects on air quality are climate are envisaged should consented plans and project proceed in parallel with the proposed development. Regarding operational phase the residual impacts are deemed to be positive in terms of carbon savings. Peatland rehabilitation plans will aid in restoring the carbon store function and promote the carbon sink potential of the land.

Assessment of the Air and Climate Chapter.

9.11.8 I consider that the information provided in the EIAR with regard to air and climate is sufficient to allow the impacts of the proposed development to be fully assessed. With regard to the methodology for calculating carbon losses and savings which is informed by the Scottish Government's carbon calculator and other relevant information including recognised studies from the Irish peatland context, I consider that the methodology applied is robust and reasonable. I am satisfied that the impacts identified in respect of air and climate would be avoided, managed or mitigated by measures forming part of the proposed scheme and I am, therefore, satisfied that the proposed development would not have any unacceptable direct or indirect impacts on air quality or climate. The provision of the Ballivor windfarm development will contribute to the national renewable energy supply and this will have a positive environmental effect in reducing reliance on fossil fuels. Significant cumulative positive effects on greenhouse gas emissions and on climate goals arise.

9.12 Noise and Vibration.

9.12.1 Chapter 11 of the EIAR describes the potential noise and vibration impacts associated with the proposed development. It is noted that there are 272 noise sensitive locations within 3.5km of the proposed turbine locations. The nearest noise sensitive location to the northern cluster is H057 which is 815m from T17 and the nearest to the southern cluster is H179 being 825m from T03. Bracklyn Wind Farm is included in the cumulative assessment. The assessment methodology is set out based on a review of relevant guidance, a characterisation of the receiving environment including baseline noise survey information, predictive calculations with regard to construction phase and operational phase and an evaluation of potential noise and vibration impacts and effects, mitigation measures and residual noise and vibration effects.

9.12.2 For construction phase noise and in the absence of specific noise limits, reference is made to British Standard 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise. For traffic related noise interpretation reference is made to UK Highways Agency Design Manual for Roads and Bridges (DMRB) Sustainability and Environment Appraisal LA 111 Noise and

Vibration Revision 2 (UKHA 2020). In relation to vibration standards reference is made to BS7835 Evaluation and measurement for vibration in buildings – Part 2 Guide to damage levels from ground borne vibration (1993) and BS 5228 – Code of Practice for noise and vibration control on construction and open sites – Part 2 Vibration (2009+A1:2014) as well as TII document Guidelines for the Treatment of Noise and Vibration for National Road Schemes 2004.

9.12.3 In relation to operational phase noise reference is made to Wind Energy Development Guidelines 2006, and the Department of Trade and Industry (UK) Energy Technology Support Unit (ETSU) publication "The Assessment and Rating of Noise from Wind Farms" 1996. In relation to the Draft Revised Wind Energy Development Guidelines 2019, it is noted that these were not relied on and it is noted that a number of concerns have been raised by acousticians regarding technical errors, ambiguities and inconsistencies within the draft guidelines. Details of characteristics of wind turbine noise are outlined with reference to Infrasound / Low Frequency Noise and Amplitude Modulation. Research with regard to health effects on people from exposure to wind turbine noise is reviewed.

9.12.4 In relation to background noise assessment, details of seven noise measurement locations are provided. Significant noise sources were noted to be distant traffic movements, activity in and around residences, wind generated noise arising from local foliage and typical anthropogenic sources found typically in rural locations. There were no perceptible sources of vibration at any of the survey locations.

9.12.5 Summary data is provided at Table 11.5.1.8 in terms of the various derived LA90 (10 mins) for each of the monitoring locations for daytime quiet periods and night time periods. The background noise data is used to derive appropriate noise limits for each of the noise sensitive locations where measurements took place. At all remaining locations, a background noise envelope based on the lowest average levels across the various locations at each wind speed is used and considered separately for daytime and night time.

9.12.6 In terms of predicting likely significant effects arising during construction phase works for turbine hardstands and meteorological mast are at a significant distance from the nearest noise sensitive receptor (H057 815m from T17 in northern cluster) and H179 827m from T03) in southern cluster. The nearest noise sensitive location to met mast is H057 which is 429m from proposed met mast 1. No significant noise impact associated with construction of turbines hardstanding and met masts is predicted. Closest noise sensitive receptor to a proposed substation is H238 - 570m to the northwest. A worst case example predicts potential noise levels from construction activities associated with the substation to be in the order of 50dBALAeq at H238, and 54dBA LAeq with regard to grid connection. Regarding internal road construction and road widening works whilst the closest noise sensitive location to accommodating works at the junction between the R156 and R161 is approximately 25m from the work area, and a further two noise sensitive locations within 50-100m. At 25m distance predicted noise levels are in excess of the 65dB LAEQ, 12 hr threshold however the impact will be temporary. Regarding vibration predicted construction noise levels for borrow pits are within best practice criteria. In relation to construction traffic on the local road network the increase in noise level due to additional construction traffic is predicted to be less than 2dB or less for all stages along all routes. At the R161 between Trim and Doolistown during stages 1a and 1b increases in traffic noise levels greater than 5dB are predicted however predicted levels remain within the construction noise 65dBLAeq12hr.

9.12.7 Regarding operational phase potential noise levels for the development have been calculated for a set of 272 noise sensitive receptors located within 3.5km of a proposed turbine. Permitted Bracklyn Wind farm is also included in the assessment. Omni directional assessment, assuming all locations are downwind of all turbines at the same time, predicts noise levels noting potential exceedances at locations H061,H062, H083, H097 and H239. These houses are located to the west of Bracklyn windfarm and are closer to the permitted Bracklyn turbines therefore the predicted noise contribution from Bracklyn wind farm are correspondingly greater than Ballivor. By reference to the Bracklyn EIAR and using background noise levels the predicted cumulative noise levels are within the noise criteria. While exceedances were found in

relation to H083 and H097 located between the proposed and Bracklyn wind farm, directional noise prediction model shows that the noise levels are within the best practice noise criteria. Regarding the substation this is located approximately 570m from the nearest Noise sensitive location H238. Any noise emissions from the substation will be inaudible at this dwelling.

9.12.8 Regarding construction phase mitigation measures are outlined with regard to noise and vibration. It is outlined that in the unlikely event that an issue with low frequency noise is associated with the proposed development an appropriate detailed investigation will be undertaken and if an exceedance of threshold values is confirmed, measures to mitigate low frequency noise at noise sensitive locations will be implemented through operational controls. (Turbine curtailment and/or stopping turbines under specific operational conditions using the windfarm SCADA system). Similarly in the event of a confirmed complaint indicating potential amplitude modulation associated with turbine operation, the operator will employ an independent acoustic consultant to assess the level of amplitude modulation and outline operational conditions and mitigation measures including turbine curtailment. Strict monitoring regimes will be undertaken during both construction and operational phases. In relation to decommissioning phase similar overall noise levels as those calculated for the construction phase would be expected.

9.12.9 In examining residual effects, some noise sensitive locations will experience an increase in noise levels arising from emissions from site traffic and other construction activities however these will be temporary in nature and will be within relevant noise and vibration limits. The impact during the operational phase will be within best practice noise criteria. While noise levels at low wind speeds will increase due to the development and specifically the operation of the turbines, the predicted levels will remain low albeit new sources of noise will be introduced into the landscape. Residual operational turbine noise effects are categorised as being moderate negative and long term. In terms of the cumulative effects of other wind farms it is noted that the potential exists for Bracklyn and Ballivor windfarms to be constructed at the same time. However, given the distance between the elements of each development and varied

delivery routes, significant cumulative effect is not likely. Predicted cumulative noise levels are within best practice noise criteria surveys and therefore significant effect is not associated with the cumulative noise impact.

Assessment of Noise and Vibration

9.12.10 I have considered that the noise assessment undertaken in the EIAR which represents a worst case scenario. I consider the methodology as set out, to be robust and identifies all the potential impacts associated with the construction and operational stages of the proposed development. I am satisfied that the proposal will not give rise to significant impacts on the surrounding locality in terms of noise. I consider that subject to the mitigation measures as outlined in the EIAR noise associated with the development is not likely to give rise to significant effects on nearby sensitive receptors. No significant vibration effects are predicted.

9.12.11 I have considered all of the written submissions made in relation to noise and vibration and the relevant contents of the file including the EIAR. I am satisfied that the potential for significant adverse noise and vibration impacts can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, the proposed mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative noise and vibration impacts.

9.13 Cultural Heritage

9.13.1 Chapter 12 of the EIAR relates to Archaeology and Cultural Heritage. The chapter sets out legislation and relevant guidelines and is cross referenced to Appendix 12.4 which details relevant policies and objectives within the Westmeath County Development Plan 2021-2027 and Meath County Development Plan 2021-2027. Statutory consultations are outlined including scoping requests to Development Applications Unit and the Heritage Council to which it is noted that no responses were received prior to submission of the planning application.

9.13.2 The assessment methodology is set out including GIS mapping and desk based research followed by field inspection. Sources consulted as part of the desktop assessment included:

The Record of Monuments and Places.
The Site and Monuments Record.
National Monuments in State Care Counties Meath and Westmeath.
The Topographical Files of the National Museum of Ireland.
OS Maps.
Down Survey Maps.
Aerial Photographs.
Excavations Database.
National Inventory of Architectural Heritage NIAH.
Record of Protected Structures Meath and Westmeath County Development Plans.
Archaeological Surveys and assessments carried out on or near proposed site.
Archaeological Inventory of Counties Meath and Westmeath.

9.13.3 A field inspection was undertaken over a number of days in May, June, July and September 2021. (Photographic record provided in Appendix 12-1). A total of 98 site investigation trial pits were monitored under license within an area of predominantly cutover bog, some parts of which were colonised by vegetation. Regarding the methodology for the assessment of impacts on visual setting, a standardised approach was utilised according to the types of monuments and cultural heritage assets and their varying degrees of sensitivity. The assessment of impacts on visual setting was undertaken using the ZTV map in the Landscape and Visual impact Assessment and also viewshed analyses from specific cultural heritage assets. Based on professional judgement, the study area of 10km was adopted for the viewshed analysis. The viewshed analysis used in the assessment of potential impacts on the visual setting of cultural heritage assets in the wider landscape of 10km considers the effects of the proposed turbines only. The distances used for assessment of impacts are set out as follows:

Cultural Heritage Asset	**Distance considered**
UNESCO World Heritage Sites (including tentative sites)	20km

National Monuments (State Ownership & Preservation Order Sites)	10km
Recorded Monuments, RPS	5km
NIAH structures	5km
Undesignated sites, if relevant	Within EIAR boundary

Arising from pre application consultations with Meath County Council an assessment of potential impacts on Trim Castle 14.5km E and Frewin Hill (Wattstown) 23kmW was also conducted.

9.13.4 Regarding UNESCO World Heritage sites and those on the tentative list, Brú na Bóinne is situated 39km to the northeast of T25. Durrow Abbey is located 38.6km from T10 and Clonmacnoise is 66.5km southwest of T10. Tara is located 25.9km from T25. It is asserted that due to intervening separation distance no significant on setting of the monuments arises. Regarding Trim Castle (14.5km E) the viewshed from the grounds of Trim castle indicates that theoretically 21 turbines would be visible from mid shaft to blade tip. The remaining 5 (TY21, T03, T07-T09) would only be visible form approximately hub height to blade tip and there are theoretically no instances where any of the turbines would be visible in full. This is a conservative scenario based on flat open bare landscape with no buildings or screening. In reality a person standing on the grounds of Trim Castle would not have any visibility of the turbines due to intervening buildings and topography. Viewshed from top floor of the castle indicates that theoretically all the turbines may be visible from a height approximately midway between the nacelle and blade tip (eg mid shaft). None of the turbines would be visible from their base up. Photomontage (Viewpoint 19) was prepared showing full visibility. All turbines would be visible from the upper floor of the castle.

9.13.5 Regarding Frewin Hill (23kmW) viewshed analysis shows that theoretically only three turbines will be visible from approximately mid shaft upwards (T01. T11 and T12). Only the upper portions of the remaining turbines may be visible from the top of Frewin Hill. Photomontage VP08 shows that all turbines will be visible at a distance at various turbine heights.

9.13.6 National Monuments within 10km are as follows:

SMR Ref	Name	Turbine No.	Distance
WN014-002	Delvin Castle	T22	5000m
WM020-131	Raharney Ringfort	T10	4300m
ME041-008	Donore Castle	T07	4600m

Regarding Delvin Castle Viewshed results show that T20 could be seen in full from Delvin Castle with the remainder visible approximately from mid shaft upwards. Regarding Raharney Ringfort theoretically 4 turbines T1-T3 and T12 may be seen in full from base to tip height with the remainder visible from approximately mid-shaft upwards. Regarding Donore Castle T1-T12 may be seen from Donore Castle from approximately mid shaft upwards. T22-25 may have no visibility. Only the upper portion of T13-T21 may be seen from the monument.

9.13.7 There are no recorded monuments within the site boundary however there are 141 monuments located within 1km of the nearest proposed turbine (Listed in Table 12.3) none of which will be directly impacted by the proposed development. Two of the 141 monuments are located within 1km of the nearest proposed turbine. 13 monuments are between 1-2km. Twenty are between 2 and 3km and 54 between 3-4km and 52 monuments between 4-5km from the nearest proposed turbine. The majority of monument types are ringforts (52) with 10 earthworks within 5km, 15 castles and 5 burial grounds and 6 churches within 5km.

9.13.8The context of the existing environment through the prehistoric period the early medieval period, sites with religious or ritual association, ecclesiastical enclosure at Grange Beg, the medieval period and post medieval period are explored in some detail. Archaeological surveys carried out within the site boundary are outlined as well as a review of topographical museum files, potential subsurface archaeology and excavations database. One protected structure is within the site boundary namely RPS 021-028 Permanent narrow gauge Bord na Mona Railway line. An examination of the rail network on the site where the infrastructure is proposed to interact was undertaken. The layout was altered to avoid as many rail lines as possible with 14 impacts in Westmeath reduced to 7 crossings by the proposed roads/amenity trails

and one intersection in Co Meath. Regarding mitigation all locations where railway tracks will be crossed by the proposed floating roads were examined and recorded. No specific pre construction mitigation measures are required and mitigation will include the provision of information signage.

9.13.9 As regards other protected structures there are 68 RPS structures located within 5km of the nearest proposed turbines. (Table 12-4 and Fig 12.45). The majority of structures are located within the urban settings of Delvin to the North, Raharney to the southwest and Ballivor to the Southeast. The ZTV shows that all locations where the RPS structures are located may theoretically have 21-26 turbines visible. The NIAH structures within 5km are set out in table 12.5 and Fig 12-16 (many of NIAH structures are also RPS structure). First edition 6 inch map and 25inch second edition ordnance survey maps indicate a possible famine settlement in Bracklin Bog named Tonduff. In terms of the baseline review of grid connection route, haul route and accommodating works for heritage features reference is made to NIAH structure Water Pump (NIAH Reg 14327002 RPS ID 91156) and Scarriff Bridge RPS ID 91254). A number of archaeological and architectural heritage constraints are noted in the vicinity of Trim accommodating works however none are affected by the works.

Likely significant effects:

9.13.10 In the do noting scenario indirect effects to cultural heritage in the wider landscape setting would not occur. In terms of direct construction phase impacts there are no such impacts to UNESCO World Heritage Sites, Trim Castle or Frewin Hill, National Monuments or Recorded Monuments. Regarding unrecorded potential sub-surface archaeology it is noted that the discovery of human remains in 2003 (Clonycavan Man) along with the high number of recorded stray finds from the bog and the recorded monuments in dryland surrounding the bog suggests a high potential for archaeological finds and features within the peat. The potential therefore arises for the development area to contain unrecorded subsurface sites and artefacts. Archaeological monitoring of groundworks is proposed to take place during construction and if archaeological material uncovered, the developer will be required

to provide resources for the resolution of such features either by preservation by record (excavation) or by preservation in situ (avoidance).

9.13.11 Regarding the impact on Permanent narrow gauge Bord na Mona Railway line (Protected Structure) the proposed roads will intersect with the narrow gauge railway tracks in 7 locations where it is proposed to float the roads over the tracks and therefore no impacts will occur. Locations where railway tracks are crossed by floating roads were examined and recorded on the site and included in the EIAR. Signage will be provided along the amenity paths. Regarding Ballivor Water Pump (NIAH Ref 14327002 RPS 91156) fencing of the structure during movement of abnormal loads through Ballivor will be provided to ensure no significant effect. No direct effects arise to protected structures and NIAH structures within 5km. Regarding local heritage the derelict structure (ruined stone house) within the possible famine settlement in Bracklyn bog as shown on 1st edition 6 inch and 2nd edition 25 inch OS map Tonduff will be preserved in situ and impacts are considered to be imperceptible. Licensed archaeological monitoring is to be undertaken during construction.

9.13.12 Regarding the operational phase no direct impacts occur on archaeology architecture or cultural heritage. Regarding potential indirect impacts the development will have potential for indirect effect on the setting of features or archaeological architectural heritage merit. Regarding UNSECO world heritage sites it is asserted that as Brú na Bóinne is located over 38km to the northeast and therefore due to intervening distance no effects on setting will occur. Regarding Trim Castle whilst the viewshed from ground level suggests theoretical visibility of 21 turbines from mid shaft to blade tip and remaining 5 from hub height to blade tip the reality is that no visibility is possible due to intervening buildings to the west. Regarding Trim Castle from upper floor a photomontage shows that all turbines will be visibility and impact is categorised as slight-moderate.

9.13.13 Regarding Frewin Hill viewshed analysis indicated three turbines visible from approximately mid shaft upwards and the remaining turbines visible from the top of

Frewin Hill. Photomontage shows all turbines visible in clear weather conditions. Potential impact is considered slight given the separation distance involved.

9.13.14 Regarding National Monuments Delvin Castle theoretical visibility in viewshed analyses and ZTV shows T20 could be shown in full from base to tip height with remainder visible from mid shaft upwards. Although the separation distance is only 5km the structure is located in a town where a number of buildings are located, Visual amenity of the castle is intrinsically linked to its urban setting and therefore potential impacts are considered to be slight.

9.13.15 Regarding Raharney Ringfort, theoretically 4 turbines T1-T3 and T12 may be seen in full while the remainder are visible from approximately mid-shaft upwards. Ringfort is located in flat open pastureland with good views in all directions. Separation distance is 4.3km and given the numerous modern houses on north side of the public road views of turbines are likely to be intermittent due to buildings and natural screening. Potential impacts are considered to be slight.

9.13.16 Regarding Donore Castle viewshed shows theoretically Turbines T1-T12 may be seen from Donore Castle from approximately mid shaft upwards. T22-T26 may have no visibility from Donore Castle. Only the upper portion of the remainder of the turbines T13-T21 may be seen from the monument. The castle is located on the south side of a public road in open pastureland. Views to the north are possible although the boundaries to the north of the public road are likely to screen views of the proposed turbines, in particular during the summer season. Separation distance is 4.6km to the nearest turbine together with the natural screening along the public road is such that impact on setting will be slight.

9.13.17 Regarding recorded monuments within 5km the ZTV shows that monuments within 5km are located in areas where 21-26 turbines may be visible. In reality existing screening and buildings are likely to alleviate if not remove potential impacts. The ability to view turbines from monuments does not mean that either the monument or its

immediate setting will be significantly negatively altered. Where turbines are visible, it will result in a landscape change which is considered to be slight moderate.

9.13.18 Regarding the permanent narrow gauge Bord na Mona railway line RPS 021-008 the direct impact and change to the landscape is acknowledged. The inclusion of the railways in the amenity trail / plan for the site is such that it will result in a positive impact in terms of industrial heritage. It is not considered that the proposed turbines will detract significantly from the railway network or its setting and impacts are considered to be not significant. Regarding 68 protected structures within 5km the impacts arising are deemed to be slight – moderate. Regarding impact on local cultural heritage assets the derelict structure at "Tonduff" located in an overgrown section of the bog which is densely covered in trees and bushes no views from the settlement are possible due to screening therefore impact on setting is imperceptible.

9.13.19 Regarding cumulative impacts other windfarms within 20km and the peatland rehabilitation and PCAS scheme were assessed within the EIAR. With regard to Trim Castle Viewpoint 19 from the upper floor of Trim Castle shows that the proposed Ballivor turbines will be visible along with the permitted Yellow River turbines albeit at a distance and proposed Milltown Pass turbines and permitted Bracklyn turbines. The cumulative effect on setting will be moderate. With regard to Frewin Hill the potential impact may increase from slight when considering Ballivor turbines alone to slight /moderate when considering Bracklyn and Ballivor. Regarding Raharney Ringfort the likely impacts on this monument from Ballivor alone was considered to be slight when considered alone increasing to moderate with cumulative effect. Regarding Delvin Castle the effect deemed slight when considered alone increasing to moderate when considered together with Bracklyn. Regarding Donore Castle the increase from slight to slight /moderate in cumulative effect. Regarding recorded monuments, RPS and NIAH Structures within 5km slight moderate impact to the wider setting may increase to moderate when considered with the permitted Bracklyn turbines.

<u>Assessment of cultural heritage chapter.</u>

9.13.20I consider that the information provided in the planning application documentation and additional information submitted in response to the observations provides comprehensive detail to allow the impacts of the proposed development to be assessed. I am satisfied that the impacts on archaeology, architecture and cultural heritage would largely be avoided managed or mitigated to an acceptable extent by measures forming part of the proposed development. I note in relation to potential subsurface archaeology Meath County Council and the Department of Housing Local Government and Heritage initially sought advance archaeological testing. I note that the Department subsequently indicated broad agreement with the findings of the EIAR and mitigation measures as set out including for archaeological monitoring of excavations.

9.13.21Regarding the assessment of indirect impact on setting of sites and monuments within 10km of the development as clarified in response to the observer's submissions I note that the discussion in relation to Tower House at Causestown (Lune By) Preservation Order 176/1945, located 3.4km northeast of T24, regarding assessment of impact is a duplication of the response in relation to the Hill of Ward. It is noted that elsewhere in the response the cumulative assessment acknowledges that the upper portions of both the proposed Ballivor and permitted Bracklyn turbines will potentially be visible from the Tower House. Having reviewed the context and the setting and character of the monument and having regard to the distance and vegetative screening I consider that the impact on the setting of the monument will be slight to moderate.

9.13.22 I note the submissions with regard to potential impact on UNESCO tentative list World Heritage - Royal Sites of Ireland I have concluded as set out at 8.5 above that as found within the EIAR LVIA given the distance of the proposed development from the Royal sites, location within peatland landscape deemed to be of relatively low sensitivity and highly suitable for wind energy development, set back from population centres and highly sensitive visual receptors, absorption capacity of the landscape and absence of obstruction of key sensitive features, the scale and form of the proposed development will not result in significant landscape and visual effects. Based

on these considerations significant effect on setting or outstanding universal value does not occur. I am satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on the archaeological, architectural or cultural heritage of the area.

9.14 Landscape

8.14.1 Chapter 13 of the EIAR assesses the landscape and visual impacts of the proposed development. The methodology and assessment criteria is set out in detail. The Zone of Theoretical Visibility ZTV is extended to 26.1km to include the most elevated location at the Hill of Tara Heritage landscape given its national and international renown and status on the UNESCO world heritage site tentative list. The LVIA study area has been established as 25km from the proposed turbines in all directions and to 26.1km from the proposed turbines in the direction of the Hill of Tara.

9.14.2 It is asserted that no significant effects on landscape character are likely to arise beyond distances of 15km. The topographic characteristics of the LVIA Study area is generally representative of the Irish midland landscape, being relatively flat particularly to the south and east. Reference is made to Figure 13-1 Half Blade ZTV map to indicate theoretical visibility. I note that the ZTV mapping colour banding was absent on the initial half blade ZTV map Fig 13-1 (digital and hard copy) and remains absent on the digital further information submission in response to the observers Fig 5 and Fig 13-1 though the banding is present on the hard copy maps submitted to the Board. The applicant acknowledged the error in the response documents indicating that it arose due to a digital malfunction. I note that for the purpose of analysis the colour banding is evident on several of the other mapping figures including the LVIA baseline map Fig 13-5, and landscape character areas Fig 13-11. In my view the ability of parties to the appeal to decipher the zone of theoretical visibility is not precluded by this technical malfunction.

9.14.3 Regarding theoretical visibility within 10km of the proposed development the landscape is predominantly flat lowland therefore as depicted on the ZTV full

theoretical visibility predominates excepting small pockets of partial theoretical visibility from slight topography undulations. The only notable topographic features of the landscape within 10km of the proposed turbines are Barrow Hill (west of T10) and Sionhill (west of T17). These landforms obscure or partially obscure visibility of the proposed development from receptors to the west. The north eastern extent of County Westmeath (northwestern portion of the LVIA study area) comprises a landscape of hills interspersed with lakes and small river valleys. Irregular and undulating landscape features results in a sporadic and intermittent spread of theoretical visibility to the northwest of the LVIA study area beyond 10km from the proposed development. Full theoretical visibility is evident within the flat lowland landscape of the Boyne Valley in County Meath to the north, east and south of the proposed development to distances of 10 to 15km. Slightly elevated landforms around the Hill or Ward and River Athboy limit the theoretical visibility of the proposed turbines from locations beyond 10km to the northeast of the LVIA study area. The south side of the Boyne Valley rises gently to the south of Trim Town and elevated landforms north of Enfield will obscure views of the proposed development in many areas to the southeast of the LVIA study Area beyond 11km from the proposed turbines as shown by the partial and no theoretical visibility shown on the ZTV map.

9.14.4 Regarding distribution of theoretical visibility to the north approximately 15km north of the proposed turbines landform rises to Loughcrew and Sliabh na Calliagh Hills restrict theoretical visibility from locations in the northern portion of the LVIA study area beyond 15km. There is no theoretical visibility or partial theoretical visibility of the proposed turbines from the population centres of Kells and Navan. There is no theoretical visibility in County Cavan excepting a very small area.

9.14.5 Regarding theoretical visibility to the south visibility becomes intermittent and relatively sparse beyond 10km south of the proposed turbines in County Offaly and County Kildare due to slight landform undulations. Croghan Hill approximately 25km southwest of the turbines is the only elevated landform feature within County Offaly located within the LVIA study area. To the east of at the Hill of Tara the ZTV shows

full theoretical visibility of all proposed turbines from the peak of the hill and other areas within the landscape setting of this site.

9.14.6 Field Surveys found that screening from localised undulations in topography vegetation and manmade elements substantially reduce the likelihood of viewing turbines in vast areas of the LVIA study area in particular beyond 5km. The low base elevation of the turbines relative to the surrounding landscape causes a 'disproportionate screening effect reducing visibility of the proposed turbines in large areas of the LVIA study area where ZTV indicates full theoretical visibility. Regarding visibility in proximity to the site actual visibility is reduced by screening as a result of the vegetated nature of the landscape. Route screen analysis on roads within 3km found that the majority of the roads surrounding the site are a mosaic of 'Intermittent / Partial screening' and full screening due to the presence of mature roadside vegetation.

9.14.7 Landscape policy designations are mapped on Figure 13-5 Landscape Policy Context Map. The mapping shows that the most sensitive landscape designations are set back from the proposed development at the outer periphery of the LVIA study Area (>10km).

9.14.8 Regarding the County Westmeath Landscape Policy (County Development Plan 2021-2027) areas of high amenity include Lough Lene, Lough Owel, Lough Ennel and Lough Derravaragh all located in the western portion of the LVIA study area. The Hill of Uisneach is also designated as an area of high amenity however it is outside the LVIA study area. The closest area of High Amenity is Lough Lene at 13.1km northwest of the nearest proposed turbine. Regarding landscape character areas the site is located within the River Deel Lowlands LAC 3 as designated in the Westmeath County Development Plan while there are 4 other LCAs within the LVIA study Area. Designated Scenic Views and Scenic Routes are listed on table 13-5 Landscape Policy Context Map. 16 designated scenic views within the 25km LVIA study area. Six of the designated scenic routes have some part of their respective routes located in the LVIA study area. Regarding County Westmeath Wind Energy Strategy the

Westmeath County Development Plan directs large scale renewable energy development toward cutover peatland landscape policy CPO 10.146. Regarding wind energy capacity map (Map 69) of the Westmeath County Development Plan which assesses the capacity of the landscape character areas to accommodate wind energy development all LCAs are designated as 'low capacity' except for LCA 9 Uisneach which has 'no capacity'.

9.14.9 Regarding County Meath Landscape Policy the site is within the "Lowland Areas Landscape Character Type and LCA 15- South West Lowlands". This is deemed to be an LCA of 'High' landscape value, regional importance and overall medium sensitivity. A number of other LCAs occur within the LVIA study. Regarding protection of the character of valuable cultural heritage landscape receptors chapter 8 of the Meath County Development Plan affords protection to Landscape Conservation Areas: The Hill of Tara Landscape and Loughcrew and Slieve na Calliagh Hills, Historic walled towns. UNESCO World Heritage Site – Brú na Boinne, built heritage such as the royal canal designated landscapes gardens and demesne.

8.14.10 High sensitivity landscapes of Tara /Skryne as well as Loughcrew and Slieve na Calliagh Hills under policy HER Pol 54 are designated as landscape conservation areas. Slieve na Calliagh Hill within 17km of nearest turbine and Hill of Tara 25km. The historic walled towns of Navan, Trim, Kells and Athboy also within the LVIA study areas. The Royal Canal 3.7km south of the nearest turbines. Bracklyn Estate demesne landscape is proximate to the west of the northern turbine cluster. Ballinlough Castle and Gardens is 5.7km north of the nearest turbine. Loughcrew Estate and Gardens 19km north. Views and Prospects from Meath County Development Plan are indicated on Landscape Policy Context Map 13.5. and outlined on Tale 13.3. Regarding County Meath Wind Energy Policy the site is located in LCA 14 South West Lowlands which is designated as having a medium capacity to accommodate wind turbines.

9.14.11 Regarding Landscape character of the proposed site it is noted that the character of the peatlands forming the site is now strongly influenced by the industrial peat

extraction practices historically conducted at the site. Extensive peat harvesting operations has resulted in a degraded cutover peatland landscape. The character of the wider landscape surrounding the site comprises a rural agricultural landscape comprising fields of pasture, occasional forestry plantations and dispersed rural settlement. The surface of Ballivor Bog is drained by a network of northwest southwest oriented drains discharging to the Deel River. Carranstown Bog is drained by a network of northwest-southeast oriented drains which discharge to the River Deel. Bracklin Bog is drained by a series of drains before discharging to the River Deel. Lisclogher Bog is drained by east-west oriented drains which in turb discharges to the Stoneyford River. While Lisclogher West Bog was never produced a series of northwest southeast oriented ditches and drains were constructed in the 1980s. Although the individual bogs have their own distinct landscape attributes (scale/ shape/orientation) the general character of the current landscape is very similar within each bog. The permitter of the site is typically bounded by mature mixed woodland. Tree colonisation is prevalent throughout the site particularly on Bracklyn Bog. Bracklyn House a heritage house located approximately 1700m west of the nearest proposed turbine T18. . The permitted Bracklyn Windfarm is located in the intervening landscape between Bracklyn Estate and the proposed development.

9.14.12 Regarding view and visual amenity within the site and its landscape setting, it is noted that in general long ranging views are very limited in flat landscapes. Unrestricted views are available throughout the site due to the open expanses of bare cutover peat. Excepting entrance routes the site is predominantly surrounded by mature treelines of broadleaf and conifer. The relatively dense vegetation enclosing the site acts as a physical barrier restricting views as well as buffering noise and dust both into and out of the site. The most sensitive visual receptors likely to have most visibility of the proposed development are local residents who live in close proximity to the site. Site visit determined that in most instances visibility of the site was screened from view by well-established dense boundary vegetation located both within the curtilage of local residents and along the site boundary and local field boundaries. Views in the immediate landscape setting of the site are in general very small in scale with short, enclosed views.

9.14.13 The landscape value of the proposed development site was deemed to be 'low' given its highly modified and degraded nature. Susceptibility of the landscape to the proposed change is low considering local planning policy indicates suitability of degraded cutover peatlands for wind energy development in both County Westmeath and Meath. Overall the sensitivity of this landscape to wind farm development is deemed to be 'low'. The large spatial extent, regular spacing of turbines, grid layout (non-linear) and tall turbines align with the design guidance reported for flat peatland landscape types in the Wind Energy Development Guidelines 2006 for the siting and design of wind energy developments in flat peatland.

9.14.14 Figure 13-10 and Table 13-6 show that the most sensitive landscape designations are set back from the proposed development at the outer periphery of the LVIA study area >10km where there is much less theoretical visibility of the proposed development. Regarding settlements within the 25km LVIA study area table 13-8 sets out theoretical visibility. Recreational cultural heritage and tourism destinations, recreational routes and major transport routes are reviewed. A number of visual receptors were scoped out due to no visibility or limited visibility as determined from appraisals conducted during field surveys. Individual viewpoints were selected at or representative of remaining receptors scoped in and photomontages produced. Nineteen photomontage viewpoints illustrated on Fig 13-15 assesses the significance of visual effects arising from the proposed development at each viewpoint location.

9.14.15 In relation to the cumulative context other windfarms within 25km of the proposed development were considered. It is noted that 8 turbine proposed Knocknanarragh windfarm 8km north of the proposed development is not included in cumulative photomontages or cumulative ZTV mapping. 7 existing permitted and proposed windfarms identified within the LVIA study areas shown on table 13-15 and mapped in Figure 13.5. The greatest potential for cumulative landscape and visual interactions will be between the permitted Bracklyn Wind Farm which is located immediately to the west of the proposed northern turbine cluster.

9.14.16 In terms of identifying the likely or significant landscape and visual effects it is evident that in the operational phase the landscape character of the proposed development site will undergo a change in character by the introduction of significant vertical manmade structures into the landscape. There will be a substantial magnitude of change to the landscape in localised areas of the proposed site where the landscape is materially altered within the infrastructure footprint. In the local context the site is a rural working landscape and while it has some local value it is a highly modified landscape substantially degraded by commercial peat extraction and deemed to be of 'low' sensitivity. Low sensitivity balanced with a substantial magnitude of change amount to long term 'moderate' landscape effects on the physical fabric of the landscape of the site. Effects on the perceptual and aesthetic qualities of the character of the windfarm site are also deemed to be 'moderate.' Mitigation measures in design to avoid or reduce direct effects on the landscape receptors include design of spatial configuration to minimise loss of valuable landscape receptors such as remnants of uncut raised bog, mature woodland or features of cultural heritage value. eg railway. The use of existing access tracks and machine passes is chosen where possible. Excavation depths and volumes are minimised. Further mitigation includes the provision of a biodiversity enhancement plan and dedicated public walking trails and car parking facilities.

9.14.17 Regarding residual effects, it is noted that once operational the landscape will naturally revegetate and overtime, with the aid of the peatland rehabilitation plan and biodiversity enhancement plan the landscape of the bogs surrounding the windfarm infrastructure, will improve in quality in terms of environmental biodiversity and landscape character. Residual effects on the landscape of the windfarm site are deemed to be long term, negative and slight. Regarding effects on designated landscape receptors of high sensitivity, no significant impact on the sensitivity of the receptors arise due to the large set back distances and limited visibility of the proposed development from them.

9.14.18 Regarding Westmeath Areas of High Amenity including Lough Ennel, Lough Owel, Lough Derravaragh and Lough Lene the ZTV shows little visibility. On site appraisal

found very limited potential visibility due to distance and vegetation screening. There will be visibility of the proposed turbines from areas of high elevation (Frewin Hill) on the western shore of Logun Owel within the Lough Owel Area of High Amenity. VP08 shows the proposed turbines visible behind Lough Owel in the background of the image and will not alter the character immediate setting and appearance of the High Amenity Area. There will be a negligible magnitude of change to the character and setting of these receptors and no significant landscape effects will occur.

9.14.19 Regarding the Royal Canal Corridor (3.7km south of the proposed turbines at its closest point), which is a designated Landscape Character Area within Westmeath, a proposed Natural Heritage Area in County Meath and a designated High Amenity Area within County Kildare. It is a landscape receptor of high sensitivity protected in the landscape policy of Co Westmeath, Co Meath and Co Kildare. Whilst the ZTV indicates full theoretical visibility along the Royal Canal actual visibility will be very limited as the Royal Canal is at a similar or lower elevation than the proposed turbines and views towards the site are screened by vegetation along the canal. Visibility of the turbines is likely from areas of higher elevation such as bridges overlooking the canal (VPO6). Distant woodland across the landscape reduces visibility from open views as seen in VP07. There will be negligible magnitude of change to the character and setting of this landscape and no significant effects will occur.

9.14.20 The Boyne Valley is a landscape of exceptional value and high sensitivity on account of the cultural heritage value and relevant designations in the Meath County Development Plan. No significant effects are predicted. Regarding Co Meath landscape conservation areas Loughcrew and Slieve na Calliagh Hills, a landscape of exceptional value and high sensitivity on account of the cultural heritage value and relevant designations in the Meath County Development Plan it is noted that the nearest turbine is approximately 18.7km from Loughcrew and Slieve na Calliagh Hills. The proposed development will not alter the character, immediate setting and appearance of this landscape conservation area. The proposed turbines do not interfere with any visual connectivity between Loughcrew and other important heritage sites of prominence in the area.

9.14.21 Regarding Hill of Tara which is a landscape of exceptional value and high sensitivity on account of the cultural heritage value and relevant designations in the Meath County Development Plan the nearest proposed turbine is located approximately 26.1km from the summit of the Hill of Tara. The proposed turbines will be visible from the elevated vantage points on the Hill however will not alter the immediate setting appearance and context of the monuments at the Hill of Tara and its immediate landscape. Regarding the intervisibility between the Hill of Tara and Frewin Hill in Co Westmeath, which are on opposite sides of the LVIA study Area the 54km distance between the two hill peaks and location of undulating landscape including Knockdrin Peak to the west of the proposed development limits views towards the Hill of Tara from Frewin Hill. On clear days the proposed turbines will be visible from the peaks of Frewin Hill and the Hill of Tara. Figure 13-19 shows views from Hill of Tara in the direction of Frewin Hill. The proposed turbines do not interfere with any visual connectivity between the Hill of Tara and Frewin Hill. On balance it is deemed there will be a slight effect on the landscape character of the hill.

9.14.22 Regarding the walled towns of Navan, Trim, Kells and Athboy all located more than 7.5km from the proposed development, visibility is unlikely. There will be no impact on the character of these towns. Regarding Bracklyn Demesne although not a dedicated landscape it is of local importance and has been given a ‘medium’ sensitivity. While the proposed turbines may be visible from locations within the demesne the proposed turbines will not alter the immediate setting, appearance and context of the area and its immediate landscape. The proposed turbines do not interfere with any visual connectivitiy between the demesne and other important heritage sites of prominence in the area. The magnitude of change was deemed to be slight and residual landscape effects slight. (Viewpoint 10 is located in proximity to Bracklyn Demesne.)

9.14.23 Regarding the Grand Canal, designated Area of High Amenity within Co Offaly and Co Kildare at its closest point it is approximately 20km from the nearest proposed turbine. Similar to Royal Canal the Grand Canal is bordered by vegetation and visibility is unlikely. No significant effects occur. Croghan Hill designated as an area of High

Amenity in the Offaly County Development Plan is located approximately 24.9km southwest of the nearest proposed turbine. Fig 13.20 shows view from summit of Croghan Hill. The proposed turbines will be visible in the background and will not be the central focus. The proposed development will not alter the character, immediate setting and appearance of Croghan Hill areas of high amenity.

9.14.24 Regarding landscape effects on landscape character areas, the effects on 12 designated LCAs screened in for detailed assessment within the LVIA study areas ranged from not significant (Co Kildare LCA 1 North western lowlands) to slight (Co Westmeath LCA 1 Northern Hills and Lakes, LCA 4 Central Hills and Lakes, LCA 5 Royal Canal corridor, LCA 10 Lough Ennel and South eastern Corridor, Co Meath LCA 5 Boyne Valley, LCA 6 Central Lowlands, LCA 13 Rathmoylan Lowlands, LCA 16 West Navan Lowlands, LCA 17 Southwest Kells Lowlands, LCA 1 North Western Lowlands. A moderate significance of landscape character effect was noted in respect of Co Westmeath LCA 3 River Deel Lowlands and Co Meath LCA 15 Southwest Lowlands. The largest magnitude of change will occur in Westmeath LCA 3 (River Deel Lowlands) and Meath LCA 15 (Southwest Lowlands). As the proposed turbines are located within these LCAs, a material change to the landscape will occur. Most visibility will occur from areas within 5km of the site and elevated areas within the wider area. On site appraisal found that there was limited visibility past 5km due to screening from vegetation within the flat landscape. The proposed turbines will to some degree change the visual and perceptual aesthetic qualities of some areas in these LCAs. Magnitude of change is deemed to be moderate as the addition of uncharacteristic new features will likely cause a change in landscape character in a localised area but will not redefine the character of the LCAs.

9.14.25 Sixteen of the proposed turbines are within Westmeath LCA 3 which is an area designated having low capacity for wind energy. LCA 3 contains no areas of high amenity and is designated as medium landscape sensitivity to wind farm development in the LCA due to absence of high amenity areas and protected views. Residual effects on the character of the LCA are deemed to be moderate. The remaining 10 proposed turbines are within Meath LCA 15 which is assigned medium landscape

sensitivity to wind farm development. Residual effects on character are deemed to be 'moderate'. The proposal will not materially alter any other LCA. When visible it will likely cause slight impact on landscape character

9.14.26 Regarding cumulative landscape effects none are likely to occur with the Cushaling / Cloncant (under construction 24.1 km south) and Cloncreen (24.6km southwest) windfarms. The greatest cumulative effects will occur with the permitted Bracklyn Windfarm located approximately 519m from the nearest proposed turbine. The residual cumulative landscape effect is 'slight'. It is asserted that given that this is a large flat and expansive landscape type with vegetation throughout it is an acceptable area to absorb and accommodate many wind turbines. Effects on the character of the landscape will only be appreciated from elevated vantage points where there are open views across the flat lowland landscape. The proposed turbines may not always be viewed in combination with other windfarm developments however from an elevated vantage points there may be views of turbines in different directions. The separation distance between the proposed development and other wind farms developments indicates that turbines may be viewed as small features in the background of landscapes and do not change the character of the landscape. A description of the cumulative visual interaction between the proposed turbines and other cumulative projects from visual receptors is included in the photomontage assessment tables. (Appendix 13-3)

9.14.27Regarding cumulative landscape effects on landscape character areas Westmeath LCA 3 and Meath LCA15, the northern cluster of turbines will be visible with the permitted Bracklyn turbines from areas within Meath LCA 15 and Westmeath LCA 3. No significant cumulative effects are likely. Other cumulative windfarms may only be seen in combination with the proposed development from elevated vantage points where there are open views across a flat lowland landscape. No significant cumulative landscape effects are likely to occur in any other LCAs within the LVIA study area.

9.14.28Regarding visual effects, 19 viewpoints are presented in Appendix 13-4 Photomontage booklet. Visual effects were assessed using the assessment

methodology described in Appendix 13-1 and a viewpoint assessment summary is provided in Table 13-7. Residual visual effect was deemed significant in relation to viewpoint 3 due to the intervening distance of 975m from the local residential cluster to the nearest turbine and the horizontal extent of the turbines being viewed at 160 degrees. A residual effect of 'moderate' was deemed to arise at 3 of the viewpoint locations due to the intervening distance of <3km from the site and proximity to visual receptors including residents from the village of Ballivor and motor traffic along the R156 and local roads adjacent to the site boundary. A residual visual effect of 'slight' was deemed to arise at eleven of the 18 viewpoint locations. All other viewpoints were assessed as resulting in not significant visual effect.

9.14.29 Regarding local visual amenity the proposed development adheres to 500m set back distance recommended in DoEHLG 2006 Guidelines and also the 4 times tip height set back distance set out for residential visual amenity prescribed by the draft guidelines. (DoEHLG 2019). 8 of the 19 viewpoints were taken within 5km of the proposed site and 5 are within 3km. VP03, VP04, VP10, VP15 and VP17. These locations chosen to assess visual effects on residential amenity and receptors of local community importance. Visual effects are rated of relatively high significance significant and moderate from these areas due to close proximity and where the magnitude of change is greatest and sensitivity is relatively high in respect of residents living in close proximity. A residual effect of significant was deemed to arise at Viewpoint 3 due to separation distance from local residences (975m) to nearest turbine.

9.14.30 Regarding visual effects on recreational cultural heritage and tourism destinations it is noted that mature vegetation surrounds a lot of the area around Bracklyn House. The permitted Bracklyn wind farm is located to the east of the house and in closer proximity to the proposed turbines. No significant visual effects likely to occur from the villages of Raharney, Delvin.

9.14.31 Regarding designated scenic views The Hill of Tara (VP02. 26.1km) turbines are visible in the background. The turbines present as two coherent clusters in the

background of the expansive landscape view. Having regard to the distance the turbines will not be domineering or incongruous from this location. The turbines are not the central focus and can be absorbed into the view. The magnitude of change is deemed to be ‘negligible’ and residual effect ‘slight’

9.14.32 Regarding Slieve na Calliagh and Loughcrew megalithic tomb VP11 displays view from Slieve na Calliagh (Meath Designated View 6) at 18.9km northwest of the closest turbine. The proposed turbines appear as a linear feature in the background of the view. The vast open expanse of the view allows for the assimilation of the projects into the landscape without causing a domineering effect. Magnitude of change was deemed slight and residual effect moderate as the proposed turbines read coherently and are effectively absorbed in the expansive and long ranging landscape view. Regarding Royal Canal way which has several designated views in Meath County Development Plan. (Views 54, 55,56 and 83 within LVIA) VP05 and VP16 represent views along the Royal Canal Way. Actual visibility is limited to areas of high elevation such as bridges overlooking the canal as seen in VP05 and VP16. Magnitude of change was deemed to be slight and residual visual effects deemed to be slight.

9.14.33Regarding the Hill of Ward, designated as View 52 in Meath County Development Plan, this viewpoint is a panoramic view of the surrounding landscape. The designated view is one of the slightly elevated locations within 10km of the proposed development. Figure 13-23 taken from the top of the hill shows that vegetation screening views to the southwest limits views of the proposed turbines. The magnitude of change deemed negligible, as there are views of higher scenic quality in the opposite direction and the proposed turbines are barely distinguishable within the panoramic view. Residual visual effect deemed to be slight.

9.14.34Regarding scenic views to the north of the development. Viewpoint 12 photomontage shows elevated view from Meath Designated scenic view 5 along the R154 at 18.8km north of the nearest proposed turbine. Open and clear views of the development are afforded. The magnitude of change was deemed slight as the proposed turbines are visible in the background within the designated view. Residual visual effects were

deemed to be moderate. Meath designated scenic view 11 is located 14km north of the nearest proposed turbine . VP 13 displays a view from this location towards the development. Hubs and blades of the turbines are visible above the vegetation screening the towers of the turbines. Magnitude of change was deemed to be slight and residual visual effects slight due to vegetation screening. Regarding scenic views to the south the designated Meath Scenic View 79 Scarriff Bridge is 7.3km southeast of the nearest proposed turbine. Scenic views from this location are in the northeast and southwest direction and not towards turbines. Views towards the turbines are screened by roadside vegetation and field boundaries. No significant visual effects are likely to occur from this location. Meath designated scenic view 57 is located 12.3km from the nearest proposed turbine. In VP05 the turbines appear as coherent clusters in the background of the view and do not obstruct the scenic view of the landscape. Magnitude of change was deemed moderate and residual visual effect moderate as the proposed turbine read coherently and are effectively absorbed in the expansive and landscape view.

9.14.35 Regarding recreational, cultural heritage and tourism designations Trim Castle (Plate 13029) shows no visibility towards the development from the grounds of Trim Castle due to screening and built infrastructure from the castle wall and trim settlement. VP 19 shows views from top of castle (14.5km from closest turbine). Turbines are visible and appear as two neat clusters on either side of two topographic features in the background of the view. The addition of the turbines adds to the rural urban characterisation of the existing view. The magnitude of change was deemed to be slight and residual effect slight from this location. Regarding Spire of Lloyd designated view 13 within the Meath County Development Plan VP 14 located 17.9km from nearest proposed turbines. Only three turbines are fully visible the remaining 23 blades are visible over the top of the forestry in the background. Magnitude of change deemed to be negligible and residual visual effect not significant due to the distance and screening.

9.14.36 Regarding settlements views from Ballivor 3km east are limited due to screening from dwellings and infrastructure. VP04 from a residential road within the village shows 7 of

the proposed turbines visible in the background. Residential dwellings and vegetation screen the majority of the proposed turbines. Magnitude of change was deemed to be slight and residual visual effect slight. Trim (14.km east) has limited views save from areas of high elevation. (eg Top of Trim Castle) and no significant visual effects arise. Crossakeel is 14.5km north and only has limited areas of open visibility within the village. VP 13 shows views from local road leading to Crossakeel and no significant visual effects arise. Rathmoylon, Rathcairn, Clonard and Kildalkey all lie further than 5km from the proposed development and while ZTV shows full visibility onsite appraisals determined there would be some visibility from areas within these villages. Overall the distance and screening from built infrastructure and vegetation in the majority of locations within the villages determined that no significant effects will arise.

9.14.37 Regarding visual effects in Co Kildare, Carbury Castle and Motte, located atop of Carbury Hill 17.2km southeast of the nearest proposed turbine with open views in the direction of the proposed development however due to distance the turbines may appear in the back of the view as very small features embedded in the landscape. The Hill at Killickaweeny and Hill at Ovidstown are located further than 20km southeast of the proposed turbines. Any scenic views from these locations are to the south in the opposite direction to the proposed turbines. Screening by topography vegetation and distance ensure no significant visual effects.

9.14.38Regarding visual effects from major transport routes the Dublin Sligo railway runs parallel to the Royal Canal Way. Views in the direction are screened along the majority of the rail route. Visibility from open views will be brief and no significant visual effects arise. The N51 runs to the north of the development within 5km. (VP01 taken 4.8km northwest of the nearest proposed turbine shows that the proposed turbines will be visible aa a distance. Intervening vegetation delineating field boundaries will provide screening. The northern cluster is visible and views of the southern cluster are limited due to distance and screening. From the N52 (Viewpoint 18 5.1km northeast of the nearest proposed turbine) mature hedgerows and treelines delineate fields within this view and vegetation reduces open views and limits views of turbines. No significant visual effects will occur. The M6 motorway 8.6km south of the nearest turbine is

screened by vegetation along the majority of the route which will ensure visibility will be brief. No significant visual effects arise. The M4 motorway is 7.7km south and no significant visual effects occur as open views are limited.

9.14.39 Regarding the proposed substation due to setback distance and mature screening visibility is limited. Access roads and hardstand areas will have localised visual effects. Two proposed met masts are slender structures of 115m in height will not be imposing in terms of visual impact.

9.14.40 Regarding cumulative visual effects the permitted Bracklyn windfarm located approximately 519m west of the northern cluster will have the largest cumulative visual effect occurring within 5km of the proposed development where the proposed turbines and permitted Bracklyn Wind farm will be viewed together. Views beyond 5km of the proposed turbine are limited due to intervening vegetation within a flat landscape. As the northern cluster of the proposed development and the permitted Bracklyn turbines are located in close proximity from beyond 5km the two wind farm developments will be viewed as one coherent windfarm (VP02, VP05, VP08, VP11, VP12. VP13) limiting cumulative effect. Residents in close proximity to the northern cluster (VP01, VP 03 and VP10) will have views of additional turbines in combination with the permitted Bracklyn turbines as a result of the proposed development. The majority of the proposed development and permitted Bracklyn turbines are screened from views to the north of the site. As seen in VP01 and VP18 from the north of the site the majority of turbines are screened from view due to screening from vegetation within the landscape. The proposed Ballivor turbines when visible with the permitted Bracklyn turbines in some cases will increase the horizontal extent of turbines in the view as seen in VP03. The proposed turbines are similar in height to the permitted Bracklyn turbines and will appear as a coherent addition to the permitted Bracklyn windfarm. From the west the Bracklyn turbines appear more prominent and the permitted turbines are viewed as additional features behind. As seen in VP10 the permitted Bracklyn turbines are visible behind the hill due to the screening from the topography and vegetation in this location, only a small number of the proposed turbines are visible and appear as turbines within the permitted Bracklyn windfarm.

9.14.41 The proposed turbines and permitted Bracklyn turbines appear as one coherent northern cluster from elevated vantage points within the LVIA study area. As VP02 presents a view from the Hill of Tara the proposed turbines appear as two coherent clusters in the background of the view with the permitted Bracklyn turbines contained in the northern cluster. The proposed Milltown pass and permitted Yellow River turbines may also be visible in this view to the south of the proposed development. Due to the expansive nature of the view all turbines within this view will be barely distinguishable due to distance therefore no significant cumulative visual effects occur from this location. It is unlikely that there will be views of the proposed development in combination with other windfarm developments excluding Bracklyn from other elevated vantage points within the LVIA study area due to the nature of the flat landscape and distance between the southern cluster and other cumulative developments. Any elevated vantage points to the south of the proposed development may have views of other turbines in a different field of view from the proposed development. Due to distances between the proposed development and other developments it is deemed no significant cumulative landscape effects occur.

9.14.42 Comparative ZTV shows that the cumulative visibility over that of the existing and permitted turbines within the LVIA study area only increased in a small number of areas due to the addition of the proposed development. No significant impact on the extent of cumulative visibility within the LVIA study area. In general this is a large, flat and expansive landscape type with vegetation throughout the landscape making it an acceptable area to absorb and accommodate a large number of wind turbines.

Assessment of Landscape chapter

9.14.43 I consider that the EIAR has comprehensively assessed the visual impacts arising as a result of the development and has demonstrated that the proposed development can be accommodated without resulting in significant adverse effects on the overall landscape character and sensitivities of the area. A detailed description of the baseline landscape is provided and an assessment of the direct effects on the landscape of the site, as well as the effects on landscape character and impact on

sensitive landscape receptors and landscape character areas. Visibility of the turbines was assessed from receptors within the study areas extending to 25km (and 26.1km for the Hill of Tara). I accept that visibility of the proposed development will be limited from locations beyond 5km from the windfarm site. Siting of the proposed turbines at a low base elevation in this flat landscape with highly vegetated working fields in the surrounding area largely restricts wider visual exposure. Visibility of the turbines beyond the immediate landscape setting occurs in localised areas of high elevation.

9.14.44 Sixteen of the turbines are sited within Westmeath LCA 3 (River Deel Lowlands) deemed to be low sensitivity as there are no high amenity areas and does not comprise any unique landscape features of county or national importance. The LCA as well as LCAS in Westmeath was designated as low capacity for wind energy development. The remaining 10 proposed turbines are within Meath LCA 15 South West Lowlands, designated as medium potential for wind energy development. Photomontages used to assess the visual effects arising as a result of the proposed development concluded that no profound or very significant effects arise at any of the viewpoints. Residual effects of significance occur at VP03 as the turbines are within 1km. Moderate effects occur at 3 of the 19 and all other viewpoints were assessed as resulting in slight residual effects. I consider that the analysis of visual effects is an accurate assessment of residual effect.

9.14.45 Slieve na Calliagh and Loughcrew Megalithic Tomb, (designated Meath scenic view) located approximately 18.9km northwest of the closest turbine. Residual effects were deemed to be moderate as the proposed turbines read coherently in the expansive and long ranging landscape view. The designated view from Hill of Tara 26.1km from the nearest turbine residual visual effect was deemed to be slight given the distance and character / expansive nature of the view. Regarding layout the siting and proposed uniform spacing allows for the two turbine clusters to be read visually as one contiguous development in the landscape.

9.14.46 I consider that the photomontages submitted with the application support the conclusions outlined. The site comprises a rural working landscape strongly modified

by historical peat extraction and agriculture in the wider hinterland. The flat landscape with numerous layers of hedgerows in the wider locality provides a degree of containment or enclosure. I note the potential for local cumulative impact arising from the permitted Bracklin windfarm, however it is recognised that the landscape has a capacity to accommodate windfarms of this nature and this is reflected in the policy context. Having reviewed the details of the proposed development, I consider that the applicant has provided a comprehensive assessment of the landscape and visual impacts of the proposed development on the landscape and visual amenities of the area. Photomontage viewpoints are comprehensive and representative of the respective visual receptors.

9.14.47 I have noted the concerns raised by third party observers regarding reliance on vegetation screening given the scale of development, seasonal change and implications of ash dieback. I acknowledge that the visual effects will not be static and will obviously vary over time. However I consider that the assessment of landscape and visual effects has clearly demonstrated that the landscape has the capacity to accommodate the development and will not give rise to unacceptable impacts. I consider that the information provided is sufficient to allow the impacts of the development to be fully assessed. I am satisfied that the proposed development on the whole would not give rise to any unacceptable additional adverse visual impacts on residential receptors, scenic views, scenic routes recreational / tourist destinations or transport routes. Regarding cultural heritage and in relation to UNESCO World Heritage Royal Sites of Ireland tentative list entry, I accept the that given the distance of the proposed development from the Royal sites, location within peatland landscape, deemed to be of relatively low sensitivity and highly suitable for wind energy development, set back from population centres and highly sensitive visual receptors, absorption capacity of the landscape and absence of obstruction of key sensitive features, the scale and form of the proposed development will not result in significant landscape and visual effects. Based on these considerations significant effect on setting or outstanding universal value does not occur. I am satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on the archaeological, architectural or cultural heritage of the area.

9.15 Material Assets.

9.15.1 Chapter 14 of the EIAR addresses material assets. A traffic and transport assessment carried out by Alan Lipscombe, Traffic and Transport consultants, sets out the scoping and consultation carried out with statutory consultees, environmental bodies and other interested parties. The methodology and structure of the assessment is clearly set out. A detailed assessment of the local road network for construction operation and decommissioning traffic including the turbine component haul route from the M3 Motorway to the west of Dunshaughlin is provided. (Fig 14-1) A number of ports can be accessed from the M3 motorway. Alternatives considered include Shannon Foynes and the Port of Galway Dublin and Cork. The route from the M3 onto Dunshaughlin, leading to northwest on the R154 for 2.5km towards the roundabout junction with the R154. The route heads northwest on the R154 for 14kms towards the town of Trim where the route negotiates the town using Patrick's Street to access the R161 ring road. The route then travels southwest on the R161 for 7.6km before turning right onto the R156. From this point the route travels northwest for 11.2km on the R156, negotiating the bridge over the River Boyne, the 90 degree bend at Moyfeigher and the village of Ballivor before reaching the proposed site access junction on the R156 4.5km west of Ballivor.

9.15.2 The main site access junctions are located at the existing access to the bogs to the north and south of the R156. The delivery route for HGV construction traffic may vary depending on the location of quarries and suppliers used. It is envisaged that general construction traffic may travel to the site via the turbine delivery route, or via the M4/N4 and the R156 from the west or the N52 from the north. Regarding existing traffic volumes the process adopted to produce background traffic volumes is set out. The assessment of the effects of traffic generated during the construction of the proposed development is considered in two stages. Stage 1 for site preparation and groundworks, turbine foundation development and stage 2 component delivery. During stage 1 construction phase, based on trip rates typical to windfarm projects, it is estimated that a total of 89,789 loads will require to be delivered to the site by trucks and HGVs as set out in the table 14.10. During stage 2 Turbine Construction stage, including delivery and assembly, a total of 234 trips will be made to and from the site by extended attics with a further 182 trips made by conventional large articulated

HGVs. It is estimated that a maximum of 100-120 staff members will be employed on the site at any one time during site preparation and groundworks stage of construction reducing to a maximum of 80 staff at any one time during the turbine construction stage. Assuming staff travel by car at an average of 2 persons per car, then a total of 120PCU movements will be added to the network during groundworks stage reducing to 80PCU trips during turbine construction stage. Operational traffic will be minimal in terms of the wind farm maintenance. Visitors travelling to the site for amenity purposes suggest a forecast of 30-40 trips on a typical day.

9.15.3During the stage 1 concrete pouring 26 days an additional 480PPCUs will travel on the delivery route roads. The percentage increase in traffic volumes experienced on the study network roads will be between 1.3% on the M4 east of Kinnegad, and 64.4% on the R161 between Trim and Doolistown. During stage 1 site preparation and groundworks on average an additional 991 PCUs will travel on the study network roads during this stage. On these 484 days, the percentage increase in traffic volumes experienced on the study network roads will be between 2.7% on the M4 east of Kinnegad and 133% on the R161 between Trim and Doolistown. During Stage 2 – Turbine Delivery Stage the additional 180PCUs (made up of cars and large extended artics) will appear on the delivery route for 47 days. On the days this impact occurs volumes will increase between 0.6% on the M3 south of Dunshauglin and 24.2% on the R161 between Trim and Doolistown. This period may result in the most significant traffic impact due to slow speeds, size and geometric requirements of these vehicles. The provision of traffic management measures will be required to minimise the impact. During stage 2 turbine construction stage for 26 days along delivery route 109 additional PCUs (cars and standard HGVs) will travel on the network. Volumes will increase between 0.4% on the M3 south of Dunshaughlin and 14.6% on the R161 between Trim and Doolistown. Background traffic volumes and development generated traffic volumes are shown for typical construction day scenarios in Table 14.14 to 14.17 with traffic effects in Table 14.18 to 14.21.

9.15.4An assessment of the impact on link capacities in the study area was undertaken for the various construction stages. Based on the assessment it is noted that .

- On the M3 Motorway the link capacity is forecast to operate at 59% for the no-nothing scenario, increasing to a maximum of 61% during the construction of the development.
- On the regional network the R154 is forecast to operate over capacity for the do nothing scenario at 152% increasing short term to a maximum of 164% for the 484 days on which general site works and construction is undertaken.
- From the R161 between Trim and Doolistown, background traffic flows are low with forecasts showing that this road will operate at 15% of capacity, increasing short term to a maximum of 35% during the 484 days for general site works and construction.
- The R156 is forecast to operate at 92% capacity for the do-nothing scenario, increasing to 112% short term for the 484 days on which general site works and construction is undertaken.

  It is asserted that while the background link flows on sections of the regional road network on the delivery route are high, the forecast increases due to the construction of the proposed development are manageable and short term. In terms of actual effects on the road network and specifically on junctions the capacity of junction most affected is the R161-R156 junction. Capacity assessment found that additional trips passing through the junction will have a slight effect, increasing the maximum ratio of flow to capacity (RFC) at the junction for the traffic movements impacted from 4.5% to 12.3% in the AM peak hour (for traffic accessing the R156 from the R141) and from 9.0% to 17.1% during the PM peak hour (for same movement). For the year 2026 scenario including construction traffic generated by the proposed development, the maximum RFCs for the AM and PM peak hours are 12.3% and 17.1% respectively, which are within the acceptable limit provided by TII of 85%.

9.15.5 Regarding traffic management measures for abnormal loads these include identification of a delivery schedule, details of alterations required to infrastructure and a dry run of the route using vehicle of similar dimensions. Extensive route proofing and consultation with the roads authorities and An Garda Siochána and abnormal loads will be delivered during night time hours. Assessment of the

abnormal load route (M3 R125 R154 to Trim and R161 and R156 Fig 14.1) included an assessment of turning requirements (swepth path analysis) of the abnormally sized loads or locations along the route. The swepth path analysis identified the need for some remedial /accommodating measures to include:

- M3 Junction 6/R125 Roundabout. Levelling and surfacing works to centre island of roundabout. Temporary removal of road signs.
- R125 / R154 roundabout. – Levelling and surfacing of centre island and traffic island at the north western exit onto the R154 arm of the roundabout. Temporary removal of road signs.
- R154 roundabout approaching Trim. Strip of centre island and removal of temporary removal of signage.
- R154 / R160 Roundabout bypass Trim. Temporary removal of street furniture planters and roads signs. Movement of telephone pole and road sign to the north and bollards on southern side temporarily.
- Double Bend on Patrick Street, Trim. Temporary road widening on north side of first bend, Lamp post and vegetation to be relocated. Lamp post at western bend and zebra crossing poles temporarily removed.
- R161 R 156 junction. – Surfacing of area of third party land on southern side of R156 required. 2 telegraph poles one sign post and road sign section of fence and hedgerow to be temporarily removed.
- Bridge over River Boyne. – Pruning of horizontal plane of various trees.
- Left hand bend on R156. Aera of third party land required to negotiate abnormal loads. Road widening and temporary removal of telegraph pole trees vegetation and traffic signs,
- Right hand bend on R156. Narrow strip of road widening on north side of R156. Temporary removal of gate, telegraph poles trees vegetation and traffic signs.
- Site Access Junctions A and B on R156. Visibility splays. Design to accommodate swepth path analysis requirements of 76m blade transporter using temporary over run areas.

- Site access junction C (crossing point between Bracklyn and Liscloher bogs) on local road for construction traffic.

9.15.6 In terms of likely and significant effects and associated mitigation during the construction phase it is noted that during Construction stage 1 when concrete foundations are poured the effect on the surrounding network will be negative resulting in an increase in traffic levels ranging from 1.6% on the M3 to an increase of 64.4% on the R161 between Trim and Doolistown. The effect will be negative temporary and slight. During the remaining 484 days of construction stage 1 for the site preparation and ground works when deliveries to the site will take place, the effect on the surrounding road network will be negative resulting in an increase in traffic levels ranging from 3.2% on the M3 to an increase of 133% on the R151 between Trim and Doolistown. While the percentage increase at this location is high, it is accentuated by the relatively low background traffic volume. The effect is negative short term and slight. During the 47 days of construction stage 2, when the abnormally sized component parts of the wind turbine plant are delivered by extended articulated HGVs, the effect of the additional traffic will be moderate due to the size of vehicles involved. This will result in increased volumes between 0.6% on the M3 to 24% on the R151 between Trim and Doolistown but will be temporary and the effect may be reduced to slight by nighttime delivery. Impacts will be negative and temporary. During the 26 days of the construction stage 2 when smaller sections of the blades and other smaller components for the turbines are delivered to the site by means of standard HGVs the additional traffic generated will result in a negative impact on the surrounding road network, increasing traffic levels ranging from 0.4% on the M3 to increase of 14.6% on the R161 between Trim and Doolistown. The effect will be negative and temporary.

9.15.7 Operational phase effects on the surrounding road network will be neutral and long term. Recreational and amenity proposals will give rise to small volumes of traffic (up to 40 car trips on a typical day and potentially 70 on weekends). No significant effects are anticipated on roads and traffic. Decommissioning phase will involve disassembly

of turbine towers and equipment for recycling and waste disposal. It is proposed that turbine foundations hardstanding areas and access roads will be left in situ.

9.15.8 Regarding cumulative impact it is noted that the permitted Bracklyn Wind farm development delivery route is from the west via the N52 rather than from the M3 and the east for Ballivor. It is likely that routes used for general materials including sand and stone will overlap during construction phases. If the two projects are constructed at the same time there will be a temporary and moderate level of cumulative impact. A slight potential for cumulative traffic effects with Yellow River Windfarm is also noted. Careful scheduling of deliveries will mitigate effects.

9.15.9 Mitigation measures are set out at 14.1.9.6 involving proposals for mitigation both in construction and operational stages. Design mitigation includes selection of most appropriate delivery route and construction of temporary improvements to local road network at specified locations. During construction stage significant coordination and planning will be put in place to minimise effects of additional traffic to include:

- Scheduling of construction program
- Use of material from borrow pits
- Delivery programme to be agreed with relevant authorities.
- Traffic Management Plan.
- Appointment of Traffic Management Co-ordinator.
- Delivery programme to be agreed with relevant authorities.
- Information to locals.
- Pre and post construction road condition survey.
- Reinstatement of road surfaces and boundaries to pre development condition.
- Liaison with relevant local authority during delivery phase.
- Implementation of temporary alterations to road network at critical junctions.
- Identification of delivery routes.

- Timing of delivery for large turbine components.
- Travel plan for construction workers.
- Improvements to vertical alignment of the R156 adjacent to access junctions A and B.
- Additional measures to minimise the effects of the development traffic on the surrounding road network, including wheel washing facilities and sweeping / cleaning of local roads as required.
- All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.

9.15.10 No mitigation measures are required for the operational stage. Improvements to the R156 and unnamed local road and the three amenity car parks will be of general benefit to traffic. A decommissioning plan, including a material recycling / disposal and traffic management plan, will be prepared for agreement with the local authority prior to decommissioning. Overall during the 24 month construction stage it is forecast that the additional traffic that will appear on the delivery route will have a slight, negative and temporary impact on existing road users which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan. No significant residual impacts during construction, operation or decommissioning are anticipated.

Assessment

9.15.11 Having regard to the nature and scale of the proposed development, it is clear that the greatest potential for negative impacts on traffic and transportation arises during the construction phase, and there will be minimal traffic generated during the operational phase.

9.15.12 In relation to submissions of the local authorities I note that Westmeath County council recommended pre condition survey of haulage routes, pavement strength analysis and culvert bridge capacity analysis reports for roads identified as haul roads.

Pre and post condition survey and ongoing maintenance programme during construction to include security bond and specific special development contribution. Meath County Council recommended conditions to apply regarding road safety audits, traffic management plan, road condition survey, bridge protection, protocols to inform residents, phasing and road opening licences. Transport Infrastructure Ireland TII set out requirements including relevant permits, consultation with PPP companies and motorway maintenance and renewal contract contractors and road authorities, and compliance with TII publications. A number of third party observers raised concerns regarding adequacy of haul route particularly the R156, sections of which have no foundations. Concerns were also raised with regarding to the accuracy of baseline traffic figures and projections and specific concerns with respect to impacts on other road users in particular school traffic.

9.15.13 I consider that construction traffic management can, as proposed, be addressed through engagement with the local authority, timing of HGV movements, use of convoy systems, etc. Given the short term and temporary nature of the impacts, I consider that a robust Construction Traffic Management Plan could adequately address the concerns raised by observers. With regard to potential conflicts between wind farm construction traffic and local road users, I note the relatively limited length of time related to the construction period, the sparsely populated rural nature of the site and the low level of traffic currently utilising the roads. While clearly there are likely to be short-term temporary negative impacts on the receiving environment due to construction traffic, these impacts are of a type that lend themselves to effective mitigation through a comprehensive CTMP and suitable planning conditions.

9.15.14 I consider that the provision of pre-condition surveys and reinstatement works as proposed, and with the imposition of bonds for the satisfactory completion of such works, by way of condition, will ensure the road network is protected. Given the temporary nature of construction works and the negligible level of operational traffic, I consider that the road network can accommodate such traffic. I consider that the short-term negative impacts of construction traffic would be outweighed by the long-term positive impacts of a renewable energy project. Operational traffic will be minimal

and as regards the decommissioning phase works will be similar to the construction phase, but to a lesser extent. I am satisfied that, subject to compliance with a decommissioning plan to be agreed with the planning authority, the traffic impacts associated with the decommissioning phase would not be significant.

9.15.15 I have considered all of the written submissions made in relation to traffic and transportation and the relevant contents of the file including the EIAR. I am satisfied that the potential for significant adverse impacts on traffic and transportation can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, the proposed mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on traffic and transportation.

Other material assets. Telecommunications & Aviation.

9.15.16 Following consultations with a number of telecommunications operators refinements were made to turbine locations to avoid interference risk. Scoping request with RTE noted transmission link running through the site and a requested setback. Further correspondence noted no impacts with final proposed design. Virgin media confirmed no links with windfarm site and other operators are not subject to interference from the proposed development.

9.15.17 In relation to aviation the Department of Defence scoping request response outlined requirements for obstacle lighting. It is proposed that turbines be included on mapping fitted with obstruction lighting and entered into navigation database. Irish Aviation Authority (IAA) indicated no impacts anticipated on nearby aviation assets and recommended aeronautical obstacle warning light scheme and as-constructed maps of the turbines to be submitted to them. In addition notification of crane operation 30 days prior to erection of turbines is requested.

9.15.18 I am satisfied that the environmental impacts of the proposed development at construction and operational phases on telecommunications have been adequately

described and mitigation measures outlined. I conclude that there will be no significant effects and no residual effects on telecommunications.

9.15.19 Regarding potential cumulative effects on material assets between the proposed development and other projects in the vicinity those included for cumulative assessment included but were not limited to the consented Bracklyn Windfarm the peatland rehabilitation plans and PCAS. No significant cumulative effects on water supply or waste management are expected. No significant effects on electricity infrastructure during the construction or operational phase. The supply of 117MW to 169MW of electricity to the national grid during the operational phase of the proposed development offsetting the use of fossil fuels within the electricity generating sector is a significant positive residual impact on electricity supply. The provision of clean electricity in conjunction with the operational phase Bracklyn windfarm which is a positive significant cumulative effect on electricity supply. No significant cumulative effects on telecommunications and aviation are identified.

9.15.20 In terms of existing built services and utilities the development connects the proposed on site substation into the existing 110kV Mullingar to Corduff overhead transmission line which traverses the site in an east west orientation at Carranstown Bog. Regarding water supply no significant effects on quality or quantity of water supply has been identified. Regarding waste management, CEMP sets out a waste management plan (Appendix 4.1 of the EIAR) which sets out methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction, with disposal of waste a last resort. No significant effects and no residual effects with regard to waste management.

Assessment of Material Assets

9.15.21 I have considered all of the written submissions made in relation to material assets and the relevant contents of the file including the EIAR. I am satisfied that the potential for significant adverse impacts on traffic and transportation can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, the proposed

mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on traffic and transportation.

9.15.22 I consider that the information provided in respect of material assets including telecommunications, built services and utilities in the EIAR documentation is sufficient to allow the impacts of the proposed development on material assets to be fully assessed. I am satisfied that the impacts identified on material assets are not significant, and where they could potentially occur, they can be avoided, managed or mitigated by measures forming part of the proposed scheme and by relevant conditions. I am, therefore, satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on material assets of the area.

9.16 **Interaction**

9.16.1 Interactions between the various environmental factors are discussed in Chapter 16 of the EIAR. A matrix is provided in Table 15.1 which outlines potential interactions during the construction and operational phases. The main potential for interactions which would give rise to negative effects on population and human health arise from impacts from air, climate and noise, land soils, water, landscape and visual. With regard to biodiversity the main potential interactions which would give rise to negative effects arise from land/soils/geology, water, air and climate noise and vibration and landscape. The main potential interactions in relation to ornithology which would give rise to negative effects relate to water, lands soils and geology air and climate and noise and vibration. The main interactions for land soil and geology which would give rise to negative effect arise from water, archaeology, architectural and cultural heritage and landscape. The main interactions likely to occur with regard to air and climate which would give rise to negative effects arise from material assets. The interaction of landscape and visual impacts and cultural heritage have the potential for negative effect.

9.16.2 All of the potential impacts on the individual environmental factors have been assessed. I am satisfied that any such impacts can be avoided, managed and mitigated by the measures which form part of the proposed development and any recommended planning conditions attached to any grant of permission. Overall, it is considered that the proposed development will have a positive international, national regional and local impact particularly in relation to population, human health, air quality and climate.

9.16.3 Each topic chapter in the submitted EIAR has considered cumulative impacts at all stages of development. The potential cumulative impacts primarily relate to nuisances (such as emissions, traffic etc) arising from the construction of the development, with other planned or existing projects, and each of the EIAR chapters has regard to these in terms of the assessment of effect and mitigation measures proposed. Having considered the details as submitted it is concluded that the culmination of effects from the planned and permitted development and that currently proposed would not be likely to give rise to significant effects on the environment, other than those that have been described in the EIAR and considered in this EIA.

9.17 Mitigation

9.17.1 Chapter 17 sets out a comprehensive schedule of mitigation and monitoring phases also specifying frequency, reporting and responsibilities. Additional mitigation measures have been outlined during the course of the application in response to submissions and in the response to the Board's further information request.

9.18 Reasoned conclusion on the significant effects.

9.18.1 Having regard to the examination of environmental information contained above, and in particular to the EIAR and supplementary information provided by the applicant, and the submissions from the planning authority, prescribed bodies and observers in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

Population and human health – Short term positive economic and employment impacts during construction phase, with long-term positive economic effect during operation resulting from clean high quality energy supply, community funding, amenity provisions and investment. Slight negative impact is anticipated from traffic noise, volume and dust during construction. With the application of mitigation, largely comprising best practice and implementation of a Construction Environmental Management Plan, no significant residual effect upon human health / safety is expected. Mitigation measures set out in the EIAR will ensure that the project will not result in significant impacts upon population in relation to shadow flicker and noise.

Landscape and Visual Impact One of the most significant effects arising relates to the visual impact arising from the erection of 26 no wind turbines of a total tip height of 200m. This will be most discernible in the immediate locality particularly within 5km. However the receiving environment is not considered to be particularly sensitive in visual amenity terms and the peatlands have been identified as a suitable area to which wind energy development is directed. The cumulative impact in conjunction with the permitted Bracklyn windfarm on the immediate locality will be significant and material in terms of visual presence due to height and scale however the context has clearly been subject to historical landscape alterations in terms of industrial peat extraction, settlement and infrastructure and has the capacity to absorb such change.

Biodiversity – Potential significant effects on habitats, mammals, bats, birds and aquatic ecology in the construction phase and bats in the operational phase which would be mitigated by the implementation of the mitigation measures contained in the Environmental Impact Assessment Report, including the Construction Environmental Management Plan, good practice construction measures, timing of vegetation removal, water pollution prevention measures, provision of bat boxes, use of buffer zones, blade feathering and buffering, biosecurity measures and the appointment of an Ecological Clerk of Works and Environmental Manager. The loss of a small area of Oak Ash Hazel Woodland on a mineral island at Caranstown (WN2) can be avoided by modification of borrow pit proposals. Further pre-commencement biodiversity surveys are also proposed. Potential significant negative impact on population of marsh fritillary Annex II species at local and county importance via direct mortality from encroachment of machinery onto breeding sites in close proximity to construction footprint to be mitigated by way of pre-construction survey, erection of protective

fencing under supervision of suitably qualified ecologist and modified construction methodology, and marsh fritillary management plan. With regard to potential impact on avifauna impacts, including cumulative impacts in terms of potential bird collisions have been assessed and considered in the EIAR. This included an assessment of potential impacts on bird species which frequent the area. Impacts on avifauna during both construction and operational phases are assessed as being minimal. Collision risk potential in relation to migratory Greenland White Fronted Goose species has been assessed by reference to recent studies as outlined in response to further information and it has been concluded that the species is not a significant collision risk.

Lands, Soils, Water, Air and Climate: Potential significant effects on hydrology hydrogeology and soils would be mitigated by a series of best practice construction and management pollution prevention measures outlined in the EIAR and Construction Environment Management Plan. Use of buffer zones, erosion control and pollution prevention measures. Positive air quality and climate impacts arise in the operational phase due to the offsetting of fossil fuels by the generation of renewable energy. Construction noise will be mitigated by measures outlined in the CEMP. Noise will be mitigated by curtailment of turbine operation if required.

Material Assets - No significant residual effects are predicted to result with respect to material assets including land use, telecommunications, electricity networks, air navigation, quarries, and utilities (gas, water and waste), arising from the project. Regarding traffic and transportation – direct, negative, negligible to minor impact, that is short-term, will arise during the construction phase and is appropriately mitigated by way of Traffic Management Plan and Construction and Environmental Management Plan.

Archaeology and cultural heritage Potential for the presence of unrecorded archaeological features on the site with mitigation by way of archaeological monitoring.

The EIAR has considered that the main significant direct and indirect and cumulative effects of the proposed development on the environment. Following mitigation, no residual significant long-term negative impacts on the environment or sensitive receptors are likely to be experienced. The visual impact on the local context will change. The proposal will have a positive impact in terms of promoting and utilising

more sustainable forms of renewable energy and in terms of the provision of local amenity access. I am, therefore, satisfied that the proposed development will not on the whole, have any unacceptable direct, indirect or cumulative effects on the environment during the construction or operational phase.

I am satisfied that the information provided is reasonable and overall is sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment. Overall, I am satisfied that the information contained in the EIAR complies with the provisions of Article 3, 5 and Annex (IV) of EU Directive 2014/52/EU.

10.0 Appropriate Assessment – Stage 2

10.1 Appropriate Assessment

The requirements of Article 6(3) as related to appropriate assessment of a project under part XAB, sections 177U and 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section.

The areas addressed in this section are as follows:

• Compliance with Article 6(3) of the EU Habitats Directive

• Screening the need for appropriate assessment

• The Natura Impact Statement and associated documents

• Appropriate assessment of implications of the proposed development on the integrity each European site.

10.2 Compliance with Article 6(3) of the EU Habitats Directive

The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of

the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site before consent can be given.

In accordance with these requirements the Board, as the competent authority, prior to granting a consent must be satisfied that the proposal individually or in combination with other plans or projects, is either not likely to have a significant effect on any European Site or adversely affect the integrity of such a site, in view of the site(s) conservation objectives.

The proposed development is not directly connected with or necessary to the management of a European site and therefore is subject to the provisions of Article 6(3).

10.3 Screening Determination. (Refer to Appendix 1)

In accordance with Section 177U(4) of the Planning and Development Act 2000 (as amended) and on the basis of objective information it has been concluded that the proposed development is likely to have a significant effect the River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA 'alone' in respect of effects associated with ex situ habitat loss, and disturbance during construction and deterioration in water quality due to release of pollutants including suspended solids and hydrocarbons during construction, operation and decommissioning phases of the development. The potential for collision risk in relation to Kingfisher QI of River Boyne and River Blackwater SPA in the operational period has also been identified. On a precautionary basis likely significant effects alone on QI species Greenland white fronted goose associated with Lough Derravarragh SPA, Lough Iron SPA, Wexford Harbour and Slobs SPA, and Garriskil Bog SPA has been identified due to potential vulnerability to mortality due to collision.

It is therefore determined that Appropriate Assessment (stage 2) under Section 177V of the Planning and Development Act 2000 is required on the basis of the effects of the project 'alone'.

Following the screening process, as detailed in Appendix 1, it has been determined that appropriate assessment is required as it cannot be excluded on the basis of objective information that the proposed development either individually or in combination with other plans or projects will have a significant effect on the following European sites:

- River Boyne and River Blackwater SAC {002299}
- River Boyne and River Blackwater SPA [004232]
- Lough Derravaragh SPA [004043]
- Lough Iron SPA [004046]
- Wexford Harbour and Slobs SPA [004076]
- Garriskil Bog SPA [004102]

The possibility of significant effects on the other European sites has been excluded on the basis of objective information. The following European sites have been screened out for the need for appropriate assessment:

- Mount Hevey Bog SAC [002342]
- Girley Drewstown Bog SAC [002203]
- Woodown Bog SAC [002205]
- Lough Lene SAC [002121]
- Boyne Coast and Estuary SAC [001957]
- Lough Ennel SPA [004044]
- Lough Owel SPA [004030]
- Boyne Estuary SPA [004080]

Measures intended to reduce or avoid significant effects have not been considered in the screening process.

10.4 The Natura Impact Statement

The Board will note that a Natura Impact Statement (NIS) compiled by MKO Planning and Environment Consultants and dated 24 March 2023 was submitted as part of documentation provided in the application. The NIS seeks to assess the likely or possible significant effects, if any, arising from the proposed development on the following European sites.

River Boyne and River Blackwater SAC

River Boyne and River Blackwater SPA

The assessment is based on surveys undertaken in connection with the proposed development over the period October 2019-February 2023. The applicants NIS was prepared in line with best practice and provides an assessment of the impact of the proposed development on the above listed European sites. The applicants NIS concludes that "*Where the potential for any adverse effect on any European Site has been identified, the pathway by which such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and appendices. The measures ensure that the construction, operation and decommissioning of the Proposed Development will not have an adverse effect on the integrity of any European sites in light of their conservation objectives. Following an examination, evaluation and analysis, in light of best scientific knowledge and the conservation objectives of the site, and, on the basis of objective information, having taken into account the relevant mitigation measures, it can be concluded that the proposed development will not have an adverse impact on any European Sites, either alone or in combination with other plans or projects.* "

In terms of consultations and submissions the submission from the NPWS indicated acceptance that the Appropriate Assessment as set out in the NIS of the potential effects of the proposed windfarm on the qualifying interests for the River Boyne and River Blackwater Special Area of Conservation (SAC) and the River Boyne and River Blackwater SPA, it indicated concern that certain impacts of the proposed development on fauna and habitats from a nature conservation perspective required further assessment and clarification specifically raising questions in relation to collision

risk with reference specifically to Whooper Swan and Greenland White fronted goose. Submission from Westmeath County Council recommends implementation of mitigation measures as set out in NIS and CEMP and also queried potential impact on night migrating birds. The submission from Meath County Council notes requirements with respect to NIS contributors expertise, collision risk noting kingfisher flightline within the site with respect to T21, and matter of in combination impacts with solar developments in the vicinity.

The submissions from the first party in response to the prescribed bodies and third party submissions and in response to the Board's request for additional information addressed, inter alia, these matters.

Having reviewed the documents, submissions and consultations with the NPWS Meath County Council and Westmeath County Council and the third parties, I am satisfied that the information provided allows for a complete assessment of any adverse effects of the development, on the conservation objectives of the following European sites alone, or in combination with other plans and projects,

River Boyne and River Blackwater SAC [002299]

River Boyne and River Blackwater SPA [004232]

Lough Derravaragh SPA [004043]

Lough Iron SPA [004046]

Garriskil Bog SPA [004102]

Wexford Harbour and Slobs SPA [004076]

10.5 Appropriate Assessment of Implications of the Proposed Development

The following is a summary of the objective scientific assessment of the implications of the project on the qualifying features of the European sites using the best scientific knowledge in the field. All aspects of the project which could result in significant effects are assessed and mitigation measures designed to avoid or reduce any adverse

effects are considered and assessed. Guidance adhered to in the assessment includes:

• DoEHLG (2009), Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, National Parks and Wildlife Service, Dublin.

• EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 sites. Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/42/EC.

EC(2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC.

10.6 European Sites

The following European sites are subject to Appropriate Assessment.

River Boyne and River Blackwater SAC [002299]
River Boyne and River Blackwater SPA [004232]
Lough Derravaragh SPA [004043]
Lough Iron SPA [004046]
Garriskil Bog SPA [004102]
Wexford Harbour and Slobs SPA [004076]

A description of the sites and their conservation and qualifying interests are set out as follows including table setting out the qualifying interests: I have examined and evaluated the Natura 2000 data forms as relevant and the conservation objectives and supporting documents for these sites, available through the NPWS website. I am satisfied that in combination effects have also been considered and adequately assessed.

European Sites and Qualifying Interests.	
European Sites	**Qualifying Interests**
River Boyne and River Blackwater SAC [002299]	Alkaline fens [7230] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Lampetra fluviatilis (River Lamprey) [1099] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355]
River Boyne and River Blackwater SPA [004232]	Kingfisher (Alcedo athis) [A229]
Lough Derravaragh SPA [004043]	Whooper Swan (Cygnus cygnus) [A038] Pochard (Aythya ferina) [A059] Tufted Duck (Aythya fuligula) [A061] Coot (Fulica atra) [A125] Wetland and Waterbirds [A999]
Lough Iron SPA [004046]	Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Shoveler (Anas clypeata) [A056] Coot (Fulica atra) [A125] Golden Plover (Pluvialis apricaria) [A140] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]

Garriskil Bog SPA [004102]	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395
Wexford Harbour and Slobs SPA [004076]	Little Grebe (Tachybaptus ruficollis) [A004] Great Crested Grebe (Podiceps cristatus) [A005] Cormorant (Phalacrocorax carbo) [A017] Grey Heron (Ardea cinerea) [A028] Bewick's Swan (Cygnus columbianus bewickii) [A037] Whooper Swan (Cygnus cygnus) [A038] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck (Tadorna tadorna) [A048] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Mallard (Anas platyrhynchos) [A053] Pintail (Anas acuta) [A054] Scaup (Aythya marila) [A062] Goldeneye (Bucephala clangula) [A067] Red-breasted Merganser (Mergus serrator) [A069] Hen Harrier (Circus cyaneus) [A082] Coot (Fulica atra) [A125] Oystercatcher (Haematopus ostralegus) [A130] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus vanellus) [A142] Knot (Calidris canutus) [A143] Sanderling (Calidris alba) [A144] Dunlin (Calidris alpina) [A149] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160]

	Redshank (Tringa totanus) [A162] Black-headed Gull (Chroicocephalus ridibundus) [A179] Lesser Black-backed Gull (Larus fuscus) [A183] Little Tern (Sterna albifrons) [A195] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]

A detailed evaluation of the Lough Derravaragh SPA [004043], Lough Iron SPA [004046], Garriskil Bog SPA [004102] and Wexford Harbour and Slobs SPA [004076], having particular regard to the species of conservation interest and the geographically limited foraging patterns associated with these birds, the lack of hydrological connection and distance from these sites, rules out potential impact on these SPA sites. On a precautionary basis and with regard to evidence of commuting Greenland white fronted geese crossing the proposed windfarm site, the potential for effect on this QI of Lough Derravarragh SPA, Lough Iron SPA, Wexford Harbour and Slobs SPA, and Garriskil Bog SPA has been identified arising from potential vulnerability to mortality due to collision.

Aspects of the Proposed Development

The main aspects of the proposed development that could adversely affect the conservation objectives of European Sites include:

• Impacts arising from the excavation of turbine bases and other construction activity resulting in mobilisation of silt and other contaminants to surface waters.

• Impacts arising from the use of construction materials and equipment on site and potential discharge to surface and ground waters.

• Potential loss or fragmentation of foraging habitat of importance to European sites.

• Potential disturbance impacts from construction,

• Potential spread of invasive species.

• Potential collision risk.

Having regard to the NPWS Conservation Objectives and associated maps for the River Boyne and River Blackwater SAC and SPA, together with the information presented in the NIS, the potential for direct effects on otter and kingfisher due to ex situ habitat loss where they occur outside the SAC SPA and within the development site is assessed. QI species noted to be sensitive to changes in water quality have the potential to be impacted by the proposed development. The question of collision risk with regard to QI Greenland White Fronted Goose a QI of Lough Derravarragh SPA, Lough Iron SPA, Wexford Harbour and Slobs SPA, and Garriskil Bog SPA is also assessed in the light of information available.

The following sections address the potential for adverse effects on the conservation objectives of the above listed European sites that have been brought forward to Stage 2 assessment on foot of the screening for Appropriate Assessment undertaken. The attributes and targets for the habitats / species as per site specific conservation objectives have been reviewed in the assessment of the proposed development against nominated attributes and targets and summarised in table below.

Mitigation measures are outlined in Section 5 of the NIS. The majority of which are considered to represent best construction practice measures which include:

- Pre -construction otter and kingfisher survey to be undertaken by a qualified ecologist and in consultation with NPWS.
- Exclusion procedures in accordance with TII/NRA guidelines (2006) in consultation with NPWS.
- Construction Works in vicinity of nest site outside breeding season
- Mitigation measures to avoid impact on water quality.
- Design mitigation
- No instream works within natural watercourses
- Environment management framework pollution prevention hydrocarbon management
- Construction phase drainage and maintenance plan. Drainage infrastructure to include interceptor drains, swales, check dams. silting pond.
- Mitigation measures for watercourse crossings. – Bottomless or clear span culverts. Banks to remain undisturbed. No instream excavation. Adherence to IFI (2016) guidelines on protection of fisheries during construction works. Silt fences to be emplaced downgradient of construction area. Section 50 application (Arterial Drainage Act 1945) and river / stream crossings in accordance with OPW guidelines /requirements/. Works under supervision of Environmental Clerk of Works and project hydrologist.
- Operational phase drainage systems installed and maintained on ongoing basis.
- Mitigation to avoid release of hydrocarbons on site. Refuelling, fuel and hazardous materials storage. Bunding, Regular plant inspection. Emergency measures. Spill kits.
- Cement based products control measures
- Dust control measures.

Summary of Appropriate Assessment of Adverse effects on the integrity of the River Boyne and River Blackwater SAC

Summary of key issues that could give rise to adverse effects

- Water Quality – hydrological connectivity via Stonyford River and Deel (Raharney) River both designated as part of the SAC
- Disturbance of QI species
- Spread of invasive species.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objective To maintain or restore favourable conservation condition. Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Alkaline Fens	Maintain favourable conservation condition	No – There is no alkaline fen habitat within the site. No loss of fen habitat.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Alluvial forests with Alnus glutinosa & Fraxinus excelsior (AlnoPadion, Alnion incanae, Salicion albae)[91E0]	To restore the favourable conservation	No – No works within the SAC and alluvial forest habitat not recorded within the site.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.

- Lampetra fluviatilis (River Lamprey) [1099]	To restore the favourable conservation condition	No works within the SAC. Small watercourses and drainage ditches within the site do not support significant suitable supporting habitat for the species.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded. No doubt as to the absence of effects in view of the conservation objectives.
- Salmo salar (Salmon) [1106]	To restore the favourable conservation condition	No works within the SAC. Small watercourses and drainage ditches within the site do not support significant suitable supporting habitat for the species.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects in view of the conservation objectives
- Lutra lutra (Otter) [1355]	To maintain the favourable conservation condition	No works within the SAC. No otter resting or breeding sites recorded within the site. Watercourses within the site do not provide significant suitable fisheries.	Ex situ habitat loss. Instream works confined to artificial drains. Pre construction otter survey by qualified ecologist. If holt identified within 150m exclusion procedures in consultation with NPWS. Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Mitigation by design and water quality measures ensure that adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.					

Summary of Appropriate Assessment of Adverse effects on the integrity of the River Boyne and River Blackwater SPA

Summary of key issues that could give rise to adverse effects

- Water Quality – hydrological connectivity via Stonyford River and Deel (Raharney) River both designated as part of the SPA
- Disturbance during construction
- Collision Risk

	Summary of Appropriate Assessment				
Qualifying Interest Feature	**Conservation Objective To maintain or restore the favourable conservation condition Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Kingfisher (Alcedo atthis) [A229]	To maintain restore favourable conservation condition	Infrequent observations of species. No nesting sites identified within or adjacent to the site – No potential for direct effects on Qis SCI as result of ex situ habitat loss. Potential for adverse effects due to deterioration in water quality runoff, pollution during construction operation decommissioning Indirect effect due to disturbance Collision risk	Pre commencement survey. Pathways for impact considered in design. Mitigation outlined in EIAR and CEMP to avoid water pollution Species not recorded at potential collision height. No likely significant impact	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on th**is** habitat in view of the conservation objectives.

Overall Conclusion: Integrity Test

Following the implementation of mitigation, the construction and operation of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Summary of Appropriate Assessment of Adverse effects on the integrity of the SPA Sites - Lough Derravaragh SPA [004043], Lough Iron SPA [004046], Wexford Harbour and Slobs SPA [004076], Garriskil Bog SPA [004102] . *[14]

Summary of key issues that could give rise to adverse effects - Collision Risk

	Summary of Appropriate Assessment				
Qualifying Interest Feature	**Conservation Objective To maintain or restore the favourable conservation condition Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Greenland White Fronted Goose]	To maintain restore favourable conservation condition	Collision risk Species not recorded at potential collision height. No likely significant impact	Pre commencement survey.	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on th**is** habitat in view of the conservation objectives.

Overall Conclusion: Integrity Test
Following the implementation of mitigation, the construction and operation of the proposed development will not adversely affect the integrity of these European sites and no reasonable doubt remains as to the absence of such effects.

14 Evaluation of these SPA sites, having particular regard to the species of conservation interest and the geographically limited foraging patterns associated with these birds, the lack of hydrological connection and distance from these sites, rules out potential impact on these SPA sites. On a precautionary basis and with regard to evidence of commuting Greenland white fronted geese crossing the proposed windfarm site, the potential for effect on this QI of Lough Derravarragh SPA, Lough Iron SPA, Wexford Harbour and Slobs SPA, and Garriskil Bog SPA has been identified arising from potential vulnerability to mortality due to collision.

10.7 Appropriate Assessment Conclusions

The proposed Ballivor windfarm has been considered in light of the assessment requirements of Sections 177U and 177V of the Planning and Development Act as amended,

Having carried out a screening for Appropriate Assessment of the project. It was concluded that it may have a significant effect on the following European Sites: River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA. Lough Derravaragh SPA [004043], Lough Iron SPA [004046], Wexford Harbour and Slobs SPA [004076], Garriskil Bog SPA [004102]. Consequently an appropriate assessment was required of the implications of the project on the qualifying features of these sites in light of their conservation objectives.

Following an appropriate assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of any of the above European sites in view of their conservation objectives. This conclusion is based on a complete assessment of all aspects of the proposed project, including an assessment of in combination effects with other plans and projects, and there is no reasonable scientific doubt as to the absence of adverse effects.

11.0 Recommendation

Arising from my assessment of this case, I recommend that the Board grant planning permission for the proposed development subject to the reasons and considerations below, subject to the attached conditions and in accordance with the following Draft Order.

Reasons and Considerations

In coming to its decision, the Board had regard to the following:

(a) Project Ireland 2040 – the National Planning Framework,

(b) The Government of Ireland Climate Action Plan 2024,

(c) The Regional Spatial and Economic Strategy for the Southern Region, 2020

(d) The provisions of the Wind Energy Development Guidelines – Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government in June 2006, and Draft Amendments 2019

(e) The policies of the Planning Authority as set out in the Meath County Development Plan 2021-2027, Westmeath County Development Plan 2021-2027 including the Wind Energy Strategies for County Meath and County Westmeath,

(f) The character of the landscape in the area and of the general vicinity, and the historic use of the site,

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

(h) the likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on the relevant European Sites,

(i) the submissions and observations received in relation to the proposed development,

(j) The Environmental Impact Assessment Report submitted,

(k) The Natura Impact Statement submitted,

(l) the report and recommendation of the person appointed by the Board to make a report and recommendation on the matter.

Appropriate Assessment:

The Board considered the Screening Report for Appropriate Assessment, the Natura Impact Statement and all other relevant submissions and carried out an appropriate assessment screening exercise and an appropriate assessment in relation to the potential effects of the proposed development on the following designated European Sites:

• River Boyne and River Blackwater SAC (Site Code: 002299)

• River Boyne and River Blackwater SPA (Site Code: 004232)

On a precautionary basis and with regard to evidence of commuting Greenland white fronted geese crossing the proposed windfarm site, the potential for effect on this QI of Lough Derravarragh SPA, Lough Iron SPA, Wexford Harbour and Slobs SPA, and Garriskil Bog SPA has been identified arising from potential vulnerability to mortality due to collision.
The Board considered that the information before it was adequate to allow the carrying out of an Appropriate Assessment. In completing the Appropriate Assessment, the Board considered, in particular, the following:

i. the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,
ii. the mitigation measures which are included as part of the current proposal, and
iii. the conservation objectives for the European Sites.

The Board noted that the proposed development is not directly connected with or necessary for the management of a European Site and considered the nature, scale and location of the proposed development, as well as the report of the Inspector. In

completing the appropriate assessment, the Board adopted the report of the Inspector and concluded that, by itself or in-combination with other plans and projects in the vicinity, the proposed development would not be likely to have an adverse effect on any European site in view of the sites' conservation objectives and there is no reasonable significant doubt as to the absence of such effects.

Environmental Impact Assessment:

The Board completed an environmental impact assessment of the proposed development taking account of:

(a) the nature, scale, location and extent of the proposed development on the site,
(b) the Environmental Impact Assessment Report (EIAR) and associated documentation submitted in support of the application, including submissions in response to the Board's request for additional information,

(c) the submissions received from the prescribed bodies and observers, and

(d) the Inspector's report.

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment. The Board agreed with the examination, set out in the Inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the application.

Reasoned Conclusion on the Significant Effects:

The Board considered that the main significant direct and indirect effects of the proposed development on the environment are, and would be mitigated, as follows:

- Positive environmental impacts would arise during the operational phase from the generation of renewable energy and provision of public amenity pathways,

- The impacts on residential amenity during the construction and operational phases would be avoided by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and associated Construction and Environment Management Plan (CEMP) which include specific provisions relating to the control and management of dust, noise, water quality, traffic movement, noise monitoring and turbine pre- programming, as well as a mitigation strategy to control the level of daily shadow flicker experienced at affected dwellings.
- The impacts on biodiversity during the construction phase include disturbance to birds and bats with potential for collision risk during the operational phase and mitigation strategy devised to address such effects. Changes to water quality potentially impact aquatic habitats and species due to run-off and sedimentation of watercourses. Impacts will be mitigated by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and associated Construction and Environment Management Plan (CEMP) which include specific provisions relating to the control and management of water quality, avoidance of watercourses /streams and habitat management measures, pre-construction mammal surveys, bat protection measures and the appointment of an Ecological Clerk of Works as well as post construction monitoring.
- Positive environmental effects would arise in terms of restoration of peatland habitat.
- Roads and traffic impacts associated with the construction phase will be mitigated through preparation of a Construction Traffic Management Plan which will be agreed with the relevant local authority prior to the commencement of development.
- The risk of pollution of ground and surface waters during the construction phase which would be mitigated by the implementation of measures set out in the Environmental Impact Assessment Report (EIAR) and associated Construction and Environment Management Plan (CEMP) which include specific provisions relating to groundwater, surface water and drainage.
- Visual and landscape impacts would arise during the operational phase of the development due to the presence of the turbines and associated infrastructure in the landscape. The site is located within an area which has been identified as

having a capacity to absorb a development of this nature and scale in landscape and visual terms. The location of the site and the existing topography and landscape features provide a level of assimilation of the development into the landscape.

- The impact on cultural heritage would be mitigated by archaeological monitoring with provision made for resolution of any archaeological features or deposits that may be identified.

The Board completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures proposed, and subject to compliance with the conditions set out below, the effects of the proposed development on the environment, by itself and in combination with other plans and projects in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions of the Inspector.

Proper Planning and Sustainable Development

It is considered that subject to compliance with the conditions set out below the proposed development would be in accordance with European Energy Policy, the National Planning Framework, the Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019-2031 and the provisions of the Westmeath County Development Plan 2021-2027 and Meath County Development Plan 2021-2027. It would

- make a positive contribution to Irelands national strategic policy on renewable energy and its move to a low carbon future, and
- have an acceptable impact on the environment and on the amenities of the area.

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

Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, including further information received by the Planning Authority on the 1st day of September 2023, and 12th day of July 2024 except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

   Reason: In the interest of clarity.

2. This permission shall not be construed as any form of consent or agreement to a connection to the national grid or to the routing or nature of any such connection.

   Reason: In the interest of clarity.

3. The period during which the development hereby permitted is constructed shall be 10 years from the date of this Order.

   Reason: In the interests of clarity.

4. This permission shall be for a period of 30 years from the date of the first commissioning of the wind farm.

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

5. The following design requirements shall be complied with:
   (a) The wind turbines shall have a maximum tip height of 200m and hub height of 115m and rotor diameter 170m in accordance with turbine options assessed

in the Environmental Impact Assessment report (EIAR) and Natura Impact Statement (NIS).

(b) Cables within the site shall be laid underground.

(c) The wind turbines shall be geared to ensure that the blades rotate in the same direction.

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

Reason: In the interest of visual amenity.

6. The developer shall ensure that all construction methods and environmental mitigation measures set out in the Environmental Impact Assessment Report updated by way of further information received by the Board on 1st Day of September 2023 and 12th day of July 2024, Natura Impact Statement and associated documentation are implemented in full, save as may be required by conditions set out below.

Reason: In the interest of protection of the environment.

7. A) A suitably qualified Project Ecological Clerk-of-Works and Licenced Ecologist shall be retained by the developer to undertake pre-construction surveys at the various project elements, including any river crossings, immediately prior to commencing work in order to check for the presence of protected species in the vicinity.

B) A badger survey report by a suitably qualified mammal specialist shall be submitted for written agreement of the Planning Authority and the Department of Housing Local Government and Heritage to include mitigation measures to avoid any injuries to badger as a result of the development including site avoidance or where unavoidable exclusion of badgers from setts.

Reason: In the interest of nature conservation and the protection of ecology and wildlife in the area.

8. The 0.26ha area of oak-ash-hazel woodland growing on mineral soil island at Corranstown bog shall be retained and its boundary with the proposed borrow pit shall be agreed with the planning authority prior to the commencement of development.

Reason: In the interest of nature conservation and the protection of ecology and wildlife in the area.

9 The developer shall review usage by birds of the wind farm site and document bird casualties through an annual monitoring programme which shall be submitted by the developer to, and agreed in writing with, the planning authority prior to commencement of development. This programme shall be developed in consultation with the Department of Housing Local Government and Heritage, and shall cover the entire period of the operation of the wind farm.

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

10 The developer shall prepare an Invasive Species Management Plan for the written agreement of the planning authority and all plant and machinery used during the works should be thoroughly cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens.

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

11 The developer shall appoint a community liaison officer for all stages of the development and shall be the first point of contact for residents seeking information, making a complaint and shall be responsible for discharging information in relation to the project to residents.
During the construction phase the developer shall maintain a complaints register to record any complaints regarding but not limited to noise, odour, dust, traffic and any other environmental nuisance. The complaint register shall include details of the

complaint and measures taken to address the complaint and prevent repetition of the complaint.
Reason: In the interest of residential amenity and the orderly development of the site.

12. The operation of the proposed development, by itself or in combination with any other permitted wind energy development, shall not result in noise levels, when measured externally at nearby noise sensitive locations, which exceed:

(a) Between the hours of 7am and 11pm:

i. the greater of 5 dB(A) L90,10min above background noise levels, or 45 dB(A) L90,10min, at wind speeds of 5m/s or greater

ii. 40 dB(A) L90,10min at all other wind speeds

(b) 43 dB(A) L90,10min at all other times where wind speeds are measured at 10m above ground level.

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

Reason: In the interest of residential amenity.

13. Prior to commencement of development, the developer shall submit to and agree in writing with the planning authority a shadow flicker compliance monitoring programme for the subject development, including any mitigation measures such as the use of appropriate equipment and software to suitably control shadow flicker at nearby dwellings, including control of turbine rotation, in accordance with details which shall be submitted to, and agreed in writing with, the planning authority.

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

Reason: In the interest of residential amenity.

14. Mitigation measures detailed to prevent interference with telecommunications or broadcast signals, shall be implemented to minimise interference with said signals in the area. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the planning authority prior to commissioning of the turbines and following consultation with the relevant authorities and / or providers. All measures known to be required in the first instance shall be completed prior to the erection of the turbines at the site.

    Reason: In the interest of protecting telecommunications and broadcasting signals and of residential amenity.

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

    Reason: In the interest of air traffic safety.

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

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

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

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

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

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any archaeological remains that may exist within the site.

17. The Construction Environment Management Plan (CEMP) shall include the location of any and all archaeological or cultural heritage constraints relevant to the proposed development as set out in Chapter 12 of the EIAR, the further information received 1st day September 2023 and by any subsequent investigations associated with the project. The CEMP shall clearly describe all identified archaeological impact, both direct and indirect, and all mitigation measures to be employed to protect the archaeological or cultural heritage environment during all phases of site preparation and construction activity.

The Planning Authority and the Department of Housing Local Government and Heritage shall be furnished with a final archaeological report describing the results of all archaeological monitoring and any archaeological investigative work/excavation required, following the completion of all archaeological work on site and any necessary post-excavation specialist analysis. All resulting and associated archaeological costs shall be borne by the developer.
Reason: In order to conserve the archaeological heritage of the site and to secure the preservation (either in situ or by record) and protection of any archaeological remains that may exist within the site.

18. Prior to the commencement of development, the community gain proposals and a programme for delivery, shall be submitted to and agreed in writing with the Planning Authority.
Reason: In the interest of the proper planning and sustainable development of the area.

19. Prior to any development taking place the developer shall submit the following to Transport Infrastructure Ireland in the case of national roads and the planning authority in relation to other roads:

(a) Road safety audits relating to junction works proposed on the national road network.

(b) Road safety audits in respect of works to be carried out on the local road network.

(c) Details of all signage, crash barriers, poles etc. to be removed on the national and local road network to facilitate the abnormal loads to be delivered on site.
Reason: In the interest of traffic safety.

20 (a) Prior to the commencement of development, a traffic management plan for the construction phase shall be submitted to and agreed in writing with the planning authority. The traffic plan shall incorporate the following:

(i) Details of the road network/haulage routes and the vehicle types to be used to transport materials and turbine parts to and from the site and a schedule of control measures for exceptionally wide and heavy delivery loads.

(ii) A condition survey of the roads and bridges along the haul route shall be carried out at the developer's expense by a suitably qualified person both before and after the construction of the proposed development. This survey shall include a schedule of required works to enable haul routes to cater for construction related traffic. The extent and scope of the survey and the schedule of works shall be agreed with the

planning authorities and Transport Infrastructure Ireland prior to the commencement of development.

(iii) Detailed arrangements whereby any construction damage which arises shall be made good and completed to the satisfaction of the planning authority.

(iv) Detailed arrangements for the protection of bridges to be crossed.

(v) Detailed arrangements for temporary traffic arrangements/control on roads and protocols to keep residents informed of upcoming traffic related matters, temporary lanes/road closures and delivery of turbines.

(vi) A phasing programme indicating the timescale within which it is intended to use each public route to facilitate the construction of the proposed development. In the event that the proposed development is being developed concurrently with any other wind farm in the area the developer shall consult with and arrange suitable traffic phasing arrangements with the planning authority.

(b)Within three months of the cessation of the use of each public road and haul route to transport material to and from the site, a road survey and scheme of works detailing works to repair any damage to these routes shall be submitted to and agreed in writing with the planning authority.

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

Reason: To protect the public road network, the amenity of local residents and to clarify the extent of the permission in the interests of traffic safety and orderly development.

21 On full or partial decommissioning of the windfarm, or if the windfarm ceases operation for a period of more than one year, the masts and the turbines concerned shall be removed and all decommissioned structures shall be removed within three months of decommissioning.
Reason: To ensure satisfactory reinstatement of the site upon cessation of the project.

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

Reason: To ensure the satisfactory reinstatement of the site.

23. Prior to commencement of development, the developer shall lodge with the Planning Authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the relevant Planning Authority, to secure the satisfactory reinstatement of the site upon cessation of the project, coupled with an agreement empowering the Planning Authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the Planning Authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

Reason: To ensure the satisfactory reinstatement of the site.

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

application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.

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

Bríd Maxwell
Planning Inspector
16th August 2024

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Appendix 1.

Appropriate Assessment Screening Determination Template

Screening for Appropriate Assessment **Screening Determination**
Step 1: Description of the project I have considered the proposed Ballivor Wind Farm in light of the requirements of S177U of the Planning and Development Act 2000 as amended. The subject site is not located within or contiguous to any Natura 2000 sites nor is the proposal necessary to the management of any Natura 2000 site. The nearest Natura 2000 sites: • River Boyne and River Blackwater SAC (412m 1.1km downstream) • River Boyne and River Blackwater SPA (486m 1.1km downstream) • Mount Hevey Bog SAC (3.4km)

- Girley Drewstown Bog SAC (10.3km)
- Woodown Bog SAC (11.4km)
- Lough Lene SAC (13km)
- Lough Bane and Lough Glass SAC (13.4km)
- White Lough Ben Loughs and Lough Doo SAC (15.8km)
- Boyne Coast and Estuary SAC (48km 70km downstream)
- Lough Derravaragh SPA (14.8km)
- Lough Owel SPA (18.3km)
- Lough Ennel SPA (19.8km)
- Garriskil Bog SPA (25.2km)
- Wexford Harbour and Slobs SAC (118km)
- Boyne Estuary SPA (70km east)

The proposed development is described in section 2.2.1 of the NIS and the development is also summarised above at Section 3 of this report. In summary the proposal entails

- the construction of 26 no wind turbines and all associated hard standing areas with a total blade tip height of 200m, hub height 115m and rotor diameter 170m.
- 2 no permanent meteorological anemometry masts with a height of 115m and associated hardstanding area and removal of existing meteorological mast.
- 4 no temporary construction compounds with temporary site offices and staff facilities.
- 5 no temporary security cabins at the main construction site entrances and access points around the site.
- 2 no borrow pits located and all works associated with the opening, gravel and spoil extraction and decommissioning of the borrow pits.
- 1 no permanent 110kV electrical. The electrical substation will have 2 no single storey control buildings, a 36m high telecom tower, associated electrical plant and equipment, a groundwater well and a wastewater holding tank.
- All associated underground electrical and communications cabling connecting the turbines and masts to the proposed electrical substation including road crossings at R156 and local road between Lisclogher and Bracklin Bogs, and all works associated with the connection of the proposed wind farm to the national electricity grid by way of connection into the existing Mullingar-Corduff 110kV overhead line that traverses the site.
- Provision of new internal site access tracks with passing bays measuring a total length of c28km and provision/upgrade of existing /new pathways for amenity uses measuring a total length of 3.3km and associated drainage.
- Temporary accommodating works to existing public road infrastructure to facilitate delivery of abnormal loads at locations on the R156 and R161 in the townlands of Dollystown and Moyfeagher.

- Accommodation works to widen existing site entrances off the R156 into Ballivor and Carranstown Bogs and reopen entrances at Lisclogyer and Bracklin Bogs for use as construction site entrances and to facilitate delivery and movement of turbine components and construction materials, entrances will be used for maintenance and amenity access during the operational period.
- Permanent vertical realignment of the R156 in the vicinity of the site entrance to achieve required sightlines.
- Construction of permanent site entrances off a local road into Lisgclogher and Bracklin Bogs to facilitate a crossing point for turbine components, construction materials and operation / amenity access.
- Provision of amenity access and amenity pathways using existing entrances off the R156 and local roads in the townlands of Bracklin, Coolronan, Clondalee More and Craddanstown.
- 3 no permanent amenity car parks in Ballivor Bog (50 no car parking spaces), Carranstown (15 no car parking spaces) and Bracklin Bog (15 no car parking spaces) and the provision of bicycle rack facilities at each location.
- All associated site works and ancillary development including access roads, drainage and signage.

A 10 year planning permission and 30 year operational life of the wind farm from the date of commissioning of the entire wind farm is proposed.

The development site is located on Ballivor Bog, Carranstown Bog, Bracklin Bog, Lisclogher bog and agricultural land adjacent to Bracklin Bog in the east of County Westmeath and the west of County Meath. The application site encompasses an area of approximately 1,170 hectares and also comprises two areas of temporary accommodating works along the proposed haul route. Landcover within the application site boundary is a mixture of bare cutaway peat, revegetated bare peat, degraded blanket bog, scrub, low woodland and remnants of high bog.

Approximately 18.9km of Bord na Móna permanent fixed gauge rail lines run through Ballivor, Bracklin and Carranstown Bogs. The proposed site comprises four large cutover raised bogs classified as Cutover Bog (PB4) and detailed habitat mapping is provided in Figure 4-2. Areas of remnant uncut raised bogs classified as raised bog also occur predominantly but not exclusively at the edges of the site. Secondary habitats have begun to form on the cutover bog following cessation of peat extraction / milling including bog woodland, scrub, cutover bog supporting secondary dry heath type communities, Poor fen, open water, other artificial lakes and ponds, lowland depositing streams, grassland habitats.

Two small mineral islands are located at Carranstown Bog containing woodland that is dominated by hazel with smaller amounts of young oak and are classified as oak-ash-hazel woodland (WN2). Small areas of conifer plantation are located at the northern end of Ballivor bog. Existing access tracks are classified as spoil and bare ground while there are areas of buildings and artificial surfaces. Treeline and hedgerow habitats make up a very small proportion of the habitats within the site and no invasive species were recorded during walkover surveys. Waterbodies within the site include a network of drainage ditches, small streams / watercourses classified as lowland depositing rivers, small areas of standing open water and artificial silt ponds. Habitats along the haul route are predominantly within existing road infrastructure while road widening works involves areas of improved agricultural grassland and hedgerow.

No Annex I habitats associated with any European Designated Sites were identified within or adjacent to the site boundary. While an area of Article 17 mapped Alkaline fen is located adjacent to the northern boundary of Bracklin Bog this mapped area of habitat is not located within the boundaries of any SAC.

No otter resting or breeding sites were recorded during faunal surveys or dedicated fisheries assessment or kick sampling of watercourses. Otter spraints and prints were recorded in proximity to a drainage ditch at Lisclogher bog on two separate occasions and outside of downstream of the site in the Craddanstown Stream to the west of Ballivor Bog and in the Ballivor River to the east of Ballivor bog. The river Stoneyford and River Deel (Raharney) both located outside the site also provide suitable habitat for otter.

No kingfisher nesting sites were recorded within the site and artificial drains and watercourses within the site do not provide significant suitable nesting habitat. Kingfisher was observed flying through the site across cutover bog and silt ponds and travelling along the River Deel (Raharney) to the west of and outside the site.

Step 2: Potential impact mechanisms from the project [direct, indirect, temporary/permanent impacts that could occur during construction, operation and decommissioning]

- Direct impact causing habitat loss or deterioration. – Ex-situ habitat loss.
- Ex situ species disturbance or mortality
- Surface water pollution (silt/ hydrocarbon/ construction related) from construction works resulting in changes to environmental conditions such as water quality/ habitat degradation.
- Ground water pollution/ alteration of flows- effects on groundwater dependent habitats.
- Human disturbance/ noise/ lighting - resulting in disturbance and displacement effects to QI species.
- Barrier effect, collision risk, avoidance for mobile species
- Emissions (release to land, water or air)
- Invasive species Degradation as a result of introducing / spreading non-native invasive species.

Step 3: European Sites at risk

Table 1 European Sites at risk from impacts of the proposed project

Effect mechanism	Impact pathway/Zone of influence	European Site(s)	Qualifying interest features at risk
Habitat Loss / Deterioration A	No potential for direct effects on habitat loss deterioration given that the site does not lie within any European site. Hydrological connection Linear distance	River Boyne and River Blackwater SAC. 412m from boundary 1.1km downstream River Boyne and River Blackwater SPA 1km downstream.	Potential pathway for direct effect on QI otter as a result of ex-situ habitat loss within the development site if otter resting or breeding sites are present Potential for direct effect on SCI species Kingfisher outside SAC as a result of ex situ habitat loss
Species Disturbance / Mortality B	Disturbance during construction works. Operational - risk to QI bird species	River Boyne and River Blackwater SAC. Hydrological connection via watercourses within and adjacent to the site boundary which discharge to the Stonyford River to the East and Deel (Raharney) to the Southwest. River Boyne and Blackwater SPA 486m 1.1km downstream	Otter. If present within the small watercourses within the construction footprint. Potential effect on Kingfisher
Surface Water pollution Surface water pollution (silt/ hydrocarbon/ construction	Hydrological connection via watercourses within and adjacent to the site boundary which	River Boyne and River Blackwater SAC.	Water Quality and water dependent habitats. Aquatic QIs

related) from construction works resulting in changes to environmental conditions such as water quality/ habitat degradation C	discharge to the Stonyford River to the East and Deel (Rahane) to the Southwest.	River Boyne and Blackwater SPA	Alkaline fens, Alluvial forests with alnus glutinosa and Fraxinus excelsior, River lamprey, Salmon, Otter. Kingfisher – Potential to effect food resource
Human disturbance/ noise/ lighting - resulting in disturbance and displacement effects to QI species **B**		River Boyne and River Blackwater SAC. River Boyne and Blackwater SPA	Otter. Kingfisher – potential for disturbance during construction phase and
Barrier effect, collision risk, avoidance for mobile species **B**		River Boyne and Blackwater SPA Lough Iron SPA Lough Derravaragh SPA Garriskil Bog SPA Wexford Harbour and Slobs SPA	Collision risk during operational phase Vulnerability to mortality due to collision Greenland White fronted Goose Whooper swan

Emissions (release to land, water or air) **C**	Run off from temporary material storage areas Inappropriate management of drainage of concrete areas leading to loss of contaminants to surface waters Sediment run off inappropriate peat storage could result in pollution to local drains and watercourses,	River Boyne and River Blackwater SAC. River Boyne and Blackwater SPA	Reduction in prey densities for otter kingfisher as result of water quality changes

River Boyne and River Blackwater SAC

This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath, and smaller areas of Cavan and Louth.

The site is an SAC selected for the following habitats and/or species [7230] Alkaline Fens [91E0] Alluvial Forests* [1099] River Lamprey (Lampetra fluviatilis) [1106] Atlantic Salmon (Salmo salar) [1355] Otter (Lutra lutra)

River Boyne and River Blackwater SPA is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the Kingfisher.

Lough Derravaragh SPA in Co Westmeath is a large sized lake of relatively shallow water is a SPA of conservation interest for whooper swan, pochard, tufted duck and coot.

Lough Iron SPA is a small to moderately sized midland lake, situated on the Inny River. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Greenland White-fronted Goose, Wigeon, Teal, Shoveler, Coot and Golden Plover. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds

Garriskil Bog SPA, a raised bog 3km west of Lough Derravaragh. At the time this site was designated as a Special Protection Area (SPA) it was known to be utilised by part of an internationally important population of Greenland Whitefronted Goose centred around the midland lakes. The geese appear to have abandoned these peatland sites in favour of grassland sites elsewhere. Greenland White-fronted Goose is regarded as a special conservation interest for this SPA.

Wexford Harbour and Slobs SPA The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:

Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Bewick's Swan, Whooper Swan, Greenland White-fronted Goose, Light-bellied Brent Goose, Shelduck, Wigeon, Teal, Mallard, Pintail, Scaup, Goldeneye, Red-breasted Merganser, Hen Harrier, Coot, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bartailed Godwit, Curlew, Redshank, Black-headed Gull, Lesser Black-backed Gull and Little Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds

All other European sites can be excluded from further assessment due to distance, dilution effects, lack of hydrological connection and lack of ecological connection between the designated sites and the application site.

Step 4: Likely significant effects on the European site(s) 'alone'

This section of the assessment considers if there are significant effects alone and whether it is possible that the conservation objectives might be undermined from the effects of only the project.

Table 2: Could the project undermine the conservation objectives 'alone'

European Site and qualifying feature	**Conservation objective (summary) [provide link/ refer back to AA Screening Report]**	**Could the conservation objectives be undermined (Y/N)?**			
		Effect A Habitat Loss Ex Situ	**Effect B Species disturbance mortality**	**Effect C Surface water pollution emissions**	
River Boyne and River Blackwater SAC 02299	To maintain the favourable conservation condition of the habitat in the SAC defined by list of attributes and targets.	**Yes**	**Yes**	**Yes**	
River Boyne and River Blackwater SPA	To maintain or restore the favourable conservation condition of Kingfisher listed as Special Conservation Interest of this SPA.	**Yes**	**Yes**	**Yes**	
Lough Iron SPA	To maintain or restore the favourable conservation condition of species listed as Special	**No**	**Yes**	**No**	

	Conservation Interest of this SPA.				
Lough Derravaragh SPA	To maintain or restore the favourable conservation condition of species listed as Special Conservation Interest of this SPA.	**No**	**Yes**	**No**	
Garriskil Bog SPA	To maintain or restore the favourable conservation condition of species listed as Special Conservation Interest of this SPA.	**No**	**Yes**	**No**	
Wexford Harbour and Slobs SPA	To maintain or restore the favourable conservation condition of species listed as Special Conservation Interest of this SPA.	**No**	**Yes**	**No**	

A potential pathway arises for direct effect on otter where the species occurs outside the River Boyne and River Blackwater SAC as a result of ex situ habitat loss within the development site. A potential for indirect effect on otter as a result of disturbance during construction activities has also been identified. A potential deterioration in water quality during construction operation and decommissioning has the potential for effect aquatic Qis. Alkaline fens. Alluvial forests with alnus glutinosa and fraxunus excelsior, River Lamprey, Salmon and Otter.

Likely significant effect on the River Boyne and Blackwater SPA has been identified based on hydrological connection and potential for direct effect on kingfisher where the species occurs outside the SPA as a result of ex situ habitat loss. Indirect effect as a result of disturbance during the construction phase and collision risk in the operational phase is identified. Deterioration in water quality during construction, operation and decommissioning has potential to affect availability of food resource for kingfisher.

With regard to Lough Derravarragh SPA potential displacement of waterbird species associated with the SPA unlikely due to separation distance. Collision risk of waterbird species may pose a potential risk.

With regard to Lough Iron SPA potential displacement of waterbird species associated with the SPA unlikely due to separation distance. Collision risk of waterbird species may pose a potential risk.

With regard to Garraskill Bog SPA potential displacement of waterbird species associated with the SPA unlikely due to separation distance. Collision risk of waterbird species may pose a potential risk.

With regard to Wexford Harbour and Slobs SPA potential displacement of waterbird species associated with the SPA unlikely due to separation distance. Collision risk of waterbird species may pose a potential risk. I conclude that the proposed development would have a likely significant effect 'alone' on otter and aquatic Qis of River Boyne and River Blackwater SAC and Kingfisher River Boyne and River Blackwater SPA from effects associated with ex situ habitat loss / deterioration, water degradation and disturbance. Likely significant effects alone on waterbird species associated with Lough Derravarragh SPA. Lough Iron SPA. Garriskil Bog SPA and Wexford Harbour and Slobs SPA has been identified due to potential vulnerability to mortality due to collision. An appropriate assessment is required on the basis of the effects of the project 'alone'. Further assessment in-combination with other plans and projects is not required at this time.
Overall Conclusion- Screening Determination In accordance with Section 177U(4) of the Planning and Development Act 2000 (as amended) and on the basis of objective information I conclude that the proposed development is likely to have a significant effect on otter and the aquatic qualifying interests and kingfisher of the River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA 'alone' in respect of effects associated with ex situ habitat loss and disturbance during construction and deterioration in water quality due to release of pollutants including suspended solids and hydrocarbons during construction, operation and decommissioning phases of the development. Likely significant effects alone on waterbird species associated with Lough Derravarragh SPA, Lough Iron SPA, Garriskil Bog SPA and Wexford Harbour and Slobs SPA has been identified due to potential vulnerability to mortality due to collision. It is therefore determined that Appropriate Assessment (stage 2) under Section 177V of the Planning and Development Act 2000 is required on the basis of the effects of the project 'alone'.