# Inspector's Report

# ABP-316178-23

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| **Development** | Proposed development of Oweninny Windfarm Phase 3 consisting of 18 no. wind turbines. |
| **Location** | Within the townlands of Laghtanvack, Croaghaun (also known as Croaghaun West), Moneynieran, Corvoderry, Shanvolahan, Dooleg More, Shranakilly, Bellacorick and Shanvodinnaun, Co. Mayo. |
| **Planning Authority** | Mayo County Council |
| **Applicant(s)** | Bord na Móna Powergen Ltd. |
| **Type of Application** | Section 37E Planning and Development Act, 2000, as amended. |
| **Prescribed Bodies** | Department of Housing, Local Government and Heritage<br>Department of Defence<br>Inland Fisheries Ireland<br>Transport Infrastructure Ireland<br>Environmental Protection Agency<br>North and West Regional Assembly |

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| | Mayo County Council |
| | Irish Aviation Authority |
| **Observers** | Eileen, Alan, Patrick, Shane, Gabriella and Caitlin Mullarkey: |
| | Gerard, Josephine and James Gallagher |
| | Hugh Broderick |
| | John G. Senior, Bridget, John G. Junior & Jillian Moyles |
| | Martin John and Patricia Cosgrove |
| | Peter Sweetman and Associates |
| | Rob Deane |
| **Date of Site Inspection** | 27th November 2023 |
| **Inspector** | Alaine Clarke |

# Contents

# 1.0 Introduction

## 1.1. Introduction

1.1.1. This is an application for 18 no. turbines windfarm and associated works including a 110kV substation compound and underground cable connection from the proposed substation to the existing substation at Bellacorick in the townlands of Laghtanvack, Croaghaun (also known as Croaghaun West), Moneynieran, Corvoderry, Shanvolahan, Dooleeg More, Shranakilly, Bellacorick and Shanvodinnaun in County Mayo. The proposed development will be referred to as Oweninny Wind Farm Phase 3 and will have an electrical output of c. 90MW. to replace the existing 21 no. existing Bellacorick Wind Farm.

1.1.2. The Oweninny Wind Farm has been developed to date in two phases. Oweninny Wind Farm Phase 1, commissioned in 2019, is located immediately west/northwest of the proposed development site and consists of 29 turbines (93 MW). Oweninny Wind Farm Phase 2 is located west of the proposed development site and consists of 31 turbines (99 MW) and was commissioned in 2023.

1.1.3. The Bellacorick Wind Farm has been operational on the site since 1992, with an installed capacity of 6.45 MW and will be decommissioned with new turbines installed near where the existing turbines are located.

## 1.2. Project Background

1.2.1. Bord na Mona Powergen Limited requested pre-application consultations with the Board under Section 37B of the Planning and Development Act, 2000 (as amended) for erection of 18 turbines with an output of 90MW (ABP-309375-21). Two pre-application meetings took place on 28th April 2021 and 11th November 2021. By letter dated 5th April 2022, the applicant was informed that the proposed development falls to be considered as Strategic Infrastructure Development within the meaning of section 37A of the Act.

## 2.0 Site Location and Description

2.1. The proposed development site is located at Oweninny Bog in north Co. Mayo, a relatively sparsely populated area. The site is situated in the eastern part of Oweninny Bog, approximately 12km west of Crossmolina and 15km east of Bangor Erris and just north of the N59 national road. The overall area of Oweninny bog is approximately 5,090 hectares. The site comprises an area of 2,282 ha. The closest settlement to the site is Bellacorick village which is located approximately 2km from the southwestern extents of the site.

2.2. To the east of the site, a local road (L5292) runs northwards from the N59 to the townlands of Shanvolahan and Formoyle.

2.3. The site is located directly adjacent to the Oweninny River within the Blacksod-Broadhaven WFD catchment, flowing in a southerly direction, before discharging into the main tributary of the Owenmore River, at Ballacorick. Other watercourses on the site include the Muing, the Fiddaunfura and the Shanvolahan.

2.4. The site comprises cutaway bog, with industrial scale milled peat production operations having formerly occurred at the site for over 50 years and which supplied the ESB Bellacorick peat fired power station. Milled peat production ceased in 2005 following the closure of the power station and the power station was later decommissioned. There are a number of forests on site, some of which were the subject of felling and thinning operations during my site inspection.

2.5. Bellacorick windfarm (Ireland's first windfarm), consisting of 21 turbines, was built in 1992 and those turbines are located adjacent to the proposed turbines and are proposed to be removed as part of the proposed development. The proposed development is located to the east of two wind farm developments, the Oweninny Wind Farm Phase 1, located immediately west/northwest (29 turbines), and Oweninny Wind Farm phase 2 to the west (31 turbines).

2.6. There are several other permitted and operational windfarms in the wider area in which are located within a 20km radius of the site. Other windfarms within the Oweninny Bog site include, the Corvoderry windfarm (consented), a separate entity which is located within the Oweninny Bog but outside of the prospective applicant's site and Sheskin windfarm (consented) located to the north of Oweninny phase two

turbines in the Oweninny Bog site. Permission is currently being sought for a 22 no. turbine windfarm to the north of Oweninny Wind Farm Phase 3.

2.7. Lough Dahybaun, a special area of conservation (SAC), protected under the EU Habitats Directive, is located within the site, near the southern boundary. Bellacorick Iron Flush SAC is encompassed within the Oweninny bog boundary to the north of the site. The Bellacorick Bog Complex SAC adjoins the site to the east, north and south. Owenduff/Nephin Complex SAC and SPA are located c. 3km to the west.

2.8. There are three recorded monuments and places (RMPs) within the development site, a Cist, a megalithic tomb-court tomb and a ringfort and one Sites and Monument Record (SMR) – a roadway-trackway.

## 3.0 Planning History

### 3.1. On Site

- **ABP 209375-21**: Pre-application consultation for Oweninny Wind Farm Phase 3. Between 10 and 20 wind turbines (including tower sections, nacelle, hub, rotor blades) with an approximate capacity of 90 MW and a maximum blade tip height of 200 metres.
- **ABP Ref: 311862-21**: Application for leave to apply for substitute consent lodged (November 2021) for peat extraction on Lands at Oweninny Bog, Bellacorick, Co. Mayo.
- **ABP PM0011** – Alter decision not a material alteration, section 146B amendments to ABP PA0029.
- **ABP PM0013** – alter decision is a material alteration.
- **ABP 307261** – Alter decision not a material alteration, section 146B amendments to ABP PA0029.
- **ABP 309043 -** Alter decision is a material alteration, section 146B amendments to ABP PA0029, relates to the construction of a supplementary delivery route to bypass the Western Way Bridge on the N59.

- **ABP PA0029** – Oweninny Windfarm and associated works comprising 61 no. turbines (reduced from 112 no. turbines), granted by An Bord Pleanála, with a hub height of up to 120m and an overall tip height of up to 176m, 6 permanent meteorological masts (120m in height), a visitor centre and associated development. The Oweninny Wind Farm has been developed to date in two phases. Phase 1, to the N/NW of the proposed development site consists of 29 turbines (93MW), commissioned in 2019. Phase 2, to the W of the proposed development site consists of 31 turbines (99MW).
- **MCC 01/2542 / ABP PL16.131260** Permission granted for a change of use of 5,011ha of land from industrial peat production to include use as a wind farm. The wind farm comprises 210 wind turbines with a max. total generating capacity of 320MW of electricity.
- **MCC 90/1077** – permission granted for Bellacorick Windfarm comprising 21 turbines. Twenty of these turbines are rated at 300 kW and the other is rated at 450 kW. The 300 kW turbines are 46.5m to tip height, while the 450 kW turbine is 53.5m to tip height.
- **MCC 90/355** – permission granted for a windfarm control building.

**Other**: Forestry Viewer (Dept. of Ag, Food and the Marine) various applications for thinning and clearfell within the site but not at the locations for proposed infrastructure.

### 3.2. In the Vicinity (Recent applications)

- **ABP 318701-23**: permission sought for 22 wind turbines -Glenora Windfarm.
- **ABP 315933-23**: permission granted for 18 no. wind turbines at Sheskin.
- **ABP 312282**: pre-application for Kilsallagh Windfarm, comprising 13 turbines.
- **ABP 311157 / MCC 20/834:** permission granted for 10.4km of underground electrical cable from granted Sheskin Windfarm to Bellacorick 110kv substation.
- **MCC 23/463:** permission granted for a synchronous condenser and underground electrical cabling.

- **MCC 23/60028:** Permission granted for a 114MW gas fired peaking power plant, including 2 no. open cycle gas turbine generators, exhaust stack, substation.
- **MCC 22/502**: Permission granted for a hydrogen storage plant, including an electrical substation.
- **MCC 20/467**: substation and 20KV underground cable.

# 4.0 Proposed Development

## 4.1. Development Description

A 10-year planning permission and 30-year operational life from the date of commissioning of the entire wind farm is sought. The proposed development comprises:

- the erection of 18 no. wind turbines with an overall blade tip height of 200m, a rotor diameter of 158m, a hub height of 121m and all associated foundations and hard-standing areas in respect of each turbine.
- It also includes decommissioning and removal of 21 no. existing Bellacorick Wind Farm wind turbines;
- Construction of new internal site access roads, approximately 29,000m in length (permanent and temporary), passing bays, car parking and associated drainage;
- Construction of an amenity route through the site to the existing Visitors Centre with access from a local road off the N59 near Dooleeg;
- 2 no. borrow pits; covering and area of ca. 46.6ha (see Table 3.2 of the EIAR). Borrow pit A comprises ca. 43ha), borrow pit B comprises ca. 3.3ha.
- 5 no. peat deposition areas, with an area of ca. 29 ha (section 7.7.2.1.7 of the EIAR).
- Installation of 1 No. permanent Meteorological Mast 120m high, and the decommissioning and removal of an existing 100m Meteorological Mast on site;
- 4 no. temporary construction compounds, including material storage, site welfare facilities, and site offices;

- 1 no. 110kV electrical substation compound. The electrical substation will have 2 No. control buildings, a 36m high telecommunications tower, associated electrical plant and equipment and a wastewater holding tank.
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed substation;
- All works associated with the connection of the proposed wind farm to the national electricity grid, including approximately 4.8km 110kV underground electrical cable from the proposed on-site electrical sub-station to the existing substation at Bellacorick. The proposed development requires of 110 kV underground cable (UGC). The entire UGC will be installed along the existing wind farm access roads.
- All related site works and ancillary development including (but not limited to):
    - Earthworks;
    - Peat management works;
    - Site security;
    - Groundwater and surface water management;
    - Overburden (soils/peat) storage and management; and
    - Site reinstatement, landscaping and erosion control.
- The proposed development site will be accessed via the N59 road using the existing operational entrance for Oweninny Wind Farm Phase 1.

## 4.2. **Documentation**

4.2.1. The application documentation includes the following:

- Copies of letters to prescribed bodies
- Copies of public Notices
- Application form
- Letters of landowner consent
- EIA portal confirmation

- Planning Drawings
- Environmental Impact Assessment Report (EIAR). The EIAR is supported by Technical Appendices and include:
    - Appendix 3.1: Construction Environmental Management Plan
    - Appendix 3.2: Bellacorick Proposed Decommissioning Plan
    - Appendix 7.1: Habitat Mapping
    - Appendix 7.2: Bat Survey Report
    - Appendix 7.3: Electronic Fishing Survey Results Report
    - Appendix 7.4: Biodiversity Enhancement Plan
    - Appendix 8.1: Avi-fauna Data
    - Appendix 8.2: Collision Risk Model
    - Appendix 8.4: Viewshed Maps
    - Appendix 8.5: Bird Monitoring Programme
    - Appendix 9.2: Ground Investigation Report
    - Appendix 9.3: Peat Management Plan
    - Appendix 9.4: Peat Stability Risk Assessment
    - Appendix 11.1: Flood Risk Assessment
    - Appendix 11.2: Surface Water Management Plan
    - Appendix 11.3: Water Framework Directive Report
    - Appendix 12.2: Dust Management Plan
    - Appendix 13.3 Noise Modelling Assumptions and Inputs
    - Appendix 13.6: Noise Contour Maps
    - Appendix 13.7: Predicted Noise Levels
    - Appendix 15.1- 15.4 Visual Impact Analysis & Photomontages
    - Appendix 17.1 Haul Route Swept Path Analysis Drawings
    - Appendix 17.2 Traffic & Transportation Assessment

- Appendix 18.1: SMR and RMP Sites in the Study Area

- Natura Impact Statement (NIS) which includes the Appropriate Assessment Screening Report as an appendix.

### 4.3. Additional Information

4.3.1. During the course of the application, the following additional information was submitted by the applicant:

(i) Response to submissions, which includes information and an assessment relating to recorded archaeological sites between 2-5km of the proposed development.

(ii) A response to a request for further information which includes an addendum to the EIAR and a revised NIS which includes a revised Appropriate Assessment Screening Report.

(iii) A response to a request for further information comprising locational details of shadow flicker receptors.

The additional information submitted by the applicant is considered in greater detail in Section 6.0 below.

## 5.0 Consultations

5.1. Details of the application were circulated to the following prescribed bodies:

- Department of Housing, Local Government and Heritage
- Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
- Department of Agriculture, Food and Marine
- Department of Environment, Climate and Communications
- Department of Transport
- An Taisce - The National Trust for Ireland
- National Parks and Wildlife Services
- Fáilte Ireland,

- The Heritage Council
- Inland Fisheries Ireland
- Irish Water – Uisce Eireann
- Transport Infrastructure Ireland
- Environmental Protection Agency
- Office of Public Works
- The Arts Council/ An Chomhairle Ealaíon
- North and West Regional Assembly
- Mayo County Council
- Irish Aviation Authority

5.2. Submissions were initially received from Mayo County Council, IFI, Department of Defence, DHLG&H, Northern and Western Regional Assembly, EPA and TII which are summarised below.

5.2.1. **Mayo County Council**

The Board should note that the reference number on the submission relates to a different application (ABP 309375-21) however the description relates to the subject development, ABP 316178.

Mayo County Council's Chief Executive (CE's) report sets out the legislation context for the making of the submission and the policy context in the relation to the type of development proposed, referencing relevant policies and objectives of the Mayo County Development Plan 2022-2028 and the Renewable Energy Strategy (RES) for County Mayo. It sets out the planning history of the site and surrounding area and indicates designated sites for nature conservation within 15km and archaeological monuments within the site. It provides a summary of the EIAR and details the content of the road design report and archaeology report from these respective departments.

The main points of the CE's Report are summarised as follows:

- Referencing the Renewable Energy Strategy for County Mayo, states that the site is in an area open for consideration for windfarm development; that in principle the location is considered acceptable;
- While the bog has been rehabilitated to some extent since peat production ceased, the area remains degraded;
- The use of the land as a windfarm has been established.
- There are no dwellings within 500m of a proposed wind turbine.
- Regarding shadow flicker, references the 2006 Wind Energy Guidelines and notes there are 78 properties within 1.58km of the proposed development the Shadow Flicker Study concluded that no properties have the potential to experience cumulative shadow flicker impacts.
- Direct effects on landscape character are considered to be highly localised with visual impacts ranging from imperceptible to moderate significance.
- The EIAR indicates that the N59 has sufficient capacity to accommodate construction traffic. The Road Design Dept. consider the use of the R312 Castlebar to Bellacorick road as a haul road should not be permitted due to its poor alignment and structural capacity.
- Subject to the proposed mitigation measures set out in the EIAR, the proposed development will not have a significant impact on the environment of the area.
- The location has become a centre for renewable energy projects, Mayo are supportive of renewable energy projects at this location.
- A dedicated access from the N59 should be explored and utilised for all projects at this location, for both construction and operational phases, and undergrounding options for connections to the National Grid.
- 3 recommendations as follows:
    - Applicant to examine the feasibility of co-operating with adjoining renewable energy providers to develop single access point to all renewable energy projects for construction, supply and maintenance purposes.

- Queries the cumulative impact of red flashing warning lights on top of turbines on the environment, light sensitive species and human population.
- Suggest conditions to be attached in the event of a grant.

- Reports from Road Design and the Archaeology Department inform the CE's report and are summarised in the CE's report.

5.2.2. **Inland Fisheries Ireland**

- Fish stock monitoring has shown this catchment is under environmental pressure with salmon stocks declining to below their conservation limit. Following closure of the fishery for 2 years, salmon stocks recovered sufficiently to be reopened in 2021. No activity or development should be permitted in this catchment that may negatively impact on the river system, aquatic habitat or water quality.
- The Cloonaghmore River catchment has good ecological status and must be protected.
- No activity to be carried out in catchments to prevent or delay the achievement of good ecological status (where there is a moderate ecological status).
- Recommend a number of issues to be dealt with by way of further information or condition, including, establishment of an environmental monitoring committee, 2 no. additional surface water monitoring points; no extraction below water table at borrow pits; a location map of proposed culverts; silt and dust preventative measures; surface water method statement to be agreed; staff training; details to explosives should be provided; acceptance by Uisce Eireann and adequate capacity to treat wastewater; wetland areas to be avoided during construction.

5.2.3. **Department of Defence**

Seeks conditions around obstacle lighting in the interests of aviation safety.

5.2.4. **EPA**

The IPC licence granted for the extraction of peat may need to be reviewed or amended to accommodate the changes proposed in the planning application. Sets out matters relating to licence and EIAR procedure.

5.2.5. **Department of Housing, Local Government and Heritage**

*Archaeology:*

- Broadly in agreement with the findings in relation to the Archaeology and Cultural Heritage as set out in the EIAR.
- Indirect impacts to the setting of Recorded Monuments and non-statutory SMR sites as the study area is not sufficiently large enough at 2km from the redline boundary yet the ZTV drawings indicate potential visibility for all proposed turbines extends across an area extending 5-10km, noting that there are a further 23 known archaeological monuments within 5km of the application site.
- Chapter 18 (Archaeological, Architectural and Cultural Heritage) and Chapter 15 (Landscape & Visual) fails to discuss or evaluate the cumulative impact of permitted and proposed wind energy developments within 10km of the development site.
- The Board may consider it beneficial to seek further information in respect of the points raised by the Department. Archaeological conditions are ecommended including pre-development archaeological testing.

*Nature Conservation:*

- Although the Owenduff/Nephin Complex SPA was screened out, the Department considers that it is uncertain whether the proposed development is likely to have significant effect on the SPA, and the NIS should consider whether the proposed development will adversely effect the integrity of this SPA.
- Note the Owenduff/Nephin Complex SPA is important for breeding Merlin and Gloden Plover, that both species were recorded within the application site during surveys, flights of these species were recorded within the collusion risk zone of the proposed turbines.

- The proposed application site is just outside of the 3km core foraging range, is likely to result in the collision mortality of this species during breeding and wintering season and the SPA should be considered to be within the zone of influence of the proposed development.
- The NIS should include rationale, and evidence, as to why the Golden plover recorded within the application site are or are not associated within the SPA. Further surveys are required if such a link cannot be ruled out.
- Regarding Merlin, the Department considers that potential for a connection of birds recorded within the application site and the population within the Owenduff / Nephin Complex SPA cannot be easily ruled out, detailed analysis in NIS is required to inform AA determination. Conclusion that the operational stage has very limited collision risk to Merlin is not coherent. A detailed analysis, supplemented by additional surveys as necessary, should be undertaken within a NIS to determine potential effects on the conservation objectives of the Merlin.
- Queries methodology used to determine the significance of the potential mortality caused by collisions with the proposed turbines. The Department considers the use of the national population as a reference is flawed and consider that an analysis of habitat suitability and the potential density of species in such habitats in the wider area of the application is required in order to determine the baseline population from which to assess the magnitude of any impacts.
- The Collision Risk Modelling Report uses arbitrary thresholds, such thresholds must be scientifically rigorous and justified. References the Merlin being excluded from the model on the basis of not meeting thresholds, which is then used as part of the rationale for considering the proposed development is not likely to have a significant effect on this species and consequently the Owenduff/Nephin Complex SPA.
- References discrepancies in relation to collision risk calculations in the NIS and advises these discrepancies should be clarified.
- Reminds the Board of its obligations under art. 6.3 of the Habitats Directive.

5.2.6. **Northern & Western Regional Assembly**

ABP may determine that the NWRA is a 'prescribed body', and if consulted its submissions will be informed by the objectives of the RSES.

5.2.7. **TII**

- Notes the site will be accessed via the N59 road using the existing operational entrance for Oweninny Wind Farm Phase 1. Draws the Board's attention to the Section 28 Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities' which seeks to avoid the creation of additional access points from new development or the generation of increased traffic from existing accesses, referring relevant policy in the MCDP 2022-2028, Policy MTP 23 and 24. Request the Board consider the proposals with regard to this policy to ensure road safety.
- Applicant/developer to consult with relevant companies, contractor and road authorities over the haul route to ascertain requirements; referral of all such proposals relevant to national roads to TII. Mitigation measures to be conditioned.
- Clarity regarding whether abnormal loads are a feature of the proposed development, if so, technical load assessment of structures along the haul route should be undertaken. All such proposals agreed with road authorities impacting on national roads should be referred to TII.

## 5.3. Public Submissions

5.3.1. Seven public submissions were (initially) received from:

1. Eileen, Alan, Patrick, Shane, Gabriella and Caitlin Mullarkey
2. Gerard, Josephine and James Gallagher
3. Hugh Broderick
4. John G. Senior, Bridget, John G. Junior & Jillian Moyles
5. Martin, John and Patricia Cosgrave
6. Peter Sweetman and Associates

7. Rob Deane

5.3.2. The observations are generally opposed to the proposed development and/or raise concerns regarding the application of the Habitats Directive. The concerns raised are summarised thematically below due to the overlapping issues of many submissions.

5.3.3. **Over-concentration of windfarms / Suitability of the Area**

- The area is over-developed citing the number of existing turbines in the area. Too many turbines are going up. Request that smaller turbines are not replaced with larger ones, making life worse than it is. Presence of existing turbines is not justification for further turbines, there are too many windfarm proposals for this area. Queries the need for high concentration of wind turbines in the area.
- Objecting due to the proximity of phase 3 to farm and house.
- Already impacted by Phase 1 and 2 by noise and light flickering at night. Refer to objection to phase 1 & 2 and the location of their house and farm bordering the Oweninny wind farm site.
- This is a boggy area.
- The closest turbines will be within 1.5km of their houses which will have a range of consequences.

5.3.4. **Visual Impact**

- The proposed development would seriously impact on the visual amenity and natural character of the area. Object to proposed turbines forming the dominant elements in the landscape and with changing landscape, on area which is the ‘Gateway to Erris’ and highly dependent on tourism.
- Can see all the turbines from rooms in their house;
- No 3D model presented or profile erected of Phase 3.
- Object that no visual aid was erected on sites of T12-T17 to show size and impact.
- Concerned as there is a Synchronous Condenser development proposed in front of their house.

5.3.5. **Noise Impact**

- Noise pollution concerns arising from operational and construction phase, including the temporary contractor's compound, borrow pits and peat deposition areas.
- Being downwind of the site the Moyles' property is most prone to the cumulative effect of turbine noise. Request that turbines T12, T13, T14, T15, T16 and T17 are omitted. T15 and T16 are too close to their property and dwelling house and will impact their farm and standard of living. Request greater details of noise from the temporary compound 2 and the nearby burrow pit and peat deposition areas. Deadline for removal of temporary structures required if permission is granted.
- Object that noise simulation models, especially a nighttime scenario, was not presented by the applicant.
- Concerned about the proximity of the development to house and farm. Currently impacted by Phase 1 and 2 in relation to the noise from the turbines.
- Put up with noise day and night, noise is worse at night, since 2019.
- The noise from the windfarm is driving deer out onto the roads.

5.3.6. **Shadow Flicker Impact**

- Have had shadow flicker several times every year, including from Phase 2 – problem has not been sorted.
- Houses are already impacted by shadow flicker from phases 1 and 2, with no solutions to mitigate this.

5.3.7. **Human Health**

- Concerns regarding personal effects the proposed turbines will have on them.
- Sleep disturbance concerns.
- Health effects concerns.
- Dust impacts from construction.
- Construction-related impacts to local people during construction, such as traffic, air pollution, road disruption and damage to roads, and noise pollution.

5.3.8. **Devaluation of Property**

- Concerns as to the potential effect on the value of their dwelling houses.
- Object to devaluation of property which will occur due to visual impact and noise pollution.
- House prices have fallen drastically in the area.

5.3.9. **Traffic and Transportation**

- Concerned about the extra traffic, articulated trucks and lorries.
- Concerned about the road disruption and damage to the road enroute from the quarry to the wind farm site.

5.3.10. **Biodiversity Impacts**

- Concerned regarding impacts that will lead to the infestation of deer on their private properties.
- Concern for impact on birds of conservation species and bat population and refer to specific species in the area.
- Construction and operational noise including from deforestation and air pressure changes affect wildlife including deer.
- Risk of flooding from access roads on peatland, causing water to run off into nearby rivers and lakes, referencing river pollution and release of GHGs.
- Huge amounts of water pollution to the local waterways especially to the Oweninny River as a direct result of works at the Oweninny Bellacorick site so far.
- Notes that there are many protected European sites, protected plant and animal species on/surrounding the site and townlands. States that this makes this site and project unsuitable for further development of any more wind turbines or any such similar projects.
- Concerned about the effect that the turbines will have on the bird and bat population as their lands are a SAC and important breeding grounds for species of conservation importance.

- References evidence in favour of peatland restoration as a benefit for climate and biodiversity, questions if it would be more beneficial to serve lands to wetlands.
- Assessment for compliance with the requirements of the Water Framework Directive is required.
- Concrete and stone for turbine foundation will affect water levels in the surrounding bogland and ecosystem, likely to affect the 'Formoyle Flush', an important area of conservation due to the presence of marsh saxifrage and associated species, and located on their property, referring to the conservation objectives for the SAC site.
- There are 6 protected European sites on and within the proposed development site, which have already been significantly impacted and degraded by Phase 1 and 2.
- References some of the rare and protected birds on the site and cites the townlands which have protected European sites, which would make the site and project unsuitable for further wind turbines.

5.3.11. **Habitats Directive / AA screening / NIS**

- Refencing ABPs legal tasks in dealing with such applications referring to the Planning and Development Act 2000 (as amended) and the Habitats Directive.
- Cites Kelly v An Bord Pleanála [2014] IEHC 400 and Case C-258/11 regarding the trigger for appropriate assessment i.e. the possibility of there being a significant effect on a site.
- Citing Case C-323/17, it is not appropriate at the screening stage to take account of mitigation measures.
- Citing CJEU Case 258/11, the Article 6(3) assessment cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt.

- The application fails “on all three functions” citing the omission of Owenduff/Nephin Complex SPA when the test is that it is merely necessary to determine that there may be a significant effect.
- The AA screening is fundamentally flawed and it is not possible to make an informed submission on the NIS.
- Consider measures deemed to be mitigation measures by the applicant are not mitigation measures. The CEMP cannot be considered to be mitigation as its contents are not precise and conclusions are not capable of removing all reasonable scientific doubt.
- Referring to Humphries J in Sweetman v ABP, the Surface Water Management Plan is not acceptable.
- Request for refund of 50€ rather than to the developer.
- Contains significant extracts from the submitted NIS

5.3.12. **Other**

- No-one cares about the people who live beside windfarms.
- Existing turbines are giving trouble to local people. The small turbines never give any trouble.
- Welcome a meeting with company officials to resolve difficulties. Failure to consult effectively with locals; developers have failed to provide a public meeting.
- The reasons for refusal of the adjacent Cluddaun windfarm apply to Oweninny. Several other windfarms proposals have been refused in the area.
- Requests an Oral Hearing (Rob Deane).
- Telecommunication reception/radio and tv interference has been negatively affected since the erection of Phase 1 and 2, with no mitigation in place to improve this.

## 5.4. Applicant’s Response to Submissions

5.4.1. In June 2023, the Board circulated the MCC Chief Executive’s report and third-party submissions in respect of the proposed development to the applicant.

Following an extension of time request in which to respond, the applicant prepared a themed response to the submissions received by the Board in July 2023. I note that the applicant's response erroneously refers to a submission from the Irish Aviation Authority; no submission had been received from the Irish Aviation Authority at that stage.

5.4.2. The main points of the Response are summarised as follows:

Traffic & Transportation:

- It is proposed to use an existing entrance formerly used for Phase 1. No construction works are required to construct a new access/modify an existing entrance. The site access will operate with significant spare capacity.
- The Contractor will be required to engage with relevant stakeholders regarding the proposed haul route and secure licences and permits as necessary. Structures along the haul route will be checked to confirm capacity to accommodate AILs.
- Pre and post construction pavement surveys will be undertaken immediately before and after construction for accurate representation of road conditions.
- Bridge structural surveys will be undertaken monthly along the haul route, during construction to monitor any deterioration.
- Noting MCC concern that the use of the R312 Castlebar to Bellacorick road was not permitted as a haul route, the haul routes are via the N59 only in the vicinity of the proposed development.

Noise & Vibration

- The predicted turbine noise levels for the proposed development are below the criteria at all noise sensitive locations. The contribution from the proposed development is 10 dB below the contribution of other existing and proposed wind turbines, therefore there is no cumulative turbine noise impacts at these NSL's.
- Regarding construction noise, reference is made to the EIAR, wherein it is stated that there will be some temporary effect on NSLs, which will not be

excessively intrusive. Construction noise limits/hours of operation can be applied.

Landscape & Visual

- This area, which is sparsely populated, has long been associated with commercial peat harvesting and power generation that has transformed to wind energy development.
- Landscape and wind energy policy for the area facilitates large scale wind energy development.
- There is potential for near significant levels of visual impact for some residents, however the turbines do not block or enclose views.
- The practice of erecting a physical visual aid is outdated and impractical. Photoreal depictions are used and must follow highly regulated processes to be considered 'verifiable views'.
- Mayo scenic routes were addressed in the LVIA; significant impacts were not considered to arise. The proposed development will not be visible from County Leitrim and County Donegal. If visible from County Sligo, the impact will be negligible.
- With respect to tourism impacts, only a lightly used section of the Western Way walking route is materially impacted by the proposed development.
- The red flashing aviation lights on the hubs of selected turbines are not a bright source of light that would illuminate the landscape.

Biodiversity

- As there will be no removal of forestry and limited removal of open bog, any potential disturbance of deer would have imperceptible effects on the current population and distribution of deer.
- The majority of protected habitats, plants and animal species, receptors were found to not have potential for impact; mitigation measures were imposed for those receptors which have potential to be impacted.
- There is some potential to local bird populations within and surrounding the site, including breeding wader and Golden plover. Avoidance, mitigation and

monitoring measures, which when implemented, will result in no significant effects on the local bird populations.

- There will be direct peatland loss (c. 83ha) arising, the majority consisting of highly modified cutover bog. A biodiversity enhancement plan (appendix 7.4 of the EIAR) will result in no significant effects to these areas.

AA Screening and NIS

- Confident the AA screening report has not failed the legal tasks setting out reasoning relating to source-pathway-receptor method.
- Clarifying that the Owenduff/Nephin Complex SAC was screened in while the Owneduff/Nephin Complex SPA was screened out.
- Clarifying that all mitigation measures, considered to be complete, precise and definitive, relevant to the protection of European sites are also set out in the NIS, including detail as to the location of temporary construction compounds.
- The exact location and construction detail of other recommended mitigation measures, such as silt fencing, have not been identified in the NIS, as the application of these measure is dependent on specific location conditions at time works are to be undertaken.
- The Surface Water Management Plan (SWMP) has not been solely relied upon when informing the conclusion of the NIS, the applicant is confident the approach used is robust.
- The European Sites were examined in relation to potential effects to their Conservation Objectives.
- There is no potential for altering the ground water conditions of the Bellacorick Bog SAC, therefore not impinging on the 'marsh saxifrage' or Fermoyle Flush'.
- With regard to screening out Owenduff/Nephin Complex SPA, the 11km max. foraging range for Glover Plover referenced by the DHLGH is referenced in the SNH guidelines as being the core foraging range during the breeding season only and noting that the SPA is designated for breeding Golden plover

only. Golden plover was only recorded 5 times during the survey breeding season (during September). It is considered that the plover populations recorded at the site of the proposed development are associated with wintering/migratory populations only; that the proposed development will not adversely affect the integrity of the breeding Golden plover population of the SPA.

- With regard to Merlin associated with the Owenduff/Nephin Complex SPA, although recordings during the survey period were low it was considered that these species were a possible breeding status likely to breed to the north or east of the proposed development site. These locations are beyond the Merlin foraging distance during the breeding season from the boundary of the Owenduff/Nephin Complex SPA and these populations were not considered to be connected.
- Merlin was excluded from the collision risk model as the model was only prepared for those species that were observed flying at potential collision height and merlin flight records did not meet the thresholds for inclusion in the model.
- Regarding methodology used to calculate significance of potential mortality to Golden plover, no accurate determination on magnitude can be made when trying to compare collision risk between breeding populations and wintering populations numbers.
- Notes that 1% of the national Golden plover population can be a significant number of individuals in the case of cumulative effects; collisions are likely to be lower based on an avoidance rate. Applicant considers that the results presented are accurate for the determination of magnitude on the wintering population of Golden plover.
- Confident that the conclusions achieved using the adopted thresholds in the CRM that informed the NIS and EIAR are accurate.
- The correct annual mortality due to predicted collisions for Golden plover is 0.031%, rather than the stated 0.024% of the national population.

<u>Shadow Flicker</u>

- It is not possible to comment on shadow flicker from Phase 1 and Phase 2. Set-back distances, screening and turbine shutdown mitigation measures will ensure there are no post-mitigation impacts.

Populations and Human Health

- State that the distance from Moyles' property to T12 – T17 ranges from 1,140m to >1,500m, in excess of the min. setback requirement of 500m as stipulated in the 2006 Wind Energy Development Guidelines and the 800m (4X tip height) stipulated in the 2019 Draft Wind Development Guidelines.
- Citing various studies from the UK, it is not anticipated that the proposed development will have any significant impact on the local property values.
- Regarding health effects there is little scientific evidence of the effects of Wind Turbine Syndrome and so significant health effects from the proposed development are not anticipated.
- Regarding sleep disturbance, no exceedances of the night-time threshold of 43 dB(A) are predicted at any sensitive receptors up to and including 7 m/s (at 10m height), and marginally above at three receptors at wind speeds greater than 8m/s.

Air Quality and Climate

- The overall risk of significant dust impacts as a result of vehicle movement prior to mitigation is medium, with the overall risk of human health impacts predicted to be low. Refers to the CEMP and Dust Management Plan for a range of measures to keep dust to a minimum.

Hydrology and Hydrogeology

- Data for pre and post construction of Phase 1 and Phase 2 highlights the existing good water quality.
- Referencing suspended solids data and stating the 2021 aquatic surveys highlight the good quality of even small streams within and surrounding the site; that mitigation measures will protect the good water quality.
- Additional monitoring will be undertaken upstream and downstream of the proposed development.

- Refers to the location map for the proposed culverts and a table showing each location and proposed design type.
- The on-site wheel wash will use a closed loop system with no discharge of silted waters to surface waters.
- Refers to the SWMP, settlement ponds and other SuDS measures for surface water management and siltation control.
- A Flood Risk Assessment predicted no increase in the rate of runoff from the cutover bog.
- On peatland restoration, mitigation measures and a biodiversity enhancement plan has potential to result in long-term positive effects to the peatlands in the immediate area.

Lands, Soils and Geology

- Based on ground investigations, the proposed foundations will be piled – trial pits consisted of peat underlain by sandy tills and silty sands. A Peat Stability Risk Assessment was undertaken: a “low” risk rating is achieved by the implementation of mitigation measures.

Cultural Heritage

- The additional recorded monuments within 5km of the proposed development have been screened for potential impacts. No significant negative impacts are predicted on the archaeological monuments located within 2-5km of the proposed turbines.
- No potential cumulative impacts upon the archaeological, architectural and cultural heritage resources have been identified.

5.4.3. The applicant’s response was circulated to interested parties, who were invited to make a submission. 5 no. submissions were subsequently received as detailed below:

- TII
- Gerard, Josephine and James Gallagher
- Hugh Broderick

- John G. Senior, Bridget, John G. Junior & Jillian Moyles
- Rob Deane

5.4.4. In summary, **TII** requests the Board to consider the access proposals to the N59, national road, in the context of the Section 28 guidelines, 'Spatial Planning and National Roads Guidelines for Planning Authorities' (2012) that seeks to avoid the creation of additional access points from new development or the generation of increased traffic from existing accesses to national roads, where speed limit greater than 50 kph apply. TII also welcomes clarification of other matters raised in it's original submission.

5.4.5. Submissions raised by **third parties** raise the following issues:

- States that Bord na Mona have caused total devastation stripping peat and polluting rivers. BnM was to return the land to the owners, mostly never happened. No real comprehensive restoration works have been done. Phase 3 will add another 83ha of peatland under concrete to a total of 230ha, destroyed and permanently removed from the ecosystem.
- Other windfarms proposals are better suited for development.
- Concerns previously raised have not been addressed.
- Shadow flicker: concerns over flicker caused by phases 1 & 2 and request details of shadow flicker data relating to phases 1 & 2. Request details of the exact technology to be used to shut down turbines. Concerned that mitigation measures will be ignored.
- Noise & vibration: concerns of amplitude modulation, daytime verses night-time varies substantially, occurs more often at nighttime. References several studies and reports, including some related to ill-health effects caused by turbines. Questions why it is not possible for the Board to measure noise levels from a residence. Noise guidance documents appear to be outdated. There was no consultation for phase 3 with locals in relation to noise levels.
- Landscape & visual: Request that a visual aid is put in place for the two turbines nearest their property. Turbines will be spatially dominant and overbearing.

- Biodiversity, AA Screening & NIS: Remain concerned with respect to biodiversity impacts and impact on breeding waders, Golden plover and also on cows, horses, badger and mink, citing study undertaken. Site is unsuitable due to proximity of SACs and SPAs, references certain bird species using site. The SACs and SPAs should be protected at all costs. Spread of invasive species and impacts of same, including release of carbon.
- Population and human health: EIAR mitigation measures are unsatisfactory. Calls for centralised monitoring for those who have constant long-term exposure to windfarms. Determined to conserve the homestead.
- Devaluation of property: citing a 2014 study which reports that those properties within 1.2 miles of a large wind farm would be devalued by c. 13%. A valuation carried out confirms this and can be made available.

## 6.0 Further Information & Consultations

6.1. Further information on the application was requested by the Board on 24th January 2024 relating to the following:

1. A site layout plan indicating the location of existing structures and development on site and on land adjoining the site, including existing turbines and access roads.
2. The submittal of an Addendum to the AA Screening Report and a revised NIS which screens in Owenduff/Nephin Complex SPA due to uncertainty of significance of effects either alone or in combination with other plans and projects.
3. Ornithology – questioning the use of national population figures to determine magnitude of effects at a local level is not appropriate, requesting an addendum to the ornithology impact assessment and NIS which has greater regard to the DAU submission and clearly setting out the rationale behind the use of arbitrary thresholds for the collision risk model and addressing the significance of predicted bird collision mortality at a more locally relevant level.
4. Bat Survey – clarify bat activity at Borrow Pit B.

5. Hydrology and hydrogeology – additional detail with respect to location and design of culverts, including a plan detailing their location and proposed design type. Clarify if extraction will occur below the water table at borrow pit. Clarify need for 43ha borrow pit.
6. Geology – clarify statement regarding peat stability in the EIAR.
7. EIAR – having regard to the foregoing, submit an addendum to the EIAR.

6.2. Following a request for additional time, a response from the applicant was received in March 2024. The response includes a revised site layout plan, indicating existing structures on site/adjoining the site. An addendum to the EIAR and a revised AA Screening Report and NIS were submitted. An updated Collision Risk Model Report and details relating to proposed bridge and drain crossings were also submitted. The Board considered that the additional information was significant, and the applicant was requested to publish revised public notices inviting submissions in relation to the additional information.

6.3. Additional submissions were received following the publication of significant additional information notices and are summarised below:

**TII:**

- TII's concerns as raised in previous submissions (18th May 2023 and 10th November 2023) remain and it has no specific observations to make in relation to the significant additional information.

**Irish Aviation Authority (IAA):**

- In the event of a grant of permission, a condition should be attached to contact the IAA to agree specific matters.

**Department of Housing, Local Government & Heritage, Development Applications Unit:**

- Considers that the applicant's response does not adequately address the comments made by the Department in relation to the appropriate reference population for determining the significance of collision mortality impacts.
- Regarding the wintering county populations of Golden plover, no differentiation is made between potential collision mortality impacts on the

breeding and wintering population. In addition, no rationale is provided for using the county boundary which is an administrative boundary as being synonymous with an area of suitable habitat. Also states that the population of breeding Golden plover is very different in size, and distribution, from the population, from the population of wintering Golden plover, stating a loss for breeding Golden plover could be more significant than losses during the wintering season.

- The rationale provided for excluding a separate analysis on the breeding population of Golden plover is that the potential collision impacts occur outside of the 'peak' breeding season, however it is not clear why it would matter when such an impact would occur during this season, all such impacts would potentially constitute an effect on the breeding population.
- References NatureScot approach used in Scotland which recommends the use of Natural Heritage Zones – biogeographical character, where impact is contexualised in terms of the populations of these areas before being contexualised nationally. While not in use in Ireland, administrative boundaries such as county boundaries may not be appropriate.
- Advises the Board of its obligations in relation to the Habitats Directive.

6.4. These submissions were circulated to the applicant for information purposes only as no new issues of significance arise. With respect to the DHLG&H in particular no new issues are raised and the applicant was afforded the opportunity to comment on the issues in both the response to submissions and the response to the request for additional information.

6.5. Further information on the application was again requested by the Board in October 2024 seeking the location details of shadow flicker sensitive receptors. Details, including aerial mapping, was duly submitted and circulated to all parties.

6.6. Further submissions in respect of the shadow flicker sensitive receptors were invited and were received from TII, Hugh Broderick, James Gallagher, John G. Moyles Senior & Family and Rob Deane. These submissions were circulated to the applicant for information purposes.

- **TII** refer to earlier submissions made and advise that it has no specific observations to make in relation to the further additional information.
- Several of the **third-party** submissions refer to issues previously raised or issues unrelated to the subject of the further information circulated. I note that one submission raises a series of questions including relating to results from these receptors, procedures and monitoring. Another submission states that the receptor was not placed at their house but in a field across the road in 2022 and that no data was ever provided; the data are requested. This submission also queries whether a new receptor was to be installed at their property in 2024 and request a new receptor is installed in the location indicated on the map. Another submission states that shadow flicker from the existing 2 phases affects a number of houses on a regular basis.

6.7. Matters relating to shadow flicker and associated receptors are assessed in section 10.5 of this Inspector's report.

## 7.0 Oral Hearing

7.1. The Board decided, by Direction dated the 31st May 2023, that an oral hearing was not warranted in relation to the subject case, as it was considered that there was sufficient written evidence on file to enable an assessment of issues raised.

## 8.0 Policy Context

### 8.1. National Planning Framework (NPF)

8.1.1. The NPF sets out a strategic national planning framework for the entire country to 2040 and is focused on delivering 10 National Strategic Outcomes (NSOs). It recognises the need to move toward a low carbon and climate resilient society (NSO 8), and it emphasizes that rural areas have a strong role to play in securing a sustainable renewable energy supply. It seeks to harness the country's renewable energy potential, achieve a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, and promote new energy systems & transmission grids (including on and off shore wind energy).

## 8.2. Climate Action Plan, 2024

8.2.1. The Climate Action Plan 2024 (CAP 2024) is the third update to Ireland's Climate Action Plan and includes an Annex of Actions. The CAP 2024 builds upon the previous CAPs (2019, 2021 and 2023) by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings. The CAP 2024 provides a roadmap for taking decisive action to halve Ireland's emissions by 2030 and reach net zero by no later than 2050.

8.2.2. As outlined in the CAP 2024, current and future key actions are required. The electricity sector requires a 75% reduction in emissions based on 2018 levels by 2030. 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 – also identified as a 2030 KPI to deliver abatement in electricity.

## 8.3. Wind Energy Development Guidelines, June 2006

8.3.1. The Guidelines advise that a reasonable balance must be achieved between meeting Government Policy on renewable energy and the proper planning and sustainable development of an area and it provides advice on wind energy development in terms of the development plan and development management processes. Guidance is given on matters such as noise, shadow flicker, natural heritage, archaeology, architectural heritage, ground conditions, aircraft safety, and windtake. Chapter 6 provides guidance on siting and design of wind energy development in the landscape. This includes advice on spatial extent and scale, cumulative effect, layout, and height of turbines.

## 8.4. Spatial Planning and National Roads - Guidelines for Planning Authorities 2012

8.4.1. These section 28 guidelines set out the planning policy considerations relating to development affecting national roads.

### 8.5. Draft Wind Energy Development Guidelines, 2019

8.5.1. The Draft Guidelines propose several key amendments to the original document in relation to noise, visual amenity, shadow flicker and community engagement. The application of more stringent noise limits in line with WHO noise standards together with a more robust noise monitoring system and reporting system is proposed. The mandatory minimum 500m setback from houses is retained but augmented by a setback of 4 x turbine height from sensitive receptors.

8.5.2. **Ireland's 4th National Biodiversity Action Plan 2023–2030**

8.5.3. Scientific assessments of the state of nature in Ireland have found that 85% of our EU-protected habitats are in unfavourable status, with almost half (46%) demonstrating ongoing declines. This is having negative impacts on wildlife. Almost a third of our EU-protected species are in unfavourable status, over half of native Irish plant species have declined. Over half of our 100 bee species have undergone substantial declines and 30% are threatened with extinction, 21% of breeding and 52% of key wintering bird species were reported to have short term declining trends.

### 8.6. Regional Spatial & Economic Strategy for the NW Region, 2020

8.6.1. The RSES provides a 12-year high-level development framework for the Northern and Western Region that supports the implementation of the National Planning Framework (NPF) and the relevant economic policies and objectives of Government.

8.6.2. A relevant section of the RSES is 'Renewable Energy and Low Carbon Future'. This includes policies supportive of renewable energy developments e.g. Regional Policy Objectives (RPO) 4.17 and 4.18 which seeks to support the development of secure, reliable and safe supplies of renewable energy, to maximise their value, maintain the inward investment, support indigenous industry and create jobs.

### 8.7. The Mayo County Development Plan (CDP) 2022-2028

8.7.1. The Mayo CDP is the relevant plan with respect to land use in Co. Mayo. Volume 1 comprises the Written Statement, Volume 2 comprises Development Management Standards. Volume 3 comprises the Book of Maps. Volume 4 comprises supporting documentation including the Landscape Appraisal for Mayo and the Mayo

Renewable Energy Strategy (RES). Chapter 4 of Volume 1 deals with Economic Development, Chapter 10 deals with Natural Environment and Chapter 11 deals with Climate Action and Renewable Energy.

8.7.2. Relevant **economic** development policies and objectives include EDO 54 and EDO 69 which support renewable energy resources and initiatives. INP 21 and INO 39 support the provision of electricity infrastructure and delivery of electricity transmission network requirements of renewable energy projects.

8.7.3. Relevant **natural environment** policies and objectives set out in the CDP include, and are summarised below:

- NEP 1 - support the protection, conservation and enhancement of the natural heritage and biodiversity of County Mayo.
- NEO 6 - protect surface waters, aquatic and wetland habitats and freshwater and water dependent species.
- NEO 8 - maintain, protect and where possible enhance the natural heritage and biodiversity of bogs, fens and turloughs, where appropriate.
- NEP 9 – protect and restore peatlands, where appropriate.
- NEP 10 - ensure that peatland areas are conserved for their ecological, climate regulation, archaeological, cultural and educational significance.
- Site is within Policy Area 3 – Uplands, Moors, Heath or Bog (Map 10.1). The landscape Sensitivity Matrix (Figure 10.1) states that windfarms, in Policy Area 3, have "*high potential to create adverse impacts on the existing landscape character. Having regard to the intrinsic physical and visual characteristics of the landscape area, it is unlikely that such impacts can be reduced to a widely acceptable level*."
- NEO 27 - ensure development proposals are consistent with the Landscape Appraisal of County Mayo and the associated Landscape Sensitivity Matrix.
- NEP 21, NEO 37, NEO 42 and NEO 43 all relate to protection of waters, including protection, enhancement and restoration of waters, and consideration of the Water Framework Directive.

8.7.4. Section 6.4.2.1 deals with **national roads**. Policy MTP 23 seeks to protect the national road network in compliance with the 'Spatial Planning and National Roads - Guidelines for planning authorities' (2012). Policy MTP 24 seeks to avoid the creation of additional direct access points from new development adjoining national roads or the generation of additional traffic from existing direct accesses to national roads to which speed limits greater than 60 km/h apply. MTO 22 applies a less restrictive approach to non-residential access to National Roads may be applied to development considered to be of National or Strategic Importance, however, exceptions are required to be identified for incorporation into the Development Plan.

8.7.5. Relevant **climate action** policies and objectives include CAP 9 – support national commitments for the exploitation of appropriate renewable energy sources where it does not have a negative impact on the surrounding environment and CAO 1 – support the provision of renewable energy resources.

8.7.6. Section 11.7.6 deals with Wind Energy. It is stated that MCC recognises the importance of onshore and offshore wind energy as a renewable energy source and its role in meeting Ireland's national target. It is further stated that the Council will endeavour to continue to facilitate wind energy projects that accord with the Mayo RES, the Landscape Appraisal of County Mayo and relevant Section 28 ministerial guidelines. Relevant **renewable energy** policies and objectives set out in the CDP include the following:

- REP 1 – support facilitation and exploitation of renewable energy sources which does not have a negative impact on the surrounding environment.
- REP 3 – support the sustainable development and renewal of energy infrastructure.
- REP 4 – ensure community consultation by developers of large-scale renewable energy projects.
- REP 5 – support energy efficiency and renewable energy system optimisation,
- REP 7 – promote the harnessing of wind energy in Mayo.
- REO 3 – encourage and facilitate energy production.

- REO 6 – ensure compliance with the Mayo County Council Renewable Energy Strategy 2011-2022 (or as updated).
- REO 8 – encourage the development of wind energy, having regard to the Landscape Appraisal of County Mayo, Wind Energy Development Guidelines and Mayo RES (or revisions).
- REO 23 – support achievement of the min. renewable energy target of 600MW for County Mayo over the plan and ensure consistency with any regional strategy.

8.7.7. Chapter 10 deals with the natural environment. Objective NEO 27 states it is an objective to ensure consistency with the Landscape Appraisal of County Mayo.

8.7.8. Volume 2 Development Management Standards requires all planning applications for wind energy turbines be assessed against the Wind Energy Guidelines.

8.7.9. **Renewable Energy Strategy (RES) for County Mayo (Volume 4 of the CDP)**

8.7.10. The aim of the RES is to develop the plan led approach to the location of renewable energy development. The RES incorporates maps identifying areas as suitable for particular energy development. Map 1 'Wind Energy' classifies potential areas for on-shore wind energy development, among 4 classifications: Priority Areas, Tier 1 – Preferred (Large Wind Farms, Tier 1 – Preferred (Cluster of Turbines), Tier 2 – Open for Consideration. The site comprises part of the 'priority area' which are identified "as areas which have secured planning permission and where on shore wind farms can be developed immediately" and 'Tier 1' are areas in which the potential for large wind farms is greatest.

8.7.11. Relevant objectives include (summarised):

- 1.1: assist in achieving national targets for reducing GHGs associated with energy production.
- 1.2: encourage renewable energy production;
- 2.1: ensure compliance with legislation relating to protection of the environment.

- 2.2: follow a sustainable plan led approach to renewable energy development, to preferred locations as set out in section 6.4 and complying with standards in section 6.5.
- 2.4: ensure that renewable energy developments do not impinge on designated visual amenity areas, rights of way, public routes, scenic routes and views, architectural heritage and Architectural Conservation Areas, archaeological heritage and vulnerable or sensitive landscapes.
- 4.1: ensure the advantages presented by renewable energy development outweigh the disadvantages for the majority of the community and for the wider environment.
- 4.3: renewable energy development proposals are required to incorporate the concept of community benefit.

8.7.12. **Landscape Appraisal of County Mayo (Volume 4 of the CDP)**

8.7.13. The site is located in Area F: North Mayo Inland Bog Basin which is described as a large bog area of 300sq km surrounded to the north, west and south by mountains giving it the appearance of a lowland basin. Smooth terrain allows vistas over long distance. As a result, development can have a disproportionate visual impact in such terrain, due to an inherent inability to be absorbed, physically or visually.

8.7.14. Section 3 of the Appraisal deals with areas designated as 'vulnerable' and includes Lough Dahybaun and the Owenmore River and Oweninny River, among a long list of others.

Policy 3.1(b) relates to Areas Designated as Vulnerable – "…*development in the environs of these vulnerable areas must be shown not to impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites*."

Peat Bogs and watercourses are among the 'main areas' designated as 'sensitive'. Policy 3.2(b) relating to areas designated as sensitive include: applications for development in these areas must demonstrate an awareness of these inherent

limitations by having a very high standard of site selection, siting layout, selection of materials and finishes.

The site is also indicated to be in Policy Area 3 relating to uplands, moors, heath or bogs. The following policies are relevant:

- *Policy 15: facilitate developments that have a locational requirement to be situated on elevated sites (e.g. telecommunications and wind energy structures). It is necessary however to ensure that adverse visual impacts are avoided or mitigated wherever possible.*
- *Policy 16: Preserve from development any areas that have not already been subject to development, which have retained a dominantly undisturbed upland/moorland character.*

The landscape appraisal includes:

- Development Impact Potential Index: windfarms are given a high development impact potential.
- Development Impact – Landscape Sensitivity Matrix: Policy Area 3 – windfarms: high potential to create adverse impacts on the existing landscape character.

## 8.8. Natural Heritage Designations

8.8.1. The subject site is situated within close proximity to a number of European and national sites of natural heritage interest. These are shown in Figure 7.1 of the EIAR and include the following European sites, which border or straddle the subject site, Bellacorick Bog Complex SAC and pNHA, Lough Dahybaun SAC, and Bellacorick Iron Flush SAC c.400m to the north of the site. River Moy SAC lies c. 2.5km south of the proposed development site boundary. Owenduff/Nephin Complex SAC and SPA lies c. 3.5km to the southwest and Carrowmore Lake Complex SAC lies c. 4.5km west of the proposed development. Forrew Bog NHA lies c. 3km east of the proposed development, while Ummerantarry Bog is located c. 4km north of the proposed development site. Knockmoyle, Sheskin Nature Reserve and Owenboy, Nature Reserve, Knockmoyle/Sheskin RAMSAR Site (Code: 372) Owenboy

RAMSAR Site (Code: 371) are located between c. 700m-2km of the development site.

# 9.0 Planning Assessment

## 9.1. Introduction

9.1.1. This assessment has three elements: a planning assessment, an environmental impact assessment (EIA), and an appropriate assessment (AA). In each assessment, where necessary, I refer to issues raised by the different parties in the various submissions to the Board. There is an inevitable overlap between some assessments, for example some matters raised fall within both the EIA and the AA processes.

9.1.2. Having examined the application details and all other documentation on file, including all of the submissions received in relation to the appeal, and inspected the site, and having regard to relevant local/regional/national policies and guidance, I consider that the main issues are as follows:

- Planning Policy Assessment
- Environmental Impact Assessment
- Appropriate Assessment Screening
- Appropriate Assessment

9.1.3. These matters are addressed in the relevant planning, environmental impact assessment and appropriate assessment sections of this report. Conditions which are referred to by parties to the application are considered in the relevant topic section of this report and/or in the recommended conditions should the Board decide to grant permission for the development.

## 9.2. Planning Policy Assessment

9.2.1. <u>Issues Raised</u>

- The MCC Chief Executive's Report considers that the use of the land as a windfarm has been established. The Report states the location has become a

centre for renewable energy projects, Mayo are supportive of renewable energy projects at this location.

- Public submissions raise concerns that the area is over-developed with wind turbines. Concerns are raised with regard to the proximity of turbines to residential property.
- TII point to the Spatial Planning and National Roads Guidelines for Planning Authorities (2012) and policies MTP 23 and MTP 24 of the Mayo County Development Plan 2022-2028 (referenced in section 8.7 of this Inspector's report) which seek to avoid the creation of additional access points from new development or the generation of increased traffic from existing access to national roads where speeds limits greater than 50 kph apply.

9.2.2. **Policy Context**

9.2.3. Climate Action Plan 2024 seeks to accelerate renewable energy generation, including a 9 GW onshore wind capacity by 2030 in order to reach 80% of electricity demand from renewable sources by 2030. The proposed development will contribute to the delivery of onshore wind energy production and is compatible with the Climate Action Plan, 2024.

9.2.4. The proposed windfarm is compatible with national planning policy as set out in the National Planning Framework, 2018-2040 which recognises the need to move toward a low carbon and climate resilient society with a sustainable renewable energy supply.

9.2.5. The 2006 Wind Energy Development Guidelines advise that a reasonable balance must be achieved between meeting national policy on renewable energy and the proper planning and sustainable development of an area. The Guidelines also state that projects should not adversely affect any European sites, have an adverse impact on birds, give rise to peat instability or adversely affect drainage patterns, cultural heritage, sensitive landscapes, the local road network or residential amenity. These practical issues will be addressed in more detail in the relevant sections of the Environmental Impact Assessment and Appropriate Assessment sections of this report.

9.2.6. I note the concern regarding declining biodiversity contained in Ireland's 4th National Biodiversity Action Plan 2023–2030. Impact on biodiversity is examined and addressed in the Environmental Impact Assessment and Appropriate Assessment sections of this report.

9.2.7. The proposed windfarm is compatible with regional planning policy as set out in the Regional Spatial & Economic Strategy for the North West Region which seeks to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the sustainable expansion of the transmission network.

9.2.8. The Mayo County Development Plan (CDP) 2022-2028 contains a number of policies and objectives which promote the provision of renewable energy development in the county, including economic development policies and objective EDO 54 and EDO 69 support renewable energy resources and initiatives, while INP 21 and INO 39 support the provision of electricity infrastructure and delivery of electricity transmission network requirements of renewable energy projects. Policy CAP 9 and objective CAO 1 supports the exploitation of and provision of renewable energy resources. Policies REP 1, REP 3 and REP 7 support the development of renewal energy infrastructure, while objectives REO 3 encourages energy production, REO 6 seeks compliance with the MCC Renewable Energy Strategy, REO 8 and REO 23 encourages the development of wind energy and achievement of renewable energy target of 600MW for the County over the plan period.

9.2.9. The Renewable Energy Strategy for County Mayo incorporates maps identifying areas as suitable for particular energy development. Map 1 'Wind Energy' classifies potential areas for on-shore wind energy development, among 4 classifications:

- Priority Areas
- Tier 1 – Preferred (Large Wind Farms
- Tier 1 – Preferred (Cluster of Turbines)
- Tier 2 – Open for Consideration.

The site part-comprises 'priority area' which are identified "*as areas which have secured planning permission and where on shore wind farms can be developed immediately*" and part-comprises 'Tier 1' which "*are areas in which the potential for*

*large wind farms is greatest*." The Board will note that MCC, in its Chief Executive report, refers to the site as being within an area of 'open for consideration'. I am satisfied that the site is in fact, located in 'Priority Areas' and 'Tier 1 -Preferred'. I note that MCC in its submission state that the principle of the location is considered acceptable and that the use of the land as a windfarm has been established.

9.2.10. Notwithstanding that the proposed windfarm would be partially located within the site of an existing permitted operational windfarm that dates from the mid-1990s, I am satisfied that the proposed windfarm is compatible with the general climate change and renewable energy policies and objectives of the Mayo County Development Plan 2022-2028 as detailed above.

9.2.11. I note the concerns raised in some third party submissions relating to the overdevelopment of wind turbines in the area, and I note that since this application was lodged, the Board has granted permission for Sheskin Windfarm, comprising 21 turbines, located c. 5.4km to the west of the proposed development site, and a further application for permission for 22 no. of turbines was submitted to the Board, located c. 6.3km to the north of the site. I am guided, however, by Mayo's County Development Plan, which specifically identifies this site as appropriate for a windfarm.

9.2.12. Other development plan policies and objectives seek to protect the environment, European sites, biodiversity, scenic landscapes, views, residential amenity and cultural heritage. Volume 2 Development Management Standards requires all planning applications for wind energy turbines be assessed against the Wind Energy Guidelines. These issues will be addressed in the relevant Environmental Impact Assessment and Appropriate Assessment sections of this report.

9.2.13. **National Road Policy**

9.2.14. TII raise concerns in respect of the Spatial Planning and National Roads, Guidelines for Planning Authorities, 2012 and Policies MTP 23 and Policy MTP 24 of the Mayo County Development Plan which seek to avoid the creation of additional access points from new development or the generation of increased traffic from existing access to national roads where the speed limit is greater than 60 kmh. TII request the Board consider the proposals in the context of road safety and official policy.

The Board will note that Mayo County Council Chief Executive's Report considers that subject to the mitigation measures in the EIAR the proposed development will not have a significant impact on the road's infrastructure or on traffic safety in the area.

9.2.15. With respect to road safety, I am satisfied based on my EIA assessment of the traffic and transport chapter of the EIAR (see section 10.12 of this Inspector's Report) and accompanying planning application documents that the proposed development will have a moderate effect on the N59 for a limited period of 3 months and the remainder of the construction period will have a variable effect on the N59 route and junction to the site ranging from slight negative to not significant. The applicant states, in the response to further information, it will undertake a Road Safety Audit should works be required which result in modifications to the existing road network i.e. pending finalisation of the AIL haul route. I am therefore satisfied, subject to mitigation measures set out in section 17.5 of the EIAR and the undertaking of a Road Safety Audit, as may be required, that the proposed development would not give rise to a significant increase in traffic nor compromise road safety on the national route.

9.2.16. Mayo CDP Policy MTP 24 seeks to avoid the creation of additional direct access points from new development adjoining national roads or the generation of additional traffic from existing direct accesses to national roads to which speed limits greater than 60 km/h apply. While the proposed development will not create a new access onto the national road, it will generate additional traffic from an existing direct access onto the N59 national road, albeit a 'not significant' level. It should be noted that I conclude in section 10.12 of the EIA that the proposed development will not have a significant impact on the adjoining national road. I note that Road Objective MTO 22 provides for a less restrictive approach where development is of national or strategic importance, however these exemptions are required to be identified in the Development Plan. Save for one site in Ballina, no other sites have been identified for exemption, and so the proposed development falls to be considered under Policies MTP 23 and Policy MTP 24 of the Mayo County Development Plan which seek to avoid the generation of increased traffic from existing access to national roads where the speed limit is greater than 60 kmh. As the proposed development will generate increased traffic from existing access to a national road which is to be

'avoided' and having regard to TII's concerns, the Board will need to consider if the proposed development amounts to a material contravention of the development plan.

9.2.17. Section 37G (2) of the Planning and Development Act, as amended, requires that An Bord Pleanála have regard to the provisions of County Development Plans in the case of Strategic Infrastructure Development (SID) applications, however, should the Board be minded to grant permission for the development, it is not constrained by material contravention considerations (Section 37G(6) of the Act).

37G(6) of the Act states:

> *"The Board may decide to grant a permission for development, or any part of a development, under this section even if the proposed development, or part thereof, contravenes materially the development plan relating to any area in which it is proposed to situate the development."*

9.2.18. I consider that the proposed development is of strategic importance having regard to the provisions of the Climate Action Plan 2024 which seeks to accelerate renewable energy generation, including a 9 GW onshore wind capacity by 2030 in order to reach 80% of electricity demand from renewable sources by 2030. The proposed development will contribute to meeting the objectives of the Climate Action Plan.

9.2.19. **Conclusion**

Overall, the policy position at national, regional and local level supports the proposed windfarm development. I am satisfied that the principle of the proposed development adequately accords with the provisions of national, regional and local policies which seeks to promote the development of renewable energy projects in an effort to address Ireland's renewable energy target and climate action commitments. Having regard to TII's submission and Policy MTP 24 of the Mayo County Development Plan which seeks to avoid generation of additional traffic from existing direct accesses to national roads to which speed limits greater than 60 km/h apply, the proposed development could be considered to be a material contravention of the Development Plan in this regard. I am satisfied however that should the Board be minded to grant permission, that that they are not constrained by the development plan having regard to the provisions of the National Planning Framework which seeks to harness the country's renewable energy potential and the Climate Action

Plan which seeks to accelerate renewable energy generation, including a 9 GW onshore wind capacity by 2030.

### 9.3. Community Benefit Scheme

9.3.1. Section 3.2 and Appendix 1.3, 'Oweninny Wind Farm Community Report', of the EIAR provides details of the Community Benefit proposal. A range of benefits associated with the development will be provided to the local community through the annual Community Gain Scheme. In addition, the Near Neighbour Scheme will offer electricity bill payers living within a prescribed distance of a wind turbine an annual contribution towards their electricity usage. The value of the fund for the Community Gain and Near Neighbour Schemes will be directly proportional to the installed capacity and energy produced at the site, which according to the EIAR will be in the region of €10 million over the lifetime of the project based on current schemes.

9.3.2. The Renewable Electricity Support Scheme (RESS) is a Government of Ireland initiative that provides support to renewable electricity projects in Ireland. One of the key objectives of RESS is to provide an Enabling Framework for Community Participation through the provision of pathways and supports for communities to participate in renewable energy projects. The EIAR states that iIf the proposed development utilises the RESS model, then any community benefit stipulations outlined in the finalised RESS model will have to be incorporated into the operation of the wind farm and will be of enduring benefit to the local community.

9.3.3. The methodology by which the fund is managed is a matter for the provisions of the scheme and the applicant. I have an included a condition to this effect for the Board's consideration.

## 10.0 Environmental Impact Assessment

### 10.1. Statutory Provisions

10.1.1. The application is accompanied by an Environmental Impact Assessment Report (EIAR) which was prepared by TOBIN Consulting Engineers on behalf of the applicant. This EIA section of the report should, where appropriate, be read in conjunction with the relevant parts of the Planning Assessment above.

10.1.2. The application was submitted under Section 37E of the Planning and Development Act 2000 (as amended) and it was accompanied by an EIAR, as required for any application made under this section of the Act.

10.1.3. Part 1 of Schedule 5 of the 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. The proposed development falls within the definition of a project under the EIA Directive as amended by Directive 2014/52 (execution of construction works) and falls within the scope of Class 3 (i) of Part 2 of the Fifth Schedule of the Regulations:

> 3. 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'.

The proposed development with a total of 18 no. turbines with an estimated capacity of 90MW exceeds these thresholds and is therefore subject to mandatory EIA.

## 10.2. EIA Structure

10.2.1. This section of the report comprises an assessment of the likely significant effects of the proposed development. It addresses compliance with legislation, describes and assesses the likely significant direct and indirect effects of the development against the factors set out under Article 3(1) of the EIA Directive 2014/52/EU. It considers cumulative effects and interactions and the vulnerability of the proposed development to major accidents and disasters.

10.2.2. 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 for approval. A summary of the Mayo County Council's Chief Executive's report and a summary of submissions received from prescribed bodies and observers are set out at Sections 5 and 6 of this report. The main issues raised specific to EIA can be summarised as follows:

- the environmental carrying capacity of the site and area
- the likely significant impacts arising.

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

10.2.3. The EIAR is laid out as follows:

- Non-Technical Summary
- Main Report
- Technical Appendices (Binders 1 & 2) and separate photomontages in two booklets (Book 1: VP1 – VP12 and Book 2: VP13 – VP24).

10.2.4. The impact of the proposed development is addressed under all relevant headings with respect to the environmental factors listed in Article 3(1) of the 2014 Directive, which include:

(a) population and human health,

(b) biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive,

(c) land, soil, water, air and climate,

(d) material assets, cultural heritage and the landscape,

(e) the interaction between the factors referred to in points (a) to (d), and

(f) the vulnerability of the proposed development to risks of major accidents and/or disasters.

## 10.3. Compliance with the Requirements of Article 94 and Schedule 6 of the Regulations 2001

10.3.1. Compliance with the requirements of Article 94 and Schedule 6 of the Regulations is assessed below.

| **Article94 (a) Information to be contained in an EIAR (Schedule 6, para. 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). |

| |
|---|
| See Chapter 3 which includes details on the site, design, size and relevant features. The description is adequately detailed to allow assessment of the likely effects on the environment. |
| A description of the likely significant effects on the environment of the proposed development (including the additional information referred to under section 94(b). |
| See Chapters 6-18. Each of these chapters describes the significant effects on the environment. An EIAR Addendum was submitted by the applicant by way of additional information. |
| A description of the features, if any, of the proposed development and the 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). |
| See Chapters 6-18 and associated appendices and summarised in Chapter 20. I am satisfied that the mitigation measures are sufficient to minimise the environmental effects. |
| 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). |
| Yes, see section 10.3.2 below. |
| **Article 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 location of the proposed development |
| Yes, this is set out in Chapter 3 and the relevant chapters, as relevant, |
| A description of the physical characteristics of the whole proposed development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases, |

| |
|---|
| Yes, this is detailed in chapter 3 and as the relevant chapters. |
| A description of the main characteristics of the operational phase of the proposed development |
| Yes, this is addressed in the relevant chapters. |
| An estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases |
| Yes, this is addressed in the relevant chapters. |
| A description of the baseline environment and likely evolution in the absence of the development. |
| Yes, each of the chapters that deal with the relevant factors described the baseline environment and the likely evolution in the absence of the development (do-nothing scenario). |
| A description of the factors likely to be significantly affected by the proposed development: |
| Yes |
| 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) encountered compiling the required information, and the main uncertainties involved |
| Yes, this is addressed in the relevant chapters. |
| 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. |
| Yes, this is addressed in the relevant chapters, as necessary. Risks during construction and operation considered and mitigated for. |
| Article 94 (c) A summary of the information in non-technical language. |

| |
|---|
| Yes – the Non-Technical Summary accurately reflects the chapters in the main volume. |
| Article 94 (d) Sources used for the description and the assessments used in the report. |
| This is provided for in each chapter. |
| Article 94 (e) A list of the experts who contributed to the preparation of the report. |
| This is provided for in each chapter. |

10.3.2. **Alternatives**

10.3.3. Under the provisions of Article 5(1)(d) of the 2014 Directive it is a requirement 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*".

10.3.4. Chapter 4 of the EIAR deals with the consideration of alternatives. The 'do-nothing' alternative is considered whereby the site is left as is – i.e. continuation of the existing wind farm on site. Ten alternative sites were considered from across the country, and a site-specific assessment of the candidate sites using selected environmental criteria was undertaken; the Oweninny Wind Farm Phase 3 site was considered to be suitable for the development of a windfarm. Other alternatives considered relate to design/ layouts and, design and processes. The development site for the 2013 planning application layout includes the lands that form the application site for this Oweninny Wind Farm Phase 3 development. That portion of the overall site in 2013 layout included a total of 50 turbines but was not considered appropriate because of environmental constraints and the capacity of the existing grid infrastructure. The present layout and number of turbines takes account of the planning history and more recent site investigations/constraints. Alternative turbine configurations, site entrances, substation locations, borrow pit locations and peat deposition areas were among alternatives considered. Alternative land uses, such as

forestry and alternative sources of energy, such as solar were also considered in an examination of alternatives. The EIAR concluded that the Oweninny site is a highly suitable location for the development of wind energy.

10.3.5. I consider that the matter of examination of alternatives has been satisfactorily addressed in the EIAR. I consider that the level of detail is reasonable and commensurate with the project. It indicates how the proposed development evolved and how it was adjusted to take into consideration environmental effects. I am satisfied that the process is robust and that the requirements of the Directive are fully complied with.

10.3.6. **Consultations**

10.3.7. The application has been submitted in accordance with the requirements of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended) in respect of public notices. In addition, the applicant has carried out public consultation as detailed above in section 5.0 and 6.0 of this Inspector's report. Submissions have been received from statutory bodies and third parties and are considered in this report, in advance of decision making.

10.3.8. I am satisfied, therefore, that appropriate consultations have been carried out and that third parties have had the opportunity to comment on the proposed development advance of decision making.

10.3.9. **Compliance**

10.3.10. Having regard to the foregoing, I am satisfied that the information contained in the EIAR, and supplementary information provided by the developer is sufficient to comply with article 94 of the Planning and Development Regulations, 2001. Matters of detail are considered in my assessment of likely significant effects, below.

10.4. **Assessment of the Likely Significant Effects on the Environment**

10.4.1. 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. The assessment follows the headings in

Article 3(1) of the EIA codified Directive and are set out below. Sub-headings as set out in specific chapters of the EIAR are assessed under the relevant factor.

- Population and Human Health
    - Shadow Flicker
- Biodiversity, with particular attention to the species and habitats protected under the Habitats and Birds Directives (Directive 92/43/EEC and Directive 2009/147/EC respectively).
    - Ornithology
- Land, Soil, Water, Air and Climate
    - Soils & Geology, Geotechnics & Ground Stability
    - Hydrogeology
    - Hydrology & Water Quality
    - Air Quality & Climate
    - Noise & Vibration
- Material Assets, Cultural Heritage and the Landscape
    - Landscape & Visual Impact Assessment
    - Material Assets: Aviation & Telecommunications
    - Traffic & Transportation
    - Archaeological, Architectural & Cultural Heritage
- The Interaction between the above factors
- Vulnerability of the project to risks of major accidents and/or disasters.

Baseline characteristics and an evaluation of impacts on each sensitive aspect are set out, together with mitigation measures and residual impacts.

10.4.2. In accordance with section 171A of the Act, which defines EIA, this assessment includes an examination, analysis and evaluation of the application documents, including the EIAR and submissions received and identifies, describes and assesses the likely direct and indirect significant effects (including cumulative effects) of the

development on these environmental parameters and the interaction of these. Each topic section is therefore structured around the following headings:

- Issues raised in the appeal/application.
- Examination of the EIAR.
- Analysis, Evaluation and Assessment: Direct and indirect effects.
- Conclusion: Direct and indirect effects.

## 10.5. Population and Human Health

### 10.5.1. Issues Raised

10.5.2. Submissions raise concerns regarding the impact of the development in respect of noise, visual impact, shadow flicker, density/quality of turbines, private property, devaluation of dwelling houses, deer encroachment, sleep disturbance, health effects, dust impact, telecommunication reception affected and impact on tourism.

10.5.3. Further submissions in respect of the location of shadow flicker sensitive receptors were received following receipt of additional information. Of the submissions received that related to shadow flicker one submission raises a series of questions including relating to results from these receptors, procedures and monitoring. Another submission states that the receptor was not placed at their house but in a field across the road in 2022 and that no data was ever provided; the data are requested. This submission also queries whether a new receptor was to be installed at their property in 2024 and request a new receptor is installed in the location indicated on the map. Another submission states that shadow flicker from the existing 2 phases affects a number of houses on a regular basis.

10.5.4. Mayo County Council raise concerns regarding the cumulative effect obstacle warning lights on the local population. The Department of Defence and the IAA seeks conditions around obstacle lighting in the interests of aviation safety. TII request that the Board consider the proposals with regard to the Section 28 guidelines to ensure road safety. The matter of road safety is considered in section 10.11 of this Inspector's Report.

### 10.5.5. Context

Chapter 6 deals with population and human health and was prepared by TOBIN Consulting Engineers. The assessment methodology includes a desk study and site visit and findings from relevant chapters of the EIAR, including Air Quality & Climate, Shadow Flicker, Noise & Vibration, Traffic & Transportation and relevant sections relating to Major Accidents/Disasters. Chapter 6 sets out relevant guidance, describes the baseline receiving environment and identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of impacts and assesses residual impacts. Limitations are not expressly considered in Chapter 6 and no limitations are apparent. In terms of land use, the proposed wind turbines are expected to have a lifespan of 30 years.

10.5.6. **Baseline**

Chapter 6 describes the baseline environment in terms of population, settlement patterns, property values, human health, tourism, employment and economy. The site lies in a remote rural area on Oweninny Bog, with a declining population.

The proposed wind farm site is approximately 6km long in the north/south direction and is approximately 5km wide in an east/west direction at the widest point. In excess of 78 no. receptors were identified within a 2km radius. The closest sensitive receptor is located more than 1,000m from the nearest proposed turbine location. The closest borrow pit location is c. 725m from a residential property and access road works will take place at a minimum distance of c. 250m from the nearest residential building.

Noise Sensitive Receptors are identified as R1-R80 and the ITM coordinates of these are provided in Appendix 13.1. Shadow flicker receptors were identified in additional information submitted by the applicant and correspond to the noise sensitive receptors.

10.5.7. **Likely Significant Effects**

Likely significant effects of the development, as identified in the EIAR, are summarised below:

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|

| | |
|---|---|
| **Do nothing** | The existing cutaway/cutover peatland will continue to revegetate in-line with the current rehabilitation plan.<br><br>The land would continue to be utilised for sheep grazing, forestry purposes and unmanaged bog.<br><br>Opportunities for economic activity arising from the proposed development will not be realised.<br><br>Opportunity for renewable energy and associated health benefits will be lost.<br><br>There will be no emissions generated from construction works and no potential for noise, shadow flicker or visual effects associated with wind turbines at this site. |
| **Construction** | Short-term land use change.<br><br>Short-term increase in construction workers staying locally, generating economic activity.<br><br>Negative effects on residential properties and the local population, including traffic movements, could include noise and air quality, and residential amenity impact. |
| **Operation** | Permanent works on the existing land primarily including turbine foundations, hardstand areas at turbines, internal roads and an on-site substation.<br><br>There will be a slight long-term negative effect on residential amenity. The significance of this effect is considered as moderate and variable in the worst-case noise conditions.<br><br>The energy generated will feed directly into the national electricity transmission system providing a sustainable electricity source and an increasingly competitive, low impact, energy supply for consumers.<br><br>Shadow flicker: Based on the worst-case conditions, it is predicted that 4 no. shadow flicker receptors (receptors |

| | |
|---|---|
| | no. 73, 74, 75 and 76) will experience daily shadow flicker in excess of the 2006 WEDGs threshold of 30 minutes per day (See Table 14.1 of the EIAR).<br><br>The proposed eastern-most turbines will have a significant visual impact on the vista presently enjoyed by residents along/off the L5292 the townlands of Formoyle, Corvoderry and Shanvolahan and the L5160 in the townland of Doobehy (see section 10.14 of the EIA below).<br><br>Potential impact on telecommunications networks. |
| **Decommissioning** | The activities required to facilitate wind turbine decommissioning and removal from site will be similar to those outlined for the construction phase in terms of potential noise and air quality as well as increased construction traffic movements although these will be significantly less than during the construction stage. |
| **Cumulative** | There is potential for an operational phase cumulative effect on noise, shadow flicker and visual impacts associated with two existing operational phases of the Oweninny Windfarm. It would not be possible, even in the worst-case scenario, for the four identified receptors (73, 74, 75 & 76) to experience a cumulative shadow flicker effect from the two wind farms at the same time or on the same day due to the position of the properties and the proposed/existing wind turbines relative to the position of the sun in the sky at any given time.<br><br>In terms of traffic, the potential for cumulative effects will occur primarily during the construction phase where construction traffic associated with the proposed development could overlap with construction or operations of other projects. |

10.5.8. **Mitigation**

Mitigation measures are set out in section 6.5 of the EIAR, and in respective chapters of the EIAR e.g. section 14.5 deals with mitigation measures relating to shadow flicker, and are summarised below:

| Effect | Mitigation Measures |
|---|---|
| **Land-use changes** | Best practice construction methodology and measures to minimise impacts from excavation works, as described in Chapter 9 (Soils and Geology).<br>Borrow pits will be backfilled and revegetated.<br>Hardstandings and foundations will be covered over and revegetated after the operational phase.<br>Access roads will be left in situ, as will the substation. |
| **Air quality** | Good construction practice and mitigation measures in terms of dust control will minimise any potential effects |
| **Shadow Flicker** | Modelling of predicted shadow flicker occurrence is presented in Chapter 14 (Shadow Flicker) and assessed against the current 2006 Wind Energy Guidelines. Design stage considerations and mitigation measures set out in section 14.5 will ensure that there will be no shadow flicker occurrence at any sensitive receptor subject to automatic turbine shutdown in conditions that might cause shadow flicker. |
| **Noise & telecommunications impact** | The layout of the site and the positions of the turbines have been designed to ensure sufficient set-back distances from sensitive receptors and adjustment for noise and telecommunication impacts. |
| **Visual Impact** | The EIAR states that extensive consideration has been given to the layout of the site and the positions of the turbines in ensuring sufficient set-back distances from sensitive receptors and adjustment for visual impacts. |

| | |
|---|---|
| **Residential amenity** | The design of the proposed development has included a minimum set-back distance of 1000m from the nearest residential building to the proposed turbine locations which will reduce the potential for the wind turbine infrastructure to have a significant effect on residential amenity. |

10.5.9. **Residual Effects**

10.5.10. During construction, there will be a slight positive residual impact on the local population through an influx of construction workers in the short-term, which will boost the local economy. There will be a short term slight negative effect as a result of the construction phase traffic and associated noise. During operation, the proposed development will provide clean energy from a renewable resource and help to achieve targets in national energy and climate change policies resulting in a positive long-term residual effect. The establishment of a Community Benefit Fund is a long-term positive effect on the local community in general. During decommissioning, works will be short-term, imperceptible and negative.

10.5.11. As per my conclusion in section 10.14 – Landscape & Visual Impact - of this Inspector's Report, it is not possible to mitigate the visual impact of the proposed turbines from certain impacted residential properties.

10.5.12. **Assessment – Direct and Indirect Effects: Population and Human Health**

10.5.13. Submissions raise concerns regarding the impact of the development in respect of noise, visual impact, shadow flicker, density/quality of turbines, private property, devaluation of dwelling houses, deer encroachment, sleep disturbance, health effects, dust impact, telecommunication reception and impact on tourism. MCC raise concerns regarding the cumulative effect of obstacle warning lights on the local population.

10.5.14. I have examined, analysed and evaluated Chapter 6 of the EIAR, all of the associated documentation and submissions on file in respect of Population and Human Health. I am satisfied that the applicant's understanding of the baseline

environment, by way of desk-top analysis, surveys and assessment is comprehensive.

10.5.15. During construction, short term impacts on the local road infrastructure and construction noise and dust will arise resulting in a slight negative effect on residential amenity which will be short-term for the construction phase but with mitigation measures including the management of traffic as proposed, impacts will not be significant. The proposed development will create and support direct and indirect employment during the construction phase at local level.

10.5.16. With respect to noise and vibration, I conclude under section 10.11 below that the proposed development, including construction works, will not have a significant impact on noise sensitive receptors either individually or cumulatively with Oweninny Phase 1 and Phase 2 or the permitted hydrogen power plant in the vicinity of the site.

10.5.17. With respect to air and climate, I conclude under section 10.10 that the proposed development will not give rise to any direct, indirect or cumulative significant adverse effects on air quality or climate and will give rise to long term, direct and cumulative positive effects on air quality and climate; the energy generated will feed directly into the national electricity transmission system providing a sustainable electricity source and an increasingly competitive, low impact, energy supply for consumers.

10.5.18. With respect to visual and landscape amenity, long-term landscape and visual effects will arise, notably in the immediate area of the site. However, the landscape in the immediate area of the site is already affected by wind farm development and residential properties are considerably removed from the proposed turbines (at least 1km from any turbine). It is not possible to mitigate the visual impact of the proposed turbines from certain impacted residential properties. In my conclusion of landscape and visual impact assessment under section 10.14 of this Inspector's Report, I note that the site is designated as suitable for on-shore wind energy development, as 'Priority Area, Tier 1' in the Renewable Energy Strategy for County Mayo, and in my opinion the proposed turbines will be read in conjunction with existing wind turbines in the area and as an extension to an existing wind farm development.

Consequently, I am of the opinion that impact on landscape of visual effects are not reasons to refuse permission.

10.5.19. With respect to shadow flicker, the EIAR details that based on the worst-case conditions, it is predicted that 4 no. shadow flicker receptors (73, 74, 75 & 76) will experience daily shadow flicker in excess of the 2006 WEDGs threshold of 30 minutes per day. The WindPRO modelling software has built-in options to specify statistical weather data to produce more realistic predictions of annual shadow flicker effects. These predicted results are presented in the column titled 'Expected Annual Shadow Flicker' in Table 14-1. The technical assessment shows that the guideline threshold limit of 30 hrs per year is not predicted to be exceeded at any receptors in the worst-case scenario and is also not exceeded at any receptors when the statistical sunshine probability and wind reduction factors are taken into account.

10.5.20. There are four receptors (73, 74, 75 & 76) which are predicted to experience cumulative shadow flicker effects in the worst-case scenario, from both the proposed wind farm and the existing wind farms. I note section 14.4.3 of the EIAR which deals with cumulative effects of shadow flicker which states that it would not be possible, even in the worst-case scenario, for these four receptors to experience a cumulative shadow flicker effect from the two wind farms at the same time or on the same day due to the position of the properties and the proposed/existing wind turbines relative to the position of the sun in the sky at any given time. During commissioning, the maximum daily limit of 30 minutes per day will not be exceeded. Subject to mitigation measures such as additional screening options and automatic turbine shutdown, the EIAR states that there will be no shadow flicker occurrence at any sensitive receptor in the vicinity of the site. Monitoring and logging complaints will be put in place. Any shadow flicker effects which may be experienced at identified receptors exclusively from the existing wind farms at Oweninny Phase 1 and Phase cannot be mitigated under the proposed development – this is a matter to be considered under the terms of the permission relating to Phase 1 and 2.

10.5.21. With respect to concerns raised regarding devaluation of property arising from the proposed development, I note the response to submissions wherein the applicant refers to UK studies which found that construction of wind farms at the sites examined has not had a detectable negative impact on house price growth within 5km radius of the windfarms (2014), and; that there is no evidence of a consistent

negative effect on house prices (2016). A third party counters this argument and references a 2014 study which states that houses within 1.2 miles of a windfarm can lose up to 13% of their value. Having regard to conflicting reported studies, the absence of any national evidence as to the effect of windfarms on property value and noting both the presence of the existing Oweninny wind farm (Phases 1 & 2) in the area and that there is a minimum separation distance of at least 1km from the nearest dwellings, I consider it reasonable to conclude that the proposed development is not likely to result in a significant impact on property values in the area.

10.5.22. With respect to health effects, a number of third-party submissions reference potential for health effects including sleep disturbance, dust and air quality impacts, shadow flicker arising from the proposed development. These matters are discussed under noise, air quality and shadow flicker above and I am satisfied having regard to my conclusions under the relevant environmental factors below that there are likely significant health effects arising in respect of the proposed development. I note that there is potential for the development to have a long-term positive effect on local amenities/tourism infrastructure as it is proposed to provide an amenity walkway through the site as part of the proposed development.

10.5.23. Having regard to my inspection of the subject site, its remote location in a flat landscape where there are existing wind turbines and subject to the implementation of all mitigation measures across the environmental topics with potential for adverse effects on population and human health, I am satisfied that the proposed development will not give rise to any significant direct, indirect or cumulative impacts on population, save for visual impact on certain eastern-most residential properties, or on human health during construction, operation or decommissioning.

## 10.6. Biodiversity

Biodiversity, other than avi-fauna is addressed in this section. Ornithology is addressed in section 10.7 of this Inspector's report.

### 10.6.1. Issues Raised

A number of biodiversity issues are raised by:

- the IFI regarding the aquatic environment, and impact on water quality in particular. This issue is dealt with in section 10.9 (Water) of this report;
- the Department of Housing, Local Government and Heritage (Development Application Unit) relating to the screening out of the Owenduff/Nephin Complex SPA from the NIS and the use of arbitrary thresholds in the AA screening process (dealt with in section 11.0 of this Inspector's report); concerns over the methodology to determine magnitude of impacts on bird species; and concerns of the collision risk model report.
- Third parties: windfarms are driving deer onto the road/property; concern for ecosystem impact; impact on birds of conservation species and bat population; peatland restoration would be more beneficial, noise impacts on wildlife.

10.6.2. **Context**

Chapter 7 of the EIAR deals with Flora and Fauna. Chapter 7 is supported by Appendix 7.1 Habitat Mapping, Appendix 7.2 Bat Survey Report, Appendix 7.3 Electronic Fishing Survey and Appendix 7.4 Biodiversity Enhancement Plan. This chapter should be read in conjunction with Chapter 8 Ornithology, Chapter 9 Soils and Geology, Chapter 10 Hydrogeology, Chapter 11 Hydrology and Water Quality, Chater 12 Air Quality & Climate, Chapter 13 Noise and Vibration, the Response to Submissions, the NIS, and the Appropriate Assessment Screening Report submitted with the application. Matters relating to the impact on Natura 2000 sites are dealt with in the attached AA (Section 11.0 of this Inspector's Report) and are not repeated here. Chapter 7 sets out the relevant legislation and guidance, describes the baseline receiving environment and it identifies the mitigation and monitoring measures that will be implemented to reduce the significance of the impacts and assesses residual impacts.

10.6.3. The assessment methodology includes consultation with relevant authorities, a survey of the site, including habitat mapping, bird, mammal, aquatic and Marsh Fritillary surveys, and a desk study of databases maintained by the NPWS and others.

10.6.4. The development site lies alongside and within a wider context of designated European and nationally important sites, Table 7.5 of the EIAR refers. The boundary of European sites overlaps with national sites and the EIAR identifies those sites which are likely to be within the zone of influence of the project, by virtue of proximity or connectivity (Table 7.5 of the EIAR refers).

10.6.5. Having regard to the desk and site surveys, key ecological receptors (KERs) are identified in Table 7-14. These include:

- Aquatic habitats and related species (e.g. depositing/lowland rivers, eroding/upland rivers, aquatic and fisheries species),
- Peatlands and associated habitat (e.g. lowland blanket bog, dystrophic lakes),
- Fauna – e.g. badger, otter and bats.

10.6.6. Limitations are not expressly considered in section Chapter 7 although I note that some sections of watercourses could not be accessed during the surveys.

10.6.7. The relevant aspects of the proposed development, in my opinion, are construction works e.g. site clearance, excavation, drainage installation, infrastructure installation, use of heavy machinery, concrete and fuel use, operational phase e.g. rotating blades and maintenance of infrastructure, and decommissioning.

10.6.8. **Baseline**

Habitat Survey

10.6.9. Habitats on site and along the grid connection route are indicated in Table 7.10 and Appendix 7.1. Within the wind farm site these comprise mostly cutover blanket bog which has been harvested. Also present is lowland blanket bog, dry heath and wet heath and patches of transition mires and quaking bog. Various lakes and ponds occur scattered across the proposed development site. In the western and central areas of the site there are a number of areas dominated by commercial conifer plantation on peat. Some areas of identified habitat correspond to the Annex I and Annex II habitats such as natural dystrophic lakes and ponds, oligotrophic to mesotrophic standing waters, Atlantic wet heaths, blanket bogs and calcareous springs.

10.6.10. Chapter 7 of the EIAR states that all of the turbine bases and hardstands are located in areas of ‘local importance (lower value)’ with the exception of Turbine 4 (T04) which is rated as ‘local importance (higher value)’ due in part to its proximity to blanket bog.

10.6.11. The internal roads, turning bays and amenity trackway comprising existing tracks and new surfaces and new tracks will be constructed on areas of cutover bog which show little sign of management and are sheep grazed. There will also be vegetation clearance in areas of wet grassland (GS4) and lowland blanket bog to facilitate internal roads. Two small areas of lowland blanket bog will be cleared to provide access to turbines 6 and 14.

10.6.12. The proposed access tracks will need to cross river habitats at five locations. There are existing crossings at four locations. A new bridge will be constructed on the Fiddaunfura river (also referred to as Kilfian South ED Stream) to access T16. Spawning habitat for salmon, trout and eel were identified in this watercourse and this eroding/upland river was assessed as being of ‘county importance’. The proposed roads and access track will also cross/ run alongside several drainage ditches.

10.6.13. A total of four proposed site compounds and a contractor’s storage area will be located across the proposed development site. The habitats recorded at these locations included buildings and artificial surfaces, cutover bog, wet heath, assessed as being of local importance, and of ‘local importance, both of higher and lower value.

10.6.14. The proposed substation site is largely located in an area of degraded lowland blanket bog and is assessed as being of ‘local importance (lower value)’.

10.6.15. The proposed borrow pits, covering and area of ca. 46.6ha (see Table 3.2 of the EIAR – although this conflicts with Section 7.7.2.1.5 of the EIAR which states that the two proposed borrow pits cover a total area of 41ha). Borrow pit A (ca. 43ha) located to the east of T6 is considered to be ‘local importance (lower value)’. Borrow pit B (ca. 3.3ha) is located proximate to T17 and is located within a habitat of dry silicious heath and the habitat condition is considered to be ‘moderate’.

10.6.16. The five peat deposition areas cover an area of ca. 29 ha (section 7.7.2.1.7 of the EIAR). These areas are mostly dominated by cutover bog which consists largely

of exposed peat with smaller pockets of dry siliceous heath, wet heath and drainage ditches and are assessed as being of 'local importance (lower value)' and 'local importance (higher value)'.

10.6.17. The proposed grid connection route is primarily located along existing internal windfarm roadways with the exception of some sections of the route which will be located over cutover bog ('local importance lower value)' and will include a river crossing point, the Oweninny River (County importance), via an existing bridge.

10.6.18. The invasive species, Rhododendron, was recorded at a number of locations at the proposed development site, including proximate to the substation site.

Bat Survey

10.6.19. Eight bat species were recorded within the development site: Soprano Pipistrelle, Common Pipistrelle, Leisler's Bat, Daubenton's Bat, Nathusius' Pipistrelle, Natterer's Bat, Whiskered Bat and Brown Long-eared Bat. Roosting was recorded in six buildings within the proposed development site, including a maternity roost of Natterer's bats (in a toilet block), this is stated to be a significant find as this is not a common bat species in west Mayo. It is stated that there will be no direct impact to this or any roost, though I note the maternity roost will be c.280m from the nearest turbine and adjoins borrow pit A. Another bat roost (night roost) is located in an agricultural barn, located adjacent to the proposed substation. According to the Bat Survey (Appendix 7.2 of the EIAR) four of the eight species are considered to be High Risk bat species in relation to wind turbines: Leisler's bat, Common Pipistrelle, Soprano Pipistrelle and Nathusius' Pipistrelle. The remaining four species are Low Risk: Natterer's bat, Daubenton's bat, Whiskered bat andBbrown long-eared bat.

Other non-avian fauna

10.6.20. Evidence of badger, fox, red deer, pine marten, Irish hare, common frog, common lizard and otter were recorded within the proposed development site. No evidence of significant populations of these species at more than a local level was recorded.

Aquatic Ecology

10.6.21. Eight electro-fishing survey locations were selected; two on-site, and the remainder down-stream. All the tributaries draining this area, even very minor ones

have populations of salmonids. They all ultimately feed important salmon angling rivers. In addition, Crayfish were found on two of the tributaries.

10.6.22. **Likely Significant Effects**

Likely significant effects of the development, as identified in the EIAR, are summarised below:

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|
| **Do nothing** | The site would continue to be managed as it is currently and KERs would likely continue to in accordance with identified trends and status. |
| **Construction** | Habitat loss ca. 93ha. See Table 7-15, summary of habitat loss, resulting in direct, negative at a local scale, with both permanent and short-term impact.<br><br>Habitat degradation – there is potential for activities to result in the runoff of construction pollution and/or sediment into nearby waterbodies which could result in the deterioration in water quality. There is potential for significant indirect temporary negative effect on watercourses including WFD waterbodies and aquatic life.<br><br>Spread of invasive species – rhododendron, could result in long-term, significant, negative effect on habitats.<br><br>Dust generation – could inhibit plant growth. Impact is likely to be short-term, slight, negative and local.<br><br>Disturbance/Displacement of otter – there is potential that the construction works may result in the disturbance of otter, and could result in short-term, slight, negative effects. No otter holts or resting sites or badger setts were identified within the area to be disturbed, during the surveys, |
| **Operation** | Collision risk: there is potential for death by collision or disturbance on the local bat population and is considered |

| | |
|---|---|
| | to be long-term moderate negative direct effect on local bat population.<br><br>Aquatic fauna: leaks and spills of hydrocarbons/oils etc may result in indirect localised negative effects. |
| **Decommissioning** | Likely to be some reinstatement of habitats which were lost during the construction phase - positive, permanent and local effect.<br><br>Disturbance of fauna – likely to be short-term, significant and negative.<br><br>Water quality & aquatic fauna – leaks and spills of hydrocarbons/oils etc may result in indirect localised short-term moderate negative effects. |
| **Cumulative** | Relevant applications / development proposals are considered in the EIAR, there is no potential for cumulative negative effects on biodiversity with the proposed development. |

10.6.23. **Mitigation Measures**

10.6.24. Mitigation measures are set out in section 7.10 of the EIAR and include those listed in table below.

| **Effect** | **Mitigation Measure** |
|---|---|
| **General** | Measures will be monitored through implementation of the CEMP (see Appendix 3.1 of the EIAR) and the appointment of an Ecological Clerk of Works.<br><br>Implementation of the Biodiversity Enhancement Plan (EIAR Appendix 7.4) |
| **Habitat loss/ degradation** | The proposed development footprint has been primarily restricted to cutover bog habitats of low ecological value. |

| | |
|---|---|
| | Vegetation removal will be kept to a minimum and reinstated where possible.<br><br>All disturbed ground, with the exception of the turbines, hardstanding and substation locations, will be fully reinstated following completion of the works. |
| **Negative water quality impacts & aquatic fauna** | Turbines have been located in excess of 50m from all watercourses.<br><br>No in-stream works are proposed as part of the proposed works; river crossing will be via clear-span bridge.<br><br>Smaller drainage channels will be via culverts of adequate size to be placed during periods of dry weather.<br><br>Mitigation measures set out in in Chapter 11 (Hydrology) also relevant.<br><br>Pollution control measures and sediment control issues as detailed in EIAR section 7.10.1.2.2 Protection of Watercourses and in section 7.10.2.1 Pollution Control during Site Maintenance. |
| **Spread of invasive plant species** | Cleaning of machinery and equipment before and after use. No removed material or run-off will be allowed to enter surface water.<br><br>Further measures set out in EIAR section 7.10.1.2.3 - Management of Invasive Plant Species. |
| **Dust Management** | Dust mitigation measures are set out in EIAR section 7.10.1.2.4 and in greater detail in the Dust Management Plan, included in EIAR Appendix 12.2 of Chapter 12 – Air Quality and Climate. |
| **Disturbance of fauna (otter, badger, other)** | Pre-construction otter and badger surveys will be conducted within the proposed development site to identify the presence of any new holts, setts or activity. |

| | |
|---|---|
| | Consultation with the NPWS if a new holt is identified in the ZOI.<br><br>Sensitive or no lighting on watercourses or lakes or cowled away from potential foraging sites.<br><br>Open excavations will be backfilled as soon as possible or deep excavations to contain mammal ramps.<br><br>Pre-construction frog spawn survey and consultation with NPWS, as necessary. |
| **Disturbance / destruction of bats** | A summary of bat mitigation measures during construction is set out in EIAR Table 7-16 and include minimum buffer zone around wind turbine - e.g. tall vegetation clearance to reduce foraging and commuting bats in proximity to turbines; complete vegetation clearance 6 months prior to turbine installation to reduce insect loading which is an attractor for bats. The complete suite of measures are set out in section 6.2 of the Bat Survey Report, Appendix 7.2 of the EIAR.<br><br>Of particular note: the construction of an alternative roost is required to accommodate the Natterers maternity roost which is recorded in the toilet block adjacent to Turbine 4 and directly adjacent to borrow pit A. An exclusion zone of 50m is also required around the roost. A derogation license may be required if direct impacts are likely.<br><br>A summary of bat mitigation measures during the operational phase is set out in EIAR section 7.10.2.2 & Table 7-17 of the EIAR and in more detail in the Bat Survey Report and include feathering of blades, increase cut-in speeds prior to and after sunset during Spring-Autumn months. Also, tall vegetation maintenance, bat activity surveillance, carcass search and directional sensor lighting at the substation site. |

10.6.25. **Residual Effects**

All negative effects are predicted to be not significant with the implementation of mitigation measures. Due to the habitat creation / enhancement and bat buffer management areas, the residual effects on many terrestrial habitat and species groups will be positive at the local scale.

10.6.26. **Assessment – Direct and Indirect Effects: Biodiversity**

10.6.27. Parties to the application raise concerns regarding impact on water quality and aquatic fauna, displacement of deer onto the road/property, ecosystem impact; impact on bat population; peatland restoration and noise impacts on wildlife.

10.6.28. With regard to the impact on the aquatic environment and aquatic life, the rivers and watercourses within and immediately adjacent to the proposed development site were found to provide important spawning and nursery habitat for crayfish, lamprey and salmon. The release of construction pollution and/or sediment into the watercourses has the potential to degrade water quality indirectly impacting these aquatic species and their habitats. Mitigation measures including those to control pollution/sedimentation and mitigation to protect watercourses are detailed in EIAR sections 7.10.1.2.2. and 7.10.1.2.3. Increased monitoring locations are sought by the IFI and additional locations for monitoring have been proposed by the applicant in the additional information. I am satisfied having regard to the assessment in section 10.9 of this Inspector's Report which considers water quality and subject to the mitigation measures to protect water quality that there will be no significant effect on water quality and aquatic fauna arising from the proposed development.

10.6.29. With regard to impact on bats, six active bat roosts sites were identified within the proposed development site. A Natterers maternity roost was located to the north of the site, in an old disused toilet block, and the remaining roosts are located to the south of the proposed development site. None of the roost buildings will be demolished as part of construction works and the proposed works will not result in the loss of any bat roosts. Only small areas of suitable foraging habitat is due to be removed as part of construction works, but no forestry will be removed. It is proposed to provide alternative bat roosting (in the form of a purpose-built bat house)

to reduce risk to the local Natterer's bat population and a full specification of the bat house is set out in the EIAR Appendix 7.2 – Bat Survey Results Report. A summary of bat mitigation measures during the operational phase is set out section 7.10.2.2 & Table 7-17 of the EIAR and in more detail in the Bat Survey Report and include feathering of blades, increase cut-in speeds prior to and after sunset during Spring-Autumn months. Also, tall vegetation maintenance, bat activity surveillance, carcass search and directional sensor lighting at the substation site. I am satisfied that suitable and adequate mitigation measures are in place to ensure that there will be no adverse effects on bat populations as a consequence of the proposed development.

10.6.30. With regard to other mammals, the surveys found no evidence of otter holts or badger setts on the site, though there was some evidence that they frequent the area. Other mammals, such as red deer, hare and pine martin are present on site. Construction works at the proposed development site has the potential to result in short-term, negative and indirect effects on the habitat which supports these mammals and the availability of prey items. Following the implementation of the proposed mitigation measures which include targeted pre-construction surveys and the appointment of an ecological clerk of works, I am satisfied that the proposed development will not have a significant effect on mammals.

10.6.31. With regard to habitats, it is stated in the EIAR that the proposed development footprint has been designed as far as possible, to avoid known sensitive ecological receptors and has been primarily restricted to cutover bog habitats of low ecological value resulting in the loss of c. 75ha of cutover bog – from a total development site area of c. 93ha (see Table 7-15 of the EIAR). This habitat will be reinstated where possible minimising the overall loss of permanent habitat loss and I note that where higher value habitat will be lost, a like-for-like habitat will be planted and/or resown elsewhere on existing lower value habitats within the site. I also note that a Biodiversity Enhancement Plan has been prepared and is included in EIAR Appendix 7.4 which includes rehabilitation measures of remnant blanket bog, among others, within the site boundary.

10.6.32. The EIAR considers the likely effects of the development in conjunction with relevant projects in the area that could result in cumulative impacts on biodiversity. No significant residual pollution, disturbance, displacement, collision or habitat loss

effects were reported for any receptors within any of the nearby wind farm/other assessments reviewed. Taking into consideration other plans or projects no residual cumulative effects are anticipated.

10.6.33. Having regard to the foregoing, in particular the detailed survey work carried out in respect of the subject site, the habitats identified on site to be affected by the development (excluding Natura 2000 sites which is assessed in Section 11.0 of this report), habitats on site and downstream, the species of flora and fauna (excluding avi-fauna, which is considered in section 10.7 of this Inspector's Report) evident on the site and how these species utilise the site and would interact with the proposed development, I am satisfied that the development, subject to the implementation of the full suite of mitigation and monitoring measures, would not give rise to significant direct, indirect or cumulative effects on biodiversity.

## 10.7. Ornithology

### 10.7.1. Issues Raised

10.7.2. The Development Applications Unit have submitted two observations on behalf of the Department of Housing, Local Government and Heritage (DHLGH). The first submission raised the following related to the appropriate assessment process:

- Considered that effects on the Owenduff/Nephin Complex SPA are uncertain and it should be screened in;
- Impacts on Golden plover;
- Impacts on Merlin;
- Queries the methodology used to determine the significance of collision mortality including the use of arbitrary thresholds; and,
- Discrepancies in relation to collision risk calculations.

10.7.3. The second Department submission, following a request for additional information and the submission of a revised AA screening Report and NIS, raised the following related to the appropriate assessment process:

- the applicant's response does not adequately address concerns relating to the appropriate reference population for determining the significance of collision mortality impacts.
- Impacts on Golden plover.

10.7.4. Following the concerns raised by the Department in particular relating to impact on Merlin, Golden plover and uncertainty of effect on Owenduff/Nephin Complex SPA, and having regard to the methodological queries raised regarding significance of collision risk thresholds, an external ecologist/consultant, Blackstaff Ecology Ltd, was retained by An Bord Pleanála to critically review Chapter 8 – Ornithology – of the Environmental Impact Assessment Report (EIAR), as amended, the Natura Impact Statement, as amended and related ornithological matters. A report from Blackstaff Ecology Ltd, herein referred to the Blackstaff Ecology Report, is appended to this Inspector's report, (Appendix 2). The external report was prepared by Dr Brian Sutton BSc PhD CEnv MCIEEM and Cormac Loughran CEnv MCIEEM MSc, Director of Blackstaff Ecology Ltd. Following the Blackstaff Ecology Report, a Technical Note, dated 26.11.24 (Appendix 3) was prepared by the Inspectorate Ecologist, Dr. Maeve Flynn, MCIEEM, to address issues raised by the Department and in the Blackstaff Ecology Report. The contents of these reports inform this assessment.

10.7.5. **Context**

10.7.6. Chapter 8 of the EIAR deals with Ornithology. Chapter 8 is supported by Appendix 8.1 Avi-Fauna Data, Appendix 8.2 Collision Risk Modelling (CRM) Report, Appendix 8.3 Red Grouse Surveys, Appendix 8.4 Viewshed Maps and Appendix 8.5 Bird Monitoring Programme. In response to a request for further information, an EIAR Addendum was submitted which included an updated section of Chapter 8 of the EIAR dealing with Ornithology and Appendix C, an updated CRM.

10.7.7. This chapter should be read in conjunction with Chapter 6 Land and Soils, Chapter 7 Water, Chapter 9 Air, the NIS and Appropriate Assessment Screening Report submitted with the application and the Appropriate Assessment (AA) undertaken as part of this Inspector's Report (Section 11.0).

10.7.8. The development site lies alongside and within a wider context of designated European and nationally important sites. The EIAR identifies those sites which are likely to be within the zone of influence of the project, by virtue of proximity or connectivity (Table 8-8 Designated Sites , including other national sites). The nearest SPA's include Owenduff/Nephin Complex SPA (004098), c. 3.km to the west; Lough Conn and Lough Cullin SPA (004228), c. 11km to the southwest; Killala Bay/Moy Estuary SPA (004036), c. 14km to the northeast; Carrowmore Lake SPA (004052), c. 14km to the west; Blacksod Bay/Broad Haven SPA (004037), c. 17km to the west.

10.7.9. Matters relating to the impact on Natura 2000 sites are dealt with in Section 11.0 and are not repeated here. The AA of this Inspector's Report concludes that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European sites listed above or any other European site, in view of the site's Conservation Objectives.

10.7.10. It should be noted in respect of the Owenduff/Nephin Complex SPA that the species of special conservation interest are Merlin and Golden plover. Greenland White-fronted Goose and Peregrine are listed as reasons for designation of the SPA, along with Merlin and Golden plover, in the NPWS Conservation Plan for Nephin Complex SPA (NPWS 2005) and the Natura 2000 - Standard Data Form. The Conservation Objectives (NPWS, October 2022) and associated relevant statutory instrument (S.I. No. 715/2005) designated the SPA list just Merlin and Golden plover as qualifying interests. For this reason, Greenland White-fronted Goose and Peregrine are not considered further as part of the AA for the Owenduff/Nephin Complex SPA. It should be noted that Greenland White-fronted Goose was not recorded in the bird surveys which were carried out during 2019-2022 and are thus not the subject of detailed assessment in the EIAR. Peregrine was subject to impact assessment and is considered below, together with other species.

10.7.11. **Baseline**

10.7.12. The study area for the Ornithological Assessment comprised the proposed wind farm site and the wider surrounding hinterland up to 2km. The Zone of Influence (ZoI) over which significant impacts may occur will differ for different key avian receptors (KARs), depending on the pathway. Significant impacts are deemed

to be those impacts resulting in a likely change in conservation status of a KAR. According to the NRA Guidelines (Guidelines for Assessment of Ecological Impacts of National Road Schemes, 2009), KARs are therefore defined as features of Local (Higher Value), County, National, or International Importance.

10.7.13. A list of target species recorded during all ornithology surveys within the ZoI of the proposed development are listed in Table 8-10 of the EIAR and are discussed individually in the EIAR. Key target species include Hen Harrier, Kestrel, Peregrine Falcon, Merlin, Golden plover, Snipe, Red Grouse and Whooper Swan. These species are Annex I, or Birds of Conservation Concern Ireland (BoCCI) Red-listed species and/or occur within nearby SPAs, with populations found to occur within the ZoI of the proposed development. These species are the focus of the breeding and winter bird surveys at the site. Secondary Species, species of regional conservation concern or BoCCI amber-listed species were also considered and included other raptor species, waders, gulls and waterbirds. In general, it is considered that passerines are little impacted by wind farms, as per SNH (2017), however, passerines species listed as red under the BoCCI such as meadow pipit, have been considered in the EIAR. Other avian species were recorded within the proposed development site but were not included within the evaluation due to their Green listed conservation status (Table 8-11 of the EIAR refers).

10.7.14. Field surveys were undertaken by experienced ornithologists between the period from April 2019 to September 2022 and included Vantage Point Survey, the primary purpose of which is to inform a Collision Risk Model (CRM); transect walkover surveys to establish the distribution and abundance of birds within the study area; breeding raptor survey, with particular reference to breeding hen harrier, Merlin and Peregrine and Hen Harrier roost surveys. Other surveys include breeding Woodcock survey, Red Grouse tape lure survey and lowland breeding Waders and Gulls surveys.

10.7.15. Initially, the CRM was only prepared for those species that were observed flying at potential collision height (PCH) and those species with sufficient amounts of flight activity (the threshold used was of three flights, or at least 10 individuals, recorded within the CRZ at PCH within either season, over the course of all survey years). Following a request for further information in view of the concerns raised by the Department and subsequently, the Board, the CRM was carried out on additional

species to include all species at potential collision risk, see Appendix 8.2 of the EIAR and Appendix C of the EIAR Addendum.

10.7.16. The independent Blackstaff Ecology Report states that the field surveys carried out for the EIAR were comprehensive and covered all the species and species groups with the potential for effects arising from the scheme and that survey methods were tailored for each group and followed published guidelines. Dr. Flynn, in her Technical Note, states that "comprehensive bird surveys were undertaken to inform the ornithological impact assessment."

10.7.17. **Limitations**

10.7.18. The limitations section of the EIAR (8.6.5.9) does not raise any limitation issues, however I note Section 8.6.5.1 states that there are assumptions behind the models that could affect the reliability of the predicted collision risk. For example, if there is significant variation in flight activity patterns with time of day, the sampling approach may produce biased estimates and wider confidence intervals.

10.7.19. The Blackstaff Ecology Report references limitations in relation to the application documentation prior to submission for the additional information and relating to uncertainty over the status of Merlin, by restricting the species considered for CRM and by ignoring the potential effects on the designation features of the Owenduff/Nephin Complex SPA. These limitations can now be discounted having regard to the expanded CRM and the screening in of Owenduff/Nephin Complex SPA.

10.7.20. **Likely Significant Effects**

Likely significant effects of the development, as identified in the EIAR, are summarised in the table below:

| **Project Phase** | **Potential Direct, Indirect and Cumulative Effects** |
|---|---|
| **Do nothing** | The existing environment would continue to be managed as it is currently and KARs would likely remain as per baseline. |

| | |
|---|---|
| **Construction** | Habitat loss and fragmentation - direct habitat loss associated with construction works resulting in permanent impacts. The EIAR found very low or low significance of effect with permanent slight or moderate negative effects on Mute swan, Whooper Swan, Mallard, Teal, Tufted duck, Cormorant, Grey Heron, Red Grouse, Hen harrier, Kestrel, Peregrine, Sparrowhawk, Merlin, Dunlin, Redshank, Greenshank, Golden plover, Ringer plover, Common sandpiper, Snipe, Lesser black-backed gull, Common gull, Great Black-backed gull.<br><br>Disturbance displacement (indirect impact) - caused by the activity of machinery and staff during the construction phase. The EIAR found very low or low significance of effect with short-term slight or moderate negative effects on Mute swan, Whooper Swan, Mallard, Teal, Tufted duck, Cormorant, Grey Heron, Red Grouse, Hen harrier, Kestrel, Peregrine, Sparrowhawk, Merlin, Dunlin, Redshank, Greenshank, Golden plover, Ringer plover, Common sandpiper, Snipe, Lesser black-backed gull, Common gull, Great Black-backed gull. |
| **Operation** | Collision Risk (long-term, direct effect) – there is potential for death by collision or disturbance on the bird population. As detailed above, the CRM was undertaken for all species at potential collision risk i.e. Kestrel, Golden plover, Whooper Swan, Lesser Black-backed Gull, Great Black-backed Gull, Buzzard, Cormorant, Common gull, Golden eagle, Grey heron, Merlin, Sparrowhawk, Peregrine falcon, Ringed plover, and Teal. The modelled species have been found to have a negligible and not significant collision risk. Impact on breeding Golden plover is considered in detail below. |

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| | Disturbance Displacement and Barrier Effect - There is potential for disturbance displacement effects associated with avoidance of operating turbines. Disturbance can result in a significant impact if it reduces the availability of resources for KAR. The EIAR found very low or low significance of effect with long-term slight negative effects on Mute swan, Mallard, Teal, Tufted duck, Cormorant, Grey Heron, Red Grouse, Kestrel, Peregrine, Sparrowhawk, Merlin, Dunlin, Redshank, Greenshank, Ringer plover, Common sandpiper, Snipe, Lesser black-backed gull, Common gull, Great Black-backed gull.<br><br>The EIAR found medium significance of effect with long term, moderate negative effects on Whooper Swan, Hen Harrier, Golden plover. |
| **Decommissioning** | Decommissioning phase effects will be similar to the construction phase but the potential for impacts considerably less. Likely to be some reinstatement of habitats which were lost during the construction phase. Short-term and local effects. |
| **Cumulative** | Relevant applications / development proposals are considered in the EIAR, section 8.9. Relevant applications are listed in Table 8-22 of the EIAR. The EIAR concluded No significant residual pollution, disturbance, displacement, collision or habitat loss effects were reported for any receptors within any of the nearby wind farm/other assessment reviewed; taking into consideration other plans or projects no residual cumulative effects are anticipated. |

10.7.21. **Mitigation Measures**

Mitigation measures are set out in section 8.11 of the EIAR and include those listed below.

| Effect | Mitigation Measure |
|---|---|
| **General - construction phase** | A CEMP has been developed to provide a framework for how significant effects on the environment will be avoided during the construction phase. A suitably qualified Ecological Clerk of Works (ECoW) will be appointed by the Contractor and will be required full time on site during the construction works.<br><br>On-site and 500m radius bird surveying by a qualified ornithologist between April and July, if required.<br><br>Measures will be monitored through implementation of the CEMP (see Appendix 3.1 of the EIAR) and the appointment of Ecological Clerk of Works. |
| **Habitat loss and fragmentation** | A suitably qualified ornithologist/ecologist will undertake a pre-construction survey of the vegetation proposed to be removed to establish the presence of breeding birds and nests. Where an active nest is found, the nest will be clearly marked and avoided if possible. Where avoidance of the nest is not possible, the nest will only be removed once the chicks have fledged or where nesting has failed. |
| **Disturbance displacement** | Any removal of scrub vegetation will be undertaken outside the bird breeding season. Where this is not possible, these works/activities will not take place before a confirmatory survey of the affected area. |
| **Collision Risk** | Based on the extensive bird survey findings and the nature of the proposed development, no operational phase impacts requiring mitigation were identified. |

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| **Disturbance Displacement and Barrier Effect** | As above, in addition, the proposed turbines are to be located at distances greater than 400 from their nearest neighbour to facilitate the free movement of birds and thereby avoid a barrier effect. |
| **Post construction** | A bird monitoring programme will be undertaken at the proposed development site, see Appendix 8.5 of the EIAR, Bird Monitoring Programme, and results of the monitoring will be submitted to the competent authority and NPWS. Section 8.12 of the EIAR refers. |

10.7.22. **Residual Effects**

10.7.23. The EIAR states that taking into account the effect, significance levels identified and the recommended mitigation measures, significant residual effects on KARs with regards to direct habitat loss, displacement or collision risk are not anticipated. It also states that the proposed avoidance and mitigation measures “will ensure that all avifauna species are protected." In respect of this, I note the Blackstaff Ecology Report which states that “there will clearly be some adverse effects on bird species as a result of displacement, and, potentially, collision mortality. However, it is likely that the conclusion that significant residual effects on KARs with regards to direct habitat loss, displacement or collision risk are not anticipated" is generally appropriate.

10.7.24. **Assessment – Direct and Indirect Effects: Ornithology**

10.7.25. Along with concern that the Owenduff/Nephin Complex SPA was not screened in for AA in the initial NIS submitted with the application, the Department of Housing, Local Government and Heritage raise concerns regarding:

- discrepancy in figures referenced in the NIS and EIAR regarding collision rate for Golden plover;
- Methodology used to determine magnitude of impact; and,
- Use of arbitrary thresholds.

Matters relating to AA are considered in Section 11.0 of this Inspector's Report, however, for the purposes of clarity it should be noted that the discrepancy of the collision risk figures relating to Golden plover were corrected in the additional information submitted by the applicant. The two latter points relating to methodology and thresholds are considered below.

Methodology used to determine magnitude of impact:

10.7.26. A threshold level of a 1% increase in annual mortality as a consequence of collision risk has been suggested by the applicant to determine whether the impact is non-negligible. This is an accepted threshold.

10.7.27. Referring to the Golden plover, the Department raise concern that use of the national population as a reference for analysis is flawed and refers instead to an analysis of habitat suitability, and the potential density of species in such habitats in the wider area of the application in order to determine the baseline population from which to assess the magnitude of any impacts. The request for further information advised that the use of national population figures to determine magnitude of effects at a local level is not appropriate because if you use numbers based on a large area it can potentially minimises the impact at a local level.

10.7.28. The EIAR notes that the Golden plover has a short breeding period (April to July) and that during the Vantage Point survey because no breeding or breeding activity was recorded in 2020, the survey effort for the 2021 and 2022 breeding season was extended between the months of April to September. The applicant states the only records observed during the breeding period related to non-breeding birds recorded in the month of September, noting that only a small number of the sightings occurred within the late breeding season.

10.7.29. The applicant's additional information includes collision risk modelling for wintering Golden plover at a national and County Mayo wide level. The national natural mortality rate was not projected to increase above 1% (Table 8-16 of further information), while the projected effect for the Mayo population was estimated at 1.46% of the County mortality rate which is above the 1% limit threshold. The applicant considers that the estimated Golden plover population for Mayo County is likely to be an underestimation; additionally, data available from post-construction

monitoring indicates that a much higher avoidance rate (99.8%) could be applied to wintering Golden plover, which if applied, would indicate <1% for both the national and county population of wintering Golden plover.

10.7.30. A further submission from the Department (June 2024) considers that the applicant's response does not adequately address the Department's previous comments in relation to the appropriate reference population for determining the significance of collision mortality impacts, particularly referencing Golden plover noting that the applicant uses wintering county populations of Golden plover only when determining the significance of the potential collision mortality impacts on this species which it states is problematic for two separate and related reasons: (i) no differentiation is made between potential collision mortality impacts on the breeding and wintering populations, and (ii) no rationale is provided for using the county boundary, which is an administrative boundary, as being synonymous with an area of suitable habitat. The Department note that the population of breeding Golden plover is very different in size, and distribution, from the population of wintering Golden plover, a small loss of birds per year during the breeding season, and contextualised in the appropriate biogeographic area, may be more significant than a greater loss of birds during the wintering season and could result in significant adverse effects to a breeding population in the uplands of North West Mayo that is already in decline.

10.7.31. The report of the Inspectorate Ecologist, appended as Appendix 3, states that the updated CRM breaks the risk assessment into data collected in the breeding season and non-breeding season. The report continues, for Golden plover, the only birds recorded during the 'breeding season' were in mid-late September (which is more aligned to the autumn migration period). The model was based on 3 flights and 31 individuals resulting in an estimated collision risk of 0.27 birds/ year at a 98% avoidance rate and notes the CRM report references other studies which utilise a higher avoidance rate of 99% for Golden plover which lowers the risk to 0.14 birds/year.

10.7.32. The Inspectorate Ecologist questions why the applicant separated out these September records in the first instance as they go on to discount them forming part of the breeding population. The Project Ecologist states the inclusion of a flock of 22 birds during this period (mid-late Sept) is indicative of autumn migration and

therefore she considers the CRM estimate for this particular breeding season definition to be unreliable and an overestimate.

10.7.33. The Inspectorate Ecologist notes that the applicant combines all Golden plover data for an overall collision risk estimated at 7.77 birds/ year, equating to 169.25 birds over a 25year period. She continues: this potential impact is contextualized in terms of the national wintering population and an estimate of the County Mayo wintering population based on data from the Irish Wetland Bird Survey (a likely underestimate as the survey is of wetlands only and doesn't take account of terrestrial wintering birds). The increase in annual mortality due to collisions is estimated as negligible and not significant at a county and national level (see Table 8-16 of Further information).

10.7.34. The Inspectorate Ecologist notes that the DHLGH is critical of the approach taken in terms of possible impacts on the breeding population for the SPA and in a regional and national context. However, she states the survey data points to a low probability that dispersing birds post breeding form a significant cohort of the birds recorded in September. She notes that Blackstaff Ecology, in their independent review of the ornithological impact assessment (appended as Appendix 2), largely endorsed the ornithological assessment prepared by Tobin Ecologists on behalf of the applicant. She noted that the independent examination could not definitively rule out that birds recorded in September were associated with the SPA population but that noted they considered that a number of other factors reduced the likelihood of significant effects and adverse effects on the SPA including the distance from the SPA which is beyond the core range for the species, preferential foraging close to nest sites, post breeding dispersal would be to higher quality foraging habitats which are limited at the development site.

10.7.35. To conclude, the Inspectorate Ecologist considers that the applicant has addressed the issue regarding context of population effects in a manner that is acceptable for the overall assessment.

10.7.36. With reference to the use of Natural Heritage Zones quoted by DHLGH and used in Scotland to define biogeographical units, the Inspectorate Ecologist states that it is not an approach that has been applied in an Irish context that she is aware

of, and that such an approach would need careful consideration in the definitions of the areas to be included.

Use of arbitrary thresholds

10.7.37. The Department raised concerns that the threshold for the CRM was of three flights or at least 10 individuals recorded within the collision risk zone at potential collision height; that no reference is provided to support this approach, specifically referring to Merlin, qualifying interest of the Owenduff/Nephin Complex SPA which was excluded from the CRM.

10.7.38. The additional information submitted by the applicant notes the CRM was revised to include species recorded, including Merlin, within the collision risk zone at potential collision height. It found that collision mortality will be less than one for all the modelled species over the 30-year life span of the proposed development resulting in a negligible collision risk.

10.7.39. The Blackstaff Ecology Report notes the concern over thresholds for inclusion in CRM are addressed and collision risk for all target and secondary species is calculated and that the calculated risk for these species is within expected limits.

Impact Assessment

10.7.40. Having regard to the contents of the independent ornithologist report (Blackstaff Ecology) and the report of the Inspectorate Ecologist, I am satisfied that comprehensive bird surveys were undertaken to inform the ornithological impact assessment.

10.7.41. During construction, the proposed development will reduce the availability of local habitat for birds. Although effects would be permanent, it was found that no significant effects are likely as a result of habitat loss and fragmentation.

10.7.42. Potential disturbance displacement effects may also result during the construction phase. These effects will vary with species, habitat, breeding status, range and with the duration of the construction phase. Effects are considered to be short-term and negative but not significant.

10.7.43. I note the Blackstaff Ecology Report which states that potential effects on target bird species arising from the construction phase of the scheme are listed, described and assessed for their significance. Effects arising from habitat loss and fragmentation and from displacement arising from disturbance are assessed and appropriately evaluated for their significance.

10.7.44. During operation, effects on key aviation receptors may arise from collision risk, disturbance displacement and barrier effect. The Blackstaff Ecology Report notes that potential effects on target bird species arising during the operational phase of the scheme are assessed. Factors affecting collision risk are described and risk for each species is described based on CRM methodology. Following the submission of additional information by the applicant, the Blackstaff Ecology Report states the concern over thresholds for inclusion in CRM are addressed and collision risk for all target and secondary species is calculated. The calculated risk for these species is within expected limits.

10.7.45. Potential effects on target bird species arising from the operational phase of the scheme are listed, described and assessed for their significance. No significant effects on target species arise. I note that the proposed turbines are to be located at distances greater than 400 from their nearest neighbour to assist the free movement of birds and thereby avoid a barrier effect.

10.7.46. With respect to cumulative effects, the EIAR concludes that taking into consideration other plans or projects, which included Oweninny windfarm phase 1 and 2, Sheskin windfarms and Glencora windfarm, no residual cumulative effects are anticipated. I note the comments in the Blackstaff Ecology Report which states that this section does not consider in any detail the potential for cumulative effects on bird species, referencing proximity of a number of windfarms to each other may occupy significant areas of habitat that are capable of supporting a species of conservation concern, there may be significant impacts at a local population level, referencing impact on breeding snipe and noting that the species declined by 78% between 1980 and 2018.

10.7.47. Snipe (identified as a Key Avia receptor; Red List) were regularly recorded during surveys during winter and breeding seasons and is assumed as a probable breeder at a number of locations within the proposed development site. The EIAR

states that given the survey effort from 2019 to 2022 the number of breeding territories was found to be low. It is not identified as a species at risk of collision but was assessed for disturbance/ displacement. The EIAR assumes that some temporary displacement may occur during construction works but states that given the extent of suitable habitat in the wider area (e.g. cutover bog/ heath/ wet grassland); significant displacement during the construction phase is not anticipated. During operation, the EIAR found (Table 8-21) that given the low numbers recorded per observation (1 - 5 individuals), the availability of alternative habitat nearby and the absence of regular flight paths across the site, effects associated with disturbance displacement and barrier effect are considered to be long-term, slight negative effect. In light of this, I am satisfied that no significant cumulative effects arise in respect of Snipe.

10.7.48. **Conclusion**

10.7.49. As well as the EIAR and associated planning application documents, my assessment is informed by the independent report from Blackstaff Ecology Ltd and the Technical Note prepared by the Inspectorate Ecologist, Appendices 2 and 3 respectively. Subject to implementation of the proposed mitigation measures, I accept the EIAR findings that there will be a negative but not significant impact on key aviation receptors arising from habitat loss and fragmentation, disturbance displacement, collision risk and barrier effect.

10.7.50. I note the Bird Monitoring Programme, Appendix 8.5 of the EIAR, and I have set out a specific condition relating to bird monitoring for the Board's consideration to ensure appropriate monitoring of potential impact.

10.7.51. I have considered all of the written submissions made in relation to ornithology, the relevant contents of the application including the EIAR and the expert reports commissioned on behalf of the Board. I am satisfied that the potential for significant adverse impacts on ornithology 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 proposal would not have unacceptable direct, indirect or cumulative impacts on air and climate

**Land, Soil, Water, Air and Climate**

## 10.8. Soils & Geology

### 10.8.1. Issues Raised

10.8.2. Mayo County Council's Chief Executive Report acknowledges that while the bog has been rehabilitated to some extent since peat production ceased, the area remains degraded and notes that the use of the land as a windfarm has been established.

10.8.3. The IFI request no *extraction* from borrow pits occurs below the water table to reduce the volume of water required to be treated for silt and to reduce the potential for siltation of waters downstream.

10.8.4. Submissions by members of the public raise concerns including that the area is overdeveloped with wind turbines, that the area is boggy and references evidence in favour of peatland restoration as a benefit for climate and biodiversity, questions if it would be more beneficial to serve lands as wetlands.

### 10.8.5. Context

10.8.6. Chapter 9 of the EIAR identified, describes and assesses the impact of the proposed development in the context of Soils & Geology, Geotechnics & Ground Stability. The Technical Appendices contain geology maps (Appendix 9.1), Ground Investigation Report (Appendix 9.2), Peat Management Plan (Appendix 9.3), Peat Stability Risk Assessment (Appendix 9.4) and a Site Investigation Report (Appendix 9.5).

10.8.7. The assessment methodology includes a desk study, site walkover, an intrusive investigation, an evaluation of potential effects, an evaluation of the significance of the effects, and an identification of measures to avoid and mitigate effects. The assessment followed a number of Irish and UK Guidelines e.g. EPA document 'Guidelines on Information to be contained in Environmental Impact Statements' (2022) and Peat Landslide Hazard and Risk Assessments, Best Practice Guide for Proposed Electricity Generation Developments - Second Edition (Natural Scotland Scottish Executive, 2017).

10.8.8. Limitations are not expressly considered in the EIAR. I am satisfied however that there are no limitations in respect of the assessment of Soils & Geology, Geotechnics & Ground Stability.

10.8.9. The proposed development will involve the removal of peat soil and subsoil to facilitate the development of access tracks, turbine foundations, crane hard standings, a substation and site compounds. The removal of bedrock is deemed to be unlikely. Crushed rock to facilitate foundation structures will be sourced from local authorised quarries. Overburden and spoil will be utilised for reinstatement of excavated areas and for landscaping purposes. Five peat deposition areas are identified comprising cutover peat areas and are generally shallow or absent of peat.

10.8.10. The proposed trench to lay the proposed underground electricity line (grid connection) will be typically 0.6m wide and 1.2m deep. Before the construction commences, contractors will carry out detailed site investigations along the proposed route in advance of the approved designs being finalised for the UGC trenching and ducting civil works.

10.8.11. Two areas are identified for borrow pits. Area 1 comprises an area of 43ha, overlain by 0.5m peat with an area of esker sand and gravels to the south and is outside the zone of contribution for the Bellacorick Iron Flush. An assumption is made that 10ha of Area 1 will be used for 'optimum extraction' (see Table 9.11 of the EIAR). Potential dewatering options initially included dewatering or dredging. Following concerns raised by the IFI in its submission, the applicant has clarified that the extraction technique used will be above the water table i.e. dry extraction. It is not intended that the borrow pit be fully reinstated, although it is expected that the borrow pit may be partially reinstated using suitable excess materials arising from the site works. Area 2 comprises a sand hill and measures 3.3ha; no dewatering is required.

10.8.12. Works include:

- Construction of 28km of access tracks (permanent and temporary, founded or floating), 15.6km of which are existing to the wind turbines, construction compound, met mast and substation. Where peat is deeper than 1m, floating roads will be used;

- Construction of temporary compounds including hard stands, construction material storage areas and site offices;
- Management of excavated materials;
- Excavation for turbine foundations, hardstanding foundations, substation foundations and met masts;
- Excavation of borrow pits, processing of materials and reinstatement by wet or dry working, dewatering or dredging.
- Excavation for cable ducts (both onsite and the grid connection); and
- Construction of surface water drainage system along the new internal access tracks.
- unsuitable founding soils and peat will be side casted, bermed and profiled, generally the height and thickness of berms will not be greater than 1m.

10.8.13. A total of 363,000m3 of peat will be excavated, a break-down of which is provided in Table 9-9 of the EIAR. Material will be imported from locally approved quarries. The potential effect of extracting additional volumes of material from external quarries include additional pressure on transport routes and more fuel consumption and is considered in the traffic and transport section of this EIA.

10.8.14. As clarified in the additional information, it is proposed to only extract 10-hectares (or less than 250,000m3) from the Extraction Area 1 (also referred to as Borrow Pit A in the EIAR). Surplus peat from the overall project will be used to reinstate the 10-hectare extraction area and will also be used in the remainder of Borrow Pit A.

10.8.15. Regarding turbine foundations, the foundation method is clarified in the Response to Submissions which states that based on ground investigations, the proposed foundations will be piled. Foundation depths are expected to be c.3 m deep with an approximate diameter of 22m. Stone for the capping layer will be sourced off-site from locally approved quarries.

10.8.16. **Baseline**

10.8.17. In 1992, Bord na Móna Energy Limited established Ireland's first commercial wind farm, comprising 21 turbines, on the cutover blanket bog at Bellacorick. In the past, the main activity on the site was peat harvesting to supply the nearby power station at Bellacorick until peat harvesting operations ceased in 2003. The peat-burning power station at Bellacorick burned milled peat from the surrounding bog from 1962 until it was decommissioned in 2005. In accordance with IPC Licence P0505, a bog rehabilitation programme has been developed and implemented.

10.8.18. The EIAR describes the site as varying in elevations from c.75 to 130 mAOD, with most of the site located on the lower and relatively flat-lying areas, currently overlain by cutover blanket peat bog. The proposed turbines are located between 80mOD and 100mOD. Peat depths ranged from 0.1 to 3m at the proposed turbine locations.

10.8.19. Areas of alluvium have been identified along the western site boundary, along the Bellacorick River channel (also known as the Oweniny River), a geological heritage site, and which is be crossed by the proposed cable route. Glacial till is exposed in some areas where the peat has been cutover. Other areas of gravel have also been identified, while some areas of blanket bog are still in place including to the northeast of Lough Dahybaun and near Fornought Hill.

10.8.20. The EIAR contained conflicting information regarding peat stability risk. This was clarified by the applicant in additional information including the Addendum to the EIAR, referring to the Peat Stability Risk Assessment (Appendix 9.4) of the EIAR which states that the pre-control risk rating is Low or Negligible, while the post-control risk rating is also Low or Negligible, while the site is designated as "Moderately Low" or "Low" susceptibility on the GSI Landslide Susceptibility mapping.

10.8.21. The site area is classified as a 'poor aquifer- bedrock which is generally unproductive except for Local Zones (Pl).'

10.8.22. **Likely Significant Effects**

Likely significant effects of the development, as identified in the EIAR, are summarised below:

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|
| **Do nothing** | Within the proposed wind farm site, forestry management, including thinning, felling, extraction and replanting, would continue as present. Agricultural management in the wider area would also continue. |
| **Construction** | Removal of vegetation and topsoil can lead to soil erosion and siltation of watercourses.<br><br>There is potential for hydro-carbon release from fuel which may contaminate the soil and subsoils.<br><br>Creation of dust from material extraction and transport of soils and excavated rock.<br><br>Excavation collapse.<br><br>Peat slippage. |
| **Operation** | During the operation phase of the project, no significant effects on the soil and geological environment will arise due to the good stability of foundations.<br><br>Potential for hydrocarbon or oil spills relating to site maintenance to negatively directly affect the ground. |
| **Decommissioning** | The potential effects associated with decommissioning will be similar to those associated with construction but of reduced magnitude because extensive excavation, and wet concrete handling will not be required. |
| **Cumulative** | The cumulative assessment (section 9.6. of the EIAR) erroneously refers to hydrology and groundwater environment, it does however, set out the relevant applications considered in the assessment. I am satisfied however that significant cumulative effects do not arise in terms of other projects in the vicinity of the site due to the separation distances and due to the localised nature of the proposed works within the site boundary. |

10.8.23. **Mitigation Measures**

Mitigation measures are set out in section 9.5 of the EIAR and include those listed below.

| **Effect** | **Mitigation Measure** |
|---|---|
| Management of Excavated Materials to prevent erosion and siltation | Measures will be monitored through implementation of the CEMP (see Appendix 3.1 of the EIAR). Section 9.5.2.4 of the EIAR sets out relevant measures and include:<br>• Excavated peat will only be moved short distances;<br>• Landscaping areas will be sealed and levelled using the back of an excavator bucket to prevent erosion.<br>• Peat, overburden, and rock will be reused where possible on site;<br>• Silt control measures including storage of peat away from watercourses.<br>• If contaminants are found the material will be removed from site using an appropriate permitted contractor and disposed at an appropriately licenced facility.<br>• The earthworks will not be scheduled to be carried out during severe weather conditions.<br>• Preparation and implementation of a Peat Management Plan.<br>• Excavation works will be monitored by a suitably qualified and experienced geotechnical engineer or engineering geologist. |
| Geohazard / Peat & Soil Stability | Relevant measures are set out in section 9.5.2.5 and include stepping or battering back of excavations to a safe angle or construction of a temporary sheet pile wall to support the peat and soft clays. |

| | |
|---|---|
| | A physical barrier will be implemented between the excavations and the potentially unstable material at unstable conditions, in the form of a granular berm or sheet piles.<br><br>The long-term stability of the area around the wind turbine foundations will be achieved by filling the area back up to existing ground level following installation of the foundation.<br><br>Peat stability will be managed through the use of a geotechnical risk register. |
| Hydrocarbon or oil spill contamination | Good site practice will be applied to ensure no fuels, oils, wastes or any other substances are stored in a manner on site in which they may spill and enter the ground. Dedicated, bunded storage areas will be used for all fuels or hazardous substances. Measures dealing with contamination are set out in EIAR section 9.5.2.3. and include a fuel management plan. |
| Concrete/cement management | Wash down and washout of concrete transporting vehicles will take place at the source.<br><br>Waste material will be removed from site to an appropriate waste permit facility. |

10.8.24. **Residual Effects**

No significant negative residual impacts are envisaged in terms of land and soils following the development and operation of the project.

10.8.25. **Assessment – Direct and Indirect Effects: Soils & Geology**

10.8.26. I have considered all the submissions made in relation to land and soil and note Mayo County Council's Chief Executive Report that the area remains degraded and that the use of the land as a windfarm has been established. IFI's concerns

regarding extraction below the water table have been addressed – no extraction will take place below the water table.

10.8.27. The project site is relatively flat lying, with cutover blanket peat overlying glacial till. Mitigation by avoidance and by design was applied when choosing the proposed layout to minimise impacts on the existing nature of the site. I note the assessment carried out of soils and geology, including detailed ground investigations, the Peat Stability Risk Assessment (Appendix 9-4), the low or negligible risk rating for peat instability and noting that any collapse is likely to be localised to each individual excavation and subject to the full implementation of proposed mitigation measures to minimise the risk of peat failure which include stepping or battering back of excavations to a safe angle, the volume of material to be excavated which will be managed, reused and stored locally on site, the maintenance of the hydrology of the area and having regard to the Peat Management Plan (PMP) (Appendix 9.3) which includes a monitoring programme during the construction phase. Having regard to the foregoing I am satisfied that subject development will not give rise to significant direct, indirect or cumulative effects on land, soils or geology of the site, including on upland blanket bog and peat stability

## 10.9. Water

### 10.9.1. Issues Raised

10.9.2. The IFI submission raised concerns regarding the impact of the development on important fisheries habitat, including Muing River, Owenmore River, Oweninny River, Cloonaghmore River and Deel River catchments. It notes that the Owenmore River catchment is under environmental pressure and while salmon stocks have recovered it is imperative that any development does not impact on the Owenmore River system, aquatic habitat or water quality. The Cloonaghmore River is under environmental pressure, noting that salmon stock have declined below their conservation limit. To the east of the site, the Fiddaunagosty River and the Shanvolahan River, tributaries of the Deel River, are under environmental pressure including from sediment pollution, noting that the Deel River supports a population of freshwater pearl mussel downstream. The IFI request that two additional surface

water monitoring points be included and request that no extraction from the borrow pit below the water table to reduce the volume of water required to be treated for silt.

10.9.3. Third party submissions raised concerns over the risk of flooding, the Surface Water Management Plan (SWMP) which is not considered acceptable, and querying if the surface water mitigation measures proposed can be considered mitigation. Concerns are also raised over local water pollution, especially to Oweninny River.

10.9.4. **Context**

10.9.5. Chapter 10 and Chapter 11 of the EIAR identifies, describes, and assesses the impact of the proposed development in the context of Hydrogeology and Hydrology & Water Quality. The Technical Appendices contain a Flood Risk Assessment (FRA) for the substation (11-1), a Surface Water Management Plan (11-2) and a Water Framework Directive Report (11-3). These chapters should be read in conjunction with the EIAR Addendum submitted as additional information.

10.9.6. The topographical elevations range from c.80 to 130 mAOD, with the majority of the site located on the lower and relatively flat lying areas, currently overlain by blanket peat bog which has been subject to historic peat cutting. An extensive network of drainage channels is present throughout the peatland and is managed under IPC licence.

10.9.7. The proposed development for Oweninny Wind Farm Phase 3 lies in two catchments, comprising four sub-catchments. The western side of the windfarm belongs to the Blacksod-Broadhaven Catchment and the eastern side lies within the Moy and Killala Bay Catchment. The Owenmore [Mayo]_SC_020 and the Owenmore_SC_010 sub catchments are located in the Blacksod-Broadhaven catchment. The Cloonaghmore_SC_010 sub catchment and the Deel [Crossmolina]_SC_010 sub catchments are located in the Moy and Killala Bay catchment. Limited groundwater flow occurs due to deep till deposits on site.

10.9.8. The majority of the site lies within the catchment of the Oweninny/Owenmore River. Oweninny Bog has been relatively good in terms of water quality since regular monitoring commenced. The waters of the Deel River Catchment that overlap the bog boundary are the poorest in terms of quality.

10.9.9. The naming of the streams varies between the historical maps, OSI maps and the EPA catchment maps. A useful table detailing catchment summary and relevant watercourses is found at Table 11.3 of the EIAR.

10.9.10. The Bellacorick Iron Flush Special Area of Conservation (SAC) is surrounded by Phase 1 of the operational Oweninny Windfarm and is 0.65km to the northwest of the proposed development footprint. The zone of contribution to the flush does not extend into the Phase 3 development. The flush area supports rare and protected species including Marsh Saxifrage. The iron flush area ecology is dependent on the rate of groundwater flow through it and also its hydrochemistry. The nearest proposed excavations to the Iron Flush comprise a shallow borrow pit. It has an area of approximately 40Ha. Given the topography almost all of the borrow pit area is below the level of the discharge line within the flush there is no potential groundwater flow paths towards the iron flush. As a result, the EIAR states there is no potential to impact on groundwater flows or surface water to the flush area.

10.9.11. Part of the Lough Dahybaun SAC is located within the proposed development site boundary. Limited construction works are proposed in the catchment area to Lough Dahybaun. An amenity access is proposed to provide walking access to the site, this comprises part resurfacing of an existing track which is located to the north of Lough Dahybaun.

10.9.12. Formoyle Flush is located to the east of the Oweninny site, within the Bellacorick Bog Complex SAC. This also supports rare plant species dependent on groundwater flow and hydrochemistry.

10.9.13. The south-eastern part of the site drains to Shanvolahan River and its tributaries (Fiddaunagosty and Fiddauntooghaun) before entering the Deel River, 8km to the southeast. The Shanvolahan is a tributary of the Deel river which supports an important population of Margaritifera margaritifera, the Freshwater Pearl Mussel. While the EIAR notes that the nearest recorded freshwater pearl mussel (FWPM) population is located some 8 km downstream of the Oweninny site boundary.

10.9.14. The assessment methodology includes a review of relevant legislation and guidance, a desk study, site walkover, an intrusive investigation, a flood risk assessment, surface water quality monitoring, an evaluation of potential effects, an

evaluation of the significance of the effects, and an identification of measures to avoid and mitigate effects. The walkover survey included hydrological mapping, hydraulic capacity and adequacy of existing stream culverts. The assessment followed a number of Irish and UK Guidelines e.g. EPA document 'Guidelines on Information to be contained in Environmental Impact Statements' (2022).

10.9.15. Limitations are not expressly considered in the EIAR. I am satisfied however that there are no limitations in respect of the assessment of water.

10.9.16. The following key proposed development activities may have potential impacts on surface water conditions:

- Soil stripping, stockpiling, Installation of surface water drainage system and culvert installation;
- Water management at turbine locations and borrow pits/peat deposition areas. As noted above, however, the additional information indicates that excavation below the water table is now not proposed);
- Wastewater management;
- Use of hydrocarbons and cement;
- Cable installation.

10.9.17. A total of five streams will be crossed as part of the development, in addition to a number of internal drain crossings. Four of the five stream crossings will use existing bridges, with one new bridge required to access T16. The new bridge will cross the river Fiddaunfura (EPA name Kilfian South ED). At this location it is proposed to use a clear-span type bridge (Additional Information, Appendix 4 of the EIAR Addendum) and no-instream works are proposed (Additional Information drawing: 'Existing & Proposed Bridges & Drain Crossings').

10.9.18. **Baseline**

10.9.19. The Muing River and Cloonaghmore River are of 'Good'' status. The Owenmore River has 'High' status and the Shanvolahan River is at 'moderate' status in the 2016-2021 River Waterbody WFD Status. The majority of EPA monitoring points indicate that the overall water quality in this area is unpolluted. The EIAR states that all the tributaries draining this area, even minor ones have populations of

salmonids. This is due in part to the existing good water quality at the existing windfarms and due to low intensity agricultural activity. Crayfish were found on two of the Shanvolahan tributaries.

10.9.20. The EIAR describes groundwater quality as being good with poorly productive bedrock. Groundwater flow is expected to be dominated by shallow flowpath towards the most convenient receptor, the local surface water courses. The groundwater vulnerability throughout the proposed site ranges from moderate vulnerability to high vulnerability, reflective of highly permeable sand and gravels in some areas. The proposed development is underlain by the Belmullet GWB and the Bellacorick-Killala GWB. The GWBs underlying the site are classified as being at 'Good' status.

10.9.21. Groundwater levels were monitored at the proposed Borrow Pit Area 1, proposed substation location and at a remnant peatland to the south east of Temporary Construction Compound 3 and reflect shallow groundwater levels.

10.9.22. **Likely Significant Effects**

Likely significant effects of the development, as identified in the EIAR, are summarised below:

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|
| **Do nothing** | Pressures on the local water quality will continue without separate intervention. There are no significant effects to the hydrogeological or hydrological environment in a do-nothing scenario.<br><br>In this scenario, the WFD 'High' status objective will likely be maintained. The status of the Shanvolahan_020 is likely to achieve good status by 2027 due the recent improvement (2021 data) in water quality. |
| **Construction** | Exposed and disturbed ground may increase the risk of erosion and subsequent sediment laden surface water runoff which may degrade water quality.<br><br>Concrete and similar other products may give rise to alkali effluents that may impact on receiving waters. |

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| | Development could potentially reduce the infiltration capacity of the soils in areas where earthworks are undertaken and increase the rate and volume of direct surface runoff.<br><br>There is a risk of accidental pollution incidences from oil, fuel, cement and wastewater. |
| **Operation** | If uncontrolled discharge of such effluents occur it may impact on water quality.<br><br>Where oil is stored there is a risk of vessel failure and spillage that can impact on water and soil quality.<br><br>Occasional/accidental emissions, in the form of oil, petrol or diesel leaks from vehicles. |
| **Decommissioning** | In general, the potential effects associated with decommissioning will be similar to those associated with construction but of reduced magnitude because extensive excavation, and wet concrete handling will not be required. The potential environmental effect of soil storage and stockpiling and contamination by fuel leaks will remain during decommissioning. |
| **Cumulative** | The following developments were considered cumulatively: Sheskin Windfarm, Doonleg Windfarm, Oweninny Windfarm, Phase 1 and 2, and the green Hydrogen Plant. Subject to implementation of mitigation measures associated with other development, it is considered unlikely that the development will not give rise to any significant cumulative impacts with regards to hydrogeology and water quality. |

10.9.23. **Mitigation Measures**

Mitigation measures are set out in section 10.5 and section 11.5 of the EIAR and include those listed below.

| | **Mitigation Measures** |
|---|---|
| **Impact on protected sites** | Mitigation by design e.g. the proposed development areas in the vicinity of the Bellacorick Iron Flush SAC are significantly outside the groundwater recharge area and surface water catchment area to the flush; the siting and design of construction of turbines to avoid potential impact on the designated areas including Lough Dahybaun SAC. |
| **Concrete contamination/spill** | Compliance with the Surface Water Management Plan, specifically section 2.1.6 (Appendix 11.2 of the EIAR) and the CEMP. |
| **Hydrocarbon or oil spill contamination** | Compliance with good construction practice and finalisation and compliance with a CEMP.<br><br>Compliance with the Surface Water Management Plan, specifically section 2.1.7 (Appendix 11.2 of the EIAR).<br><br>Fuel and oil storage at fixed locations will be in a fixed tank, undercover and within a steel or concrete bund. A dedicated impermeable bunded refuelling area will be constructed adjacent to the fixed fuel storage areas.<br><br>In the event of a spill, the liquid contained in the bund, surface water drainage system and oil interceptor shall be removed by a liquid waste tanker.<br><br>No external tanks and associated fuel lines shall be permitted on site unless these are housed within a fixed bund with the generator.<br><br>An oil spill response plan will be developed for the construction works.<br><br>Regular inspection of plant and machinery.<br><br>Monitoring of surface water. |

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| **Siltation impacts** | Compliance with best practice i.e. *Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites* (IFI).<br><br>Compliance with the Surface Water Management Plan, (Appendix 11.2 of the EIAR) specifically section 2.1.3. Erosion and Sediment Control Measures and section 2.1.8 Works near Watercourses.<br><br>The waters from excavations will be discharged through settlement pond and silt control device (silt bag/check dams) to the recolonising cutover peat land.<br><br>Installation of interceptor drains.<br><br>Settlement ponds will be located downstream to manage/buffer volumes of water thereby reducing the loading to watercourses.<br><br>Storage locations for excavated materials, equipment, hydrocarbons will not be stored within 20m of any watercourses or wetland areas.<br><br>It is proposed to install bottomless culverts/clear span bridges anywhere the proposed road layout intersects a stream.<br><br>Compliance with the CEMP, including emergency silt control & spillage response procedures.<br><br>Monitoring of surface water at pre-construction, during construction and post-construction and maintenance of surface drainage systems. |
| **Wastewater pollution/leak** | Welfare facilities at the substation will discharge to a holding tank prior to removal to an appropriate licenced facility.<br><br>Ongoing maintenance of systems. |

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| **Increase in run-off from hardstanding areas** | Sustainable drainage devices e.g. attenuation lagoons will mimic existing greenfield runoff in terms of volume, rate of runoff and quality of the runoff. |

10.9.24. **Residual Effects**

The residual impacts on the surrounding groundwater quality, hydrology and existing drainage regime at the site are not significant and short-term in nature. The existing on-site drainage system will remain active during construction and operation of the proposed wind farm and will be enhanced by a proposed drainage plan that has been designed for this development.

10.9.25. **Assessment of Direct and Indirect Effects: Water**

10.9.26. In submissions, the IFI raised concerns regarding the impact of the development on important fisheries habitat, including Muing River, Owenmore River, Oweninny River, Cloonaghmore River and Deel River catchments. IFI request that two additional surface water monitoring points be included; one control site upstream of the development and one downstream of T18 and the applicant is agreeable to the additional monitoring locations, and details of the additional monitoring locations are submitted in the applicant's response to submissions. The IFI further requests that no extraction from the borrow pit below the water table to reduce the volume of water required to be treated for silt and as detailed above the applicant confirms, in the additional information response, that the extraction technique used will be above the water table i.e. dry extraction.

10.9.27. Generally, Oweninny Bog has been relatively good in terms of water quality since regular monitoring commenced. The waters of the Owenmore/Oweninny catchment area are of very good quality while the waters of the Deel River Catchment to the east are the poorest in terms of quality, where the Shanvolahan_010 subcatchment is 'at risk' of not meeting environmental objective with pressures from hydromorphology, agriculture and forestry (EPA, Cycle 3 Subcatchment Assessment).

10.9.28. Section 11.3 of the EIAR relates to flood risk and appendix 11.3 comprises a Flood Risk Assessment (FRA) for the proposed substation site. There is no evidence of historic groundwater flooding at the proposed substation site. Based on the results of the FRA, the risk of flooding associated with the development site is minimal. The substation is located outside of the predicted fluvial flood extents and will not impede flow paths or floodplain storage during extreme flood events. The proposed substation is stated to be appropriately located in Flood Zone C (i.e. not predicted to flood during a 1000-year event) however parts of the site may be at risk of pluvial flooding during periods of intense rainfall. Surface water management based on the Sustainable Drainage Systems (SuDS) principles shall be incorporated in the development limiting discharge from the hardstanding area to greenfield runoff rates. Based on the foregoing I am satisfied that the proposed substation development is satisfactory from a flood risk perspective.

10.9.29. The likely effects of the proposed development on the water environment are considered in the EIAR and in the accompanying WFD Assessment Report (Appendix 11.3) and in the absence of WFD planning guidance nationally, the assessment methodology relies on NI and UK guidance. The construction phase, and to a lesser extent decommissioning, of the proposed wind farm has the greatest potential to affect WFD status, while the operation of the wind farm should present no significant impacts on surface waterbodies.

10.9.30. A Water Framework Directive (WFD) Assessment Report is submitted with the application, EIAR Appendix 11.3 refers. It specifically considers the potential for the proposed development to have non-temporary effects on WFD parameters of freshwater waterbodies. The proposed wind farm site is located mostly within the Oweninny/Owenmore River catchment, located on the eastern part of Oweninny Bog. The assessment comprises an hydro-morphological and water quality assessment across construction, operational and decommissioning phases. With the implementation of the mitigation measures it is concluded that in combination with other proposed wind farms the proposed wind farm will not compromise the achievement of the objectives of the WFD for any water body.

10.9.31. The WFD report, in my opinion, lacks clarity and accuracy, for example, Table 2-5 Hydromorphological Assessment erroneously refers to the Cloonaghmore_010 as being at ‘high status’. The Cloonaghmore_010 sub-catchment (comprising the

Fiddaunfura River (EPA name Kilfian South ED), Doobehy River and Shanvodinnaun tributaries) is at good status. It is proposed to construct a new clear span bridge and a number of drains (typical culverts) over Fiddaunfura River. Fiddaunfura River flows eastwards into the Bellacorick Bog Complex SAC. The Muing River (to the south of the proposed development) flows into the Owenmore River (EPA name Owenmore (Mayo)_020) which bounds the Bellacorick Bog Complex SAC) however the WFD Report states that there is no pathway to the Bellacorick Bog Complex SAC.

10.9.32. Potential impacts on biological quality elements are assessed in Chapter 8 of the EIAR, a summary of which is presented in the WFD Report and states that the clear span watercourse crossing techniques to be used for the construction of the proposed development are not anticipated to have any significant direct impact on habitats within the affected WFD water bodies. No mention of the proposed installation of culverts on Fiddaunfura River, tributaries of WFD waterbodies or other waterbodies are considered in the WFD Report. Notwithstanding these anomalies, the construction works, which has the greatest potential to affect waterbodies (and WFD status) is temporary in nature. The construction mitigation measures set out in section 3.1.1 of the WFD Report should be read in conjunction with measures in the CEMP and the SWMP. I note that the WFD Report states several times that no-instream works are proposed however 20+ culvert drains are proposed, some of which are connected hydrologically to protected areas, while the CEMP discusses culverts and associated diversions of main drainage. It is not possible to reconcile these anomalies in assessing the WFD Report. Impact on Natura sites and protected sites are considered in the AA and Section 11.0 of this report.

10.9.33. The EIAR notes that the nearest recorded freshwater pearl mussel (FWPM) population is located some 8 km downstream of the Oweninny site boundary in the Deel River. The Deel River is included in the River Moy SAC and impact on Natura sites are considered in section 11.0 of this Inspector's report, though it is noted that the FWPM is not a qualifying interest of the SAC.

10.9.34. Aside from impact on protected areas, assessed in Section 11.0 of this report and notwithstanding the anomalies in the WFD Report and following the IFI concerns relating to water quality, additional measures such as 'dry excavation' of borrow pits and additional monitoring locations, implementation of the full suite of mitigation and monitoring measures, I am satisfied that no significant direct, indirect or cumulative

effects on the water environment, including as a consequence of peat stability (assessed in section 10.8 of this report) arise as a result of the proposed development. Construction management issues raised in submissions e.g. in respect of minimising the risk of pollution, agreement of methodology with IFI, appropriate monitoring and provision of Environmental Monitoring Committee, can be dealt with by the Board in conditions of the permission.

## 10.10. Air Quality & Climate

### 10.10.1. Issues Raised

Third party submissions raise concerns about air pollution including dust impacts from construction. References are also made in favour of peatland restoration as a benefit and if it would be more beneficial for the lands to serve as wetlands.

### 10.10.2. Context

10.10.3. Chapter 12 of the EIAR considers the potential for impacts to arise in relation to air and climate, appendix 12.1 Ambient Air Quality Standards and Appendix 12.2 Dust Management Plan relate. The following areas are considered: methodology, baseline conditions, assessment of potential effects, mitigation and residual effects.

10.10.4. During construction, the key works included in this development with the potential for dust emissions include earthworks and excavation activities, construction of hardstanding areas and movement of vehicles on and off site. In addition, there is the removal of the 21 existing Bellacorick Wind Farm turbines which are to be decommissioned.

### 10.10.5. Baseline

10.10.6. The site is located within EPA monitoring Zone D network. Existing baseline levels of NO2, PM10 and PM2.5 based on extensive long-term data from the EPA are well below ambient air quality limit values in the vicinity of the proposed wind farm development.

10.10.7. There is no legislative limit for dust in Ireland. A guideline limit is 350mg/m2 /day is applied in the EIAR and is generally considered best practice in the absence of site-specific guidance.

Regarding climate, the Climate Action Plan seeks to tackle climate breakdown and achieve net zero greenhouse gas emissions by 2050, a reduction of GHG emissions by 2030 and the delivery of up to 9 Gigawatts of onshore wind energy. The existing on-site Bellacorick windfarm have an installed capacity of 6.45 MW.

10.10.8. I note that none of the road links impacted by the Proposed Development meet the scoping criteria UK design manual for roads and bridges (DMRB) guidance LA 105 (UK Highways Agency, 2019a) for further assessment above and it can therefore be concluded that there is no potential for significant impacts to climate as a result of vehicle emissions.

10.10.9. In terms of receptor sensitivity to dust soiling, there are between 1-10 no. high sensitivity residential properties within 350m of the site boundary. Some of these are receptors related to the existing Bord na Móna activities. The residential properties on the N59 are also within 50m of the main access road to the site on which site vehicles will travel. Therefore, the worst-case sensitivity of the area to dust soiling is considered, in the EIAR, to be low.

10.10.10. There is potential for ecological impacts in relation to dust up to 50m from the works and access routes to the site. Therefore, there is a high sensitivity to ecological dust impacts from the proposed wind farm development. There are several sensitive sites (SACs, SPAs and a pNHA) proximate to or within the site (i.e. Lough Dahybaun SAC), although the nearest proposed infrastructure is 130m to Lough Dahybaun.

10.10.11. **Likely Significant Effects**

Likely significant effects are set out in section 12.4 of the EIAR and are summarised below.

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|
| **Do nothing** | The ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area. The calculated embodied CO2 emissions will not occur and peat removal will not occur. The |

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| | production of new/increased renewable wind energy at the site will not occur. |
| **Construction** | In terms of air quality, the greatest potential impact during the construction stage will be from dust emissions associated with the construction works, such as earthwork activities, excavations, aggregate fill and traffic movement (e.g. aggregate deliveries, trackout).<br><br>Embodied GHG emissions from the manufacture of materials, materials transport to site (exhaust emissions) and construction works. EIAR Table 12.14 details the embodied carbon emissions associated with each category. The total construction phase embodied emissions totals 7,088 tonnes CO2eq; which equates to 0.012% of Ireland national GHG emissions in 2020 or 0.022% of Ireland's 2030 GHG emission target. |
| **Operation** | Increased road traffic emissions resulting from the proposed development are expected to have an imperceptible impact on air quality during the operational phase.<br><br>The generation of electricity due to the installation of the wind farm will lead to a net saving in terms of NOx emissions.<br><br>The wind farm will have an export capacity of up to approximately 90 MW. |
| **Decommissioning** | Impacts of decommissioning are considered to be similar to construction, but with less impact. |
| **Cumulative** | There is no potential for cumulative dust impacts given the distance to other projects in the area.<br><br>The proposed development together with other existing wind farm developments will cumulatively aid in reducing |

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|---|---|
| | NOx emissions from burning of fossil fuels for electricity production and will be long-term and positive. |

10.10.12. **Mitigation Measures**

Mitigation measures are set out in section 12.5 of the EIAR and include those listed below.

| Effect | Mitigation Measure |
|---|---|
| **Dust emissions** | A Dust Management Plan (appendix 12.2 of the EIAR) will be reviewed at regular intervals and will be incorporated into the CEMP. |
| **Exhaust emissions & Climate impacts** | Contractors will ensure that machinery used on site is properly maintained and is switched off when not in use to avoid unnecessary exhaust emissions.<br>The existing 21 no. turbines will be removed and recycled where possible.<br>Upon decommissioning of the proposed windfarm, turbines will be removed and recycled where possible. |

10.10.13. **Residual Effect**

Following the implementation of mitigation measures detailed in the mitigation section of this chapter (Section 12.5), fugitive emissions of dust from the site will be imperceptible and temporary and will pose no nuisance or human health impacts at nearby receptors. The proposed development will assist in the CAP 2023 goal of producing up to 80% renewables for the grid. Therefore, its potential effect can be classed as long-term, beneficial and significant.

10.10.14. **Assessment of Direct and Indirect Effects: Air Quality & Climate**

10.10.15. The supply of renewable electricity to the national grid will lead to a net saving in terms of NOx emissions which may have been emitted from fossil fuels to produce

electricity. The annual impact of the development is to decrease annual NOx emission levels by 0.05% of the ceiling levels (relative to the NOx emissions associated with power generation in Ireland 2020 (EPA, 2022d)).

10.10.16. Having regard to the nature of the proposed development, its location in a rural area, at substantial distance from nearest sensitive receptors and in the context of other wind farm development, and subject to implementation of proposed mitigation measures, I am satisfied that the proposed development will not give rise to any direct, indirect or cumulative significant adverse effects on air quality or climate and will give rise to long term, direct and cumulative positive effects on air quality and climate.

## 10.11. Noise and Vibration

### 10.11.1. Issues Raised

A number of third parties raise concerns with respect to noise pollution in particular noise /swish made from turbine blades and construction noise, including noise associated with borrow pits and peat deposition areas. Concerns are raised over amplitude modulation. It is stated that residents are currently impacted by Phase 1 and 2 Owenniny windfarm in relation to noise from turbines, including at nighttime, and raise concerns over cumulative noise impacts. Concerns are raised regarding the devaluation of their property which will occur in part due to noise pollution. Concerns are raised with respect to sleep disturbance and concerns are raised with respect to impact of noise on fauna, such as badgers, and deer. Questions are asked as to the relevance of noise guidance and whether more up-to-date guidance is available.

### 10.11.2. Context

10.11.3. Chapter 13 of the EIAR, prepared by AWN Consulting Ltd, considers the potential for impacts to arise in relation to Noise and Vibration. Appendix 13.2 Noise Meter Calibration Certs, Appendix 13.3 Noise Modelling Assumptions and Inputs, Appendix 13.4 Tabulated Omi Directional Results – Cumulative, Appendix 13.5 Tabulated Omni Directional Results – Proposed Development in Isolation, Appendix

13.6 Noise Contour Maps and Appendix 13.7 Predicted Noise Levels are relevant. The applicant's response to submissions is also relevant.

10.11.4. The following areas are considered: methodology, baseline conditions, assessment of potential effects, mitigation and residual effects.

10.11.5. During construction, the key works included in this development with the potential for noise include earthworks and excavation activities, construction of substation, hardstanding areas, erection of turbines and movement of vehicles on and off site. In addition, there is the removal of the 21 existing Bellacorick Wind Farm turbines which are to be decommissioned. During operation, noise from operating turbines and the substation are key considerations, while during decommissioning, removal of turbines is a key consideration.

10.11.6. **Baseline**

10.11.7. The study area for the noise and vibration impact assessment was defined by the area where there is potential for noise and vibration impacts at Noise Sensitive Locations (NSLs) associated with the Proposed Development during the Construction, decommissioning, and Operational Phases. A background noise survey was undertaken to determine typical background noise levels at representative at six NSL's surrounding the development site. The survey duration was typically 4 weeks and generally over the winter period of 2020/2021.

10.11.8. Noise from the existing wind turbines in the area should not form part of the background noise environment at noise sensitive locations and turbine noise from existing turbines was removed in the background noise data using directional filtering and I note that the EIAR states that noise from the operation of existing turbines was not noted to be audible at any of the locations during site visits.

10.11.9. In general, the significant noise sources in the area were noted to be local and distant traffic movements, activity in and around the residences, wind generated noise from local foliage and other typical anthropogenic sources typically found in such rural settings. The subject site lies in rural area where existing background noise levels at NSRs are low (<30dB at low wind speeds), Table 13-11 of the EIAR refers. The baseline results were considered slightly conservative as the surveys

were undertaken during Covid and hence background traffic noise may have been lower than usual.

10.11.10. **Likely Significant Measures**

Likely significant effects are set out in section 13.4 of the EIAR and are summarised below.

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|
| **Do nothing** | The existing noise environment will remain largely unchanged. |
| **Construction** | The closest noise sensitive receptor (NSR) to a turbine is Location R10, which is situated in excess of 1,160 m from propsoedT16. The predicted noise level total is 45 dB LAeqT at 1000m for hardstanding and turbine construction.<br><br>The closest NSR to a proposed internal road is 450m from R71. The predicted noise level total is 41 dB LAeqT at 450m for internal road construction.<br><br>The closest NSR to the proposed amenity walkway is 420m from R52. The predicted noise level total is 42 dBLAeqT at 420m for walkway construction.<br><br>In respect of borrow pits, 10 no. NSRs were assessed: predicted noise levels ranged from 33-39 dB LAeqT.<br><br>The proposed substation is located +2km from a NSR and noise levels impacts will be in the order of 30 dB LAeqT.<br><br>The nearest NSR to any point along the proposed grid connection route is 40m to R70. At distances of 40m, the predicted cumulative noise levels from construction activities are 63 dB LAeq,T.<br><br>The predicted increase in noise from construction traffic is 1-2 dB and can be considered a minor impact. |

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| | In all instances the predicted noise levels at the nearest NSLs are below the appropriate criteria outlined in Table 13-1 (Category A – 65 dB LAeqT during daytime periods).<br><br>Due to the distance of the proposed works from sensitive locations significant vibration effects are not expected. |
| **Operation** | <u>Turbines:</u><br><br>At all NSL's the worst omni-directional cumulative turbine noise levels are below the noise criterion curves which the exception of some slight exceedances at R74, R75 and R76 – these are based on omni-directional noise prediction calculations which do not occur in real world scenarios. The results confirm that the predicted turbine noise levels for the Proposed Development are well below the criteria at all NSL's; the maximum predicted noise level from the proposed development in isolation is 34.9 dB LA90 at location R10. It is noted following review of the directional noise predictions that the slight potential exceedances of the criteria noted in the omni-directional predictions at locations R74, R75 and R76 are no longer present. It is confirmed that the predicted cumulative turbine noise levels with the proposed development are all below the turbine noise criterion curves and specific noise mitigation measures are not required. The likely predicted noise impacts are below the limits identified. Effects are predicted to be negative, slight and long-term.<br><br><u>Substation</u>:<br><br>The predicted noise level from the operation of the substation at the nearest NSL (R72 at approximately 2.4 km) is 11 dB LAeq,T and would be inaudible at the nearest NSR. |

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| **Decommissioning** | Similar overall noise levels as those calculated for the construction phase would be expected, predicted noise levels are expected to be below the appropriate Category A value (i.e. 65 dB LAeq,T) at all NSLs for the decommissioning phase, the impact is not significant. |
| **Cumulative** | The turbine noise assessment has considered the cumulative noise impact of the Proposed Development in combination with Oweninny Phase 1 and Oweninny Phase 2 Wind Farms.<br><br>The findings of the assessment confirmed that the predicted operational noise levels from the Proposed Development in combination with all permitted and existing wind farms in the area, will be within the relevant best practice noise criteria.<br><br>Cumulative impact was also assessed in respect of the permitted Hydrogen Production Plant. The nearest NSRs are R71, R72 and R02. The EIAR states that there are no increases to the overall noise levels associated with the cumulative impacts at the nearest noise sensitive locations. |

10.11.11. **Mitigation Measures**

Mitigation measures are set out in section 13.5 of the EIAR and include the following:

| **Effect** | **Mitigation Measure** |
|---|---|
| **Construction phase noise & vibration** | Limiting construction hours.<br><br>Appointing a site representative responsible for matters relating to noise and vibration.<br><br>Monitoring typical levels of noise and vibration during critical periods and at sensitive properties. |

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| | Even site access tracks to mitigate the potential for vibration from lorries.<br>Compliance with best practice i.e. S 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise.<br>Where rock breaking is used, acoustic screening may be erected or an enclosed breaker may be used.<br>Range of measures set out in section 13.5.1.1 of the EIAR.<br>Adherence to vibration levels set out in table 13-2 of the EIAR. |
| **Operational noise** | No specific mitigation measures are proposed – as the assessment concludes that the predicted operational noise levels from the Proposed Development in combination with all permitted and existing wind farms in the area, will be within the relevant best practice noise criteria.<br>Commissioning noise surveys will be undertaken to ensure compliance with any noise conditions applied to the development.<br>In the event that there is a complaint regarding amplitude modulation (AM) a qualified acoustic consultant to assess the level of AM and evaluate mitigation measures. |
| **Decommissioning phase noise** | Measures will be similar for the construction phase and are set out in detail section 13.5.1 of the EIAR. |

10.11.12. **Residual Effect**

During construction and decommissioning, the effect at the nearest noise sensitive locations is negative, not significant and temporary. During operation, the predicted residual turbine effect for the closest NSRs is negative, slight and long-term. Noise from the substation is predicted to be imperceptible at the closest NSRs. There are

no expected sources of vibration associated with the operational phase of the proposed development. There are no significant cumulative impacts predicted with the operation of the proposed development; cumulative effects are assessed as negative, not significant and long-term at the nearest NSRs.

10.11.13. **Assessment of Direct and Indirect Effects: Noise & Vibration**

10.11.14. Construction noise predictions have been carried out using guidance set out in BS 5228-1, Code of practice for noise and vibration control on construction and open sites – Noise. During construction, the typical construction noise sources are assessed along with typical sound pressure levels and spectra from BS 5228-1 at various distances from these works. Operational phase noise is based on 1996 ETSU publication The Assessment and Rating of Noise from Wind Farms (ETSU-R-97) and updated in 2013. A series of computer-based prediction models have been prepared to quantify the potential turbine noise level associated with the operational phase of the proposed development on the receiving environment. I am satisfied that the guidance and standards used for assessment are relevant and represent best practice at the time of writing this report

10.11.15. The assessment has been undertaken for a turbine hub height of 121 m, a rotor diameter of 158 m and a tip height of 200 m over the top of foundation level, and the proposed locations of turbines. The prediction model excludes the existing Bellacorick windfarm as it is to be decommissioned. The model includes Oweninny Phase 1 and Phase 2 and it excludes other windfarms such as Sheskin WF and Sheskin South WF in accordance with IOAGPG guidance they were not required to be assessed for cumulative impact.

10.11.16. The planning condition for Oweninny Wind Farm Phase 1 and Phase 2 and the accompanying EIS has set a lower daytime threshold of 37.5 dB LA90,T when background noise levels are less than 30 dB and daytime threshold of 43 dB LA90,T or 5 dB above background noise level, whichever is the greater. According to the EIAR, these limits set a precedence for the receiving environment and will be adopted for the proposed development as they represent the most onerous criteria identified in a review which examined ‘Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)’ which proposes a daytime noise criterion of 45 dB(A) in ‘areas of low background

noise', and from reviewing various windfarm application where lower threshold of 40 or 43 dB is commonly adopted in planning conditions for similar developments that have been granted planning permission.

10.11.17. In summary, the operational noise limits proposed for the development are:

- 37.5 dB LA90,10min for daytime in quiet environments with typical background noise of less than 30 dB LA90,10min.
- 43 dB LA90,10min for daytime in environments with typical background noise greater than or equal to 30 dB LA90,10min or a maximum increase of 5 dB(A) above background noise (whichever is the higher); and
- 43 dB LA90,10min for night-time periods or a maximum increase of 5 dB(A) above background noise (whichever is the higher).

10.11.18. The derived turbine noise limits have been assigned to other NSLs which are deemed to be representative of the background noise levels at the nearby measurement locations. Locations in the vicinity of Oweninny Phase 1 and Phase 2 wind farms have specific turbine noise limits in place through relevant planning conditions. These limits are set out in table 13-13 of the EIAR.

10.11.19. Third parties raise concerns regarding noise impact (see section 10.11.1 above). With respect to the construction phase, I note the separation distance of the proposed development works to NSRs (see table in section 10.11.10 above) and I am satisfied having regard to predicted noise levels and mitigation measures that the proposed construction works will not have a significant effect on NSRs.

10.11.20. With respect to operational noise from the proposed turbines, the EIAR indicates that the predicted turbine noise levels are well below the criteria at all NSL's; the maximum predicted noise level from the proposed development in isolation is 34.9 dB LA90 at location R10. While some exceedances were predicted applying the omni-directional model i.e. assuming all noise sensitive locations are downwind of all turbines at the same time, at R74, R75 and R76. Following review of the directional noise predictions that the slight potential exceedances of the criteria noted in the omni-directional predictions at locations R74, R75 and R76 are no longer present. It is confirmed that the predicted cumulative turbine noise levels with

the proposed development are all below the turbine noise criterion curves, Appendix 13.7 refer. Specific noise mitigation measures are not therefore required.

10.11.21. Concerns around amplitude modulation is raised by third parties. The applicant advises that in the event that a complaint which indicates potential AM associated with turbine operation, the operator will employ a qualified acoustic consultant to assess the level of AM and evaluate different operational mitigation measures.

10.11.22. With regard to noise from the substation, I note that the predicted noise level from the operation of the substation at the nearest NSL (R72 at approximately 2.4 km) is 11 dB LAeq,T and would be inaudible at the nearest NSR and no significant impact on NSRs arise.

10.11.23. Concerns are raised regarding the devaluation of their property which will occur in part due to noise pollution. Concerns are raised with respect to sleep disturbance and concerns are raised with respect to impact of noise on fauna, such as badgers, and deer. These matters are considered in sections 10.5 and 10.6 respectively of this Inspector's Report.

10.11.24. Having reviewed the EIAR, and the Response to Submissions prepared by the applicant I am satisfied that the proposed development will not have a significant impact on noise sensitive receptors either individually or cumulatively with Oweninny Phase 1 and Phase 2 or the permitted hydrogen power plant in the vicinity.

**Material Assets, Cultural Heritage and the Landscape**

## 10.12. Material Assets

### 10.12.1. Issues Raised

10.12.2. Mayo Co.Co. considers the R312 Castlebar to Bellacorick road should not be used as a haul road due to its poor alignment and structural capacity. It advises the applicant to examine the feasibility of co-operating with adjoining renewable energy providers to develop single access point to all renewable energy projects for construction, supply and maintenance purposes.

10.12.3. TII request the Board consider the proposals with regard to Section 28 Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities'. Technical load assessment of structures along the haul route should be undertaken and mitigation measures should be implemented.

10.12.4. The Department of Defence and IAA request that conditions are attached in the event of a grant of permission, including the agreement an aeronautical obstacle warning light scheme. As-constructed coordinates including tip height details of each wind turbine are also requested.

10.12.5. Concerns raised by third parties include construction related traffic impact including road disruption and damage to roads, and radio and television interference.

10.12.6. **Context**

10.12.7. Chapter 16 of the EIAR deals with Material Assets, Aviation and Telecommunications. Chapter 17 deals with Traffic and Transportation and should be read in conjunction with appendix 17.1 Haul Swept Path Analysis Drawings, appendix 17.2 Traffic & Transport Assessment and appendix 3.1, Traffic Management Plan (Appendix A of the CEMP). Traffic and transportation impact has been assessed for the construction, operational, decommissioning phases of the proposed development. The chapters set out the relevant legislation and guidance, describes the baseline receiving environment and it identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of the impacts and assesses residual impacts.

10.12.8. Limitations relating to material assets are not expressly considered in the EIAR. I am satisfied however that there are no limitations in respect of Chapters 16 or 17.

10.12.9. The relevant aspects of the proposed development, in my opinion, are the dismantling and removal phase of the existing turbines (creation of waste), construction phase including installation of grid connection, erection of turbines, waste generation and increased traffic movement including abnormal loads and use of haul routes. An amenity route through the site to the existing Visitors Centre with access from a local road off the N59 is proposed. Two no. borrow pits and 5 no. peat deposition areas are also proposed as part of the development.

10.12.10. The proposed 110kV underground electrical cable from the proposed on-site electrical substation to the existing sub-station at Bellacorick includes 1 no. road crossing, by horizontal directional drilling (HDD), of the L52925. In addition, there will be a requirement for temporary modifications to public road infrastructure to facilitate the delivery of abnormal indivisible loads (AILs).

10.12.11. During the operational phase, there is potential for impacts on aviation, interference/disruption to telecommunications services and traffic arising from ongoing maintenance and monitoring programmes.

10.12.12. **Baseline**

10.12.13. With respect to aviation, the proposed wind farm is located in an area within class G airspace (uncontrolled) with a number of wind farms already operating in the area around the site of the proposed wind farm. The nearest significant airport to the proposed development is Ireland West Airport Knock, located approximately 48 kilometres southeast of the proposed wind farm site. Crossmolina Airfield, which is an airfield with a grass runway is located approximately 7 kilometres to the east of the proposed development. Other airstrips are located over 20km from the proposed development site.

10.12.14. With respect to telecommunication and following consultation with telecommunications service providers (detailed in Table 16-1 of the EIAR), it is stated that any transmission links or sites were constrained out of the site layout design with appropriate buffers to minimise potential impacts from the proposed development.

10.12.15. A gas pipeline passes near the proposed wind farm site and the grid connection cable will intersect the line of this. An existing similar 110kV underground cable crosses this gas pipeline in the same location. While there are some 110kV electricity lines within the EIAR study area it is also possible that there might be some underground electricity cables discovered during the proposed works.

10.12.16. With respect to traffic and transport, chapter 17 was prepared having regard to the 'Traffic and Transportation Assessment (TTA) Guidelines' (TII PE-PAV-02045 May 2014) and the 'Spatial Planning and National Roads Guidelines for Planning Authorities' (2012), among other guidance.

10.12.17. The site access to the development will be via the existing Oweninny Wind Farm Phase 1 site access on the northside of the N59. The existing access is a priority T-junction with existing “STOP” road marking and signage. Background traffic survey data was used to determine typical background traffic levels on the N59 and used to inform traffic forecasts during an assumed construction completion year of 2027.

10.12.18. The haul route for general construction materials by heavy goods vehicles (HGVs) was identified as via the N59 from the direction of Crossmolina or the Bangor Erris direction. In respect of the larger wind turbine components, a number of Abnormal Indivisible Load (AIL) Haul Routes were assessed, including from Port of Galway, Shannon Foynes Port and Killybegs Port. During the construction of Oweninny Phase 1 and 2, delivery was via Killybegs port, through Bundoran and onto Crossmolina. AIL convoy effects were assessed as moderate and temporary.

10.12.19. Traffic generation figures during construction are outlined in Table 17.1 and peak HGV volume is 143 HGVs one-way (including concrete pours). Excluding concrete pours, the peak construction HGV movements will be 81 HGV one-way per day and an average of 52 HGV movements one-way per day. At the peak construction on the Wind Farm site, a maximum of approximately 100-120 personnel are estimated.

10.12.20. In respect of AILs, the traffic movements associated with the AIL deliveries are summarised in EIAR Table 17-5 and maximum traffic volume is estimated to be 217 truckloads, which will travel at night and in either 3 or 5 vehicle convoys.

10.12.21. Junction modelling (excluding AIL routes) was undertaken. The analysis concluded that in all junction assessment scenarios, the site access junction on the N59 will operate with a good level of service with no noticeable delay at the junction.

10.12.22. **Likely Significant Effects**

Likely significant effects are set out in sections 16.4 and 17.4 of the EIAR and are summarised below.

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|

| | |
|---|---|
| **Do nothing** | Traffic & Transport, Aviation, Telecommunications & Services<br><br>There will be no potential for impact on aviation, telecommunications or other Material Assets. |
| **Construction** | Telecommunications & Services<br><br>Damaging an underground electricity cable or gas pipeline may have the potential to cause serious harm or death.<br><br>Damage to services may interrupt the local service provision.<br><br>Aviation<br><br>Dismantling existing turbines and the erection of turbines could impact on aviation safety.<br><br>Waste<br><br>The construction phase will have the potential to produce municipal waste, wastewater, and construction waste.<br><br>Traffic & Transport<br><br>The peak construction activities increase the background traffic volumes the most by 9%-10% and an associated percentage increase in HGV movements on the N59 of 4.5-4.6%, see Table EIAR 17-11. This impact of the peak traffic is of short duration, over 3 months with a temporary moderate negative effect on the road network. |
| **Operation** | Telecommunications & Services<br><br>Turbines can interfere with microwave communications link systems, as they can cause electro-magnetic interference and/or reflect and physically block microwave link signals.<br><br>Wind turbines have the potential to impact on delivery of telecommunication signals to the end users. |

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| | Aviation<br><br>Increased number of tall structures could impact on aviation safety.<br><br>Traffic & Transport<br><br>The development will generate a small volumes of traffic: between 8- 10 no. LV movements per day. |
| **Decommissioning** | Similar impacts to construction phase, in particular with potential to produce waste, including metal from turbines. The overall traffic associated with the decommissioning stage will be significantly less than that for the construction stage. |
| **Cumulative** | Other wind farms in the immediate vicinity such as Oweninny Wind Farm Phase 1 & 2, Sheskin windfarm, Sheskin South Wind Farm, Corvoderry Wind Farm and Oweninny Visitor Centre was considered. No potential cumulative impacts identified. Other applications undecided at the time of witing the EIAR include the Mayo Hydrogen project and Constant Energy OCGT and the EIAR states that they were not assessed as a cumulative development.<br><br>The Hydrogen project and the Sheskin South WF were subject to EIA, and both considered the Oweninny Phase 3 Windfarm, and have since the EIAR was written, been granted permission. The Constant Energy project (114MW gas fired power plant) (Mayo ref. 2360028) was not subject to EIA but included a transport report in the planning application documents which did not consider the Oweninny Phase 3 wind farm. I note however the report from the Road Design Office which had no objection, subject to conditions, to the proposed development. |

10.12.23. **Mitigation Measures**

Mitigation measures are set out in section 16.4 and section 17.5 of the EIAR and include those listed below.

| Effect | Mitigation Measure |
|---|---|
| **Visibility of tall structures - aviation** | The proposed development will require certain lighting requirements for tall structures. The details for this lighting will be agreed with the Irish Aviation Authority and will be applied to the turbines and met mast.<br>The final locations and dimensions of each turbine will be mapped and provided to the local authority and stakeholders (such as the Irish Aviation Authority) prior to erection to ensure that maps and databases are up to date for flight navigation |
| **Telecommunications interference/disruption** | The wind farm layout has been designed to avoid any impacts to the telecommunications links in the area and will be informed by a confirmatory survey to verify all existing underground telecommunication services.<br>Digging around existing services, if present, will be carried out by hand to minimise the potential for accidental damage.<br>The developer will sign an agreement prior to construction to commit to restoring service to any end users that may have their service disrupted as a result of the proposed development |
| **Waste disposal/treatment** | Segregation of waste will be carried on site to maximise the potential for waste recycling and minimise any potential for impacts on waste services.<br>A licensed waste collector will be used to remove any waste that does occur on site. |

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| **Interference with gas pipeline** | This will be crossed by the proposed grid connection cable using a flatbed formation |
| **Traffic Impact/ traffic volumes** | A Construction Traffic Management Plan (TMP), Appendix A of the CEMP, will be implemented to ensure that traffic impacts are minimised during this phase.<br><br>All available resources within the existing site will be used to reduce the requirement for importation of materials to site.<br><br>Excavation of stone material from the borrow pits within the Wind Farm site to provide construction material will reduce the HGV volumes.<br><br>During the days for the concrete pours all other construction HGVs will be limited to essential deliveries and / programmed to occur on other days of the construction programme.<br><br>The proposed methodology for the cable laid within the public road will be by Hydraulic Directional Drilling (HDD).<br><br>Pre-construction and post-construction surveys on the N59, with reinstatement works as may be necessary and attributable to windfarm effects. |

10.12.24. **Residual Impact**

10.12.25. It is anticipated that there will be no impact to aviation or telecommunications during the construction and operational phases following the implementation of the mitigation measures described above. There will be a temporary moderate negative effect on the national road network. In respect of the AIL haulage, there will be moderate and temporary on the days / nights of the convoys. There will be no significant residual effects during the operation stage

10.12.26. **Assessment of Direct and Indirect Effects: Material Assets**

10.12.27. TII require the Board to consider the access proposals to the N59, national road in the context of national policy, and the intensification of use that might arise. TII require consultation with the relevant road management company to obtain necessary consents for Abnormal Indivisible Loads (AILs) haul routes. TII further require that mitigation measures are included as conditions. TII raised concern that no technical load assessment was undertaken and consider that a full assessment of all structure on the national road network along the haul route should be undertaken. The applicant in response stated the should the AILs be identified as abnormal in weight, following procurement, then all structures on the haul route will be checked to confirm the capacity to accommodate the AILs. A condition to this effect is attached for the Board's consideration.

10.12.28. I note Mayo County Council's Chief Executive's Report which states that the Road Design Department consider that subject to the mitigation measures in the EIAR the proposed development will not have a significant impact on the road's infrastructure or on traffic safety in the area. It is also stated that the use of the R312 Castlebar to Bellacorick road as a haul road should not be permitted due to its poor alignment and structural capacity. This concern was addressed by the applicant, in its Response to Submissions wherein it is stated that the haul routes are via the N59 only, although the EIAR is less specific, reference is made using national roads as far as possible in the TMP. A condition requiring agreement of haul route with planning authority and other organisations as required is attached for the Board's consideration.

10.12.29. During construction, the peak construction activities increase the background traffic volumes by a maximum of 9%-10% and an associated percentage increase in HGV movements on the N59 of 4.5-4.6%. This impact of the peak traffic is of short duration with a temporary moderate negative effect on the road network. The EIAR finds that the impact of transporting the AILs to the site will be moderate and temporary in nature and the various route options assessed for AIL transport are viable options having undergone swept analysis, with the chosen route to be decided subject of structural capacity assessment.

10.12.30. The review of the cumulative developments indicates Oweninny Wind Farm Visitor Centre will have cumulative traffic during the operational phase of the Wind Farm. The effect will be slight due to the volume of visitors generated by the Visitor Centre. With respect TII's concerns regarding the access point onto a national road; the proposed development will utilise an existing access previously used for the Oweninny Wind Farm Phase 1 and no works are required to accommodate the movements of construction related traffic, including AIL's. Operational traffic impacts are assessed as being imperceptible on the N59.

10.12.31. Other wind farms in the immediate vicinity such as Oweninny Wind Farm Phase 1 & 2, Sheskin windfarm, Sheskin South Wind Farm, Corvoderry Wind Farm and Oweninny Visitor Centre were considered in the EIAR. No potential cumulative impacts were identified. Other applications undecided at the time of witing the EIAR include the Mayo Hydrogen project and Constant Energy OCGT and the EIAR states that they were not assessed as a cumulative development. Since the subject application was received, the Hydrogen project and the Sheskin South WF which were subject to EIA, been granted permission and I noted the respective EIARs considered the Oweninny Phase 3 Windfarm. The Constant Energy project (114MW gas fired power plant) (Mayo ref. 2360028) was not subject to EIA but included a transport report which concluded that the project would have an imperceptible impact on link capacity – which includes the N59. Having regard to the forgoing, I am satisfied that the proposed development will not have a significant cumulative impact on traffic and transportation.

10.12.32. I note the concerns raised with regard to potential impacts of material assets associated with the proposed development. I have had full regard to these concerns, and I am satisfied that the applicant has fully considered these matters. I am satisfied that the conclusions of the EIAR in terms of impacts of traffic and transport, aviation, telecommunications and other services in the context of material assets are acceptable. I am satisfied, subject to the inclusion of appropriate measures as discussed above and any recommended planning conditions, that the development would not have any significant adverse effects on traffic and transport and no significant residual impacts are likely to arise.

## 10.13. Cultural Heritage

### 10.13.1. Issues Raised

10.13.2. The Development Applications Unit of the Department of Housing, Local Government and Heritage state that it has reviewed the EIAR and is broadly in agreement with the findings in relation to Archaeology and Cultural Heritage. It did however raise concern that the study area of the Archaeological Impact Assessment was not of sufficient size on the wider archaeological landscape and sought additional information in this regard and further states that Chapter 18 does not discuss or evaluate the potential cumulative impact of the proposed development to the archaeological and cultural heritage environment. Conditions to be included in a grant of permission are set out.

10.13.3. The MCC Chief Executive Report states that the MCC archaeologist has no objection to the proposed development and recommends archaeological conditions.

### 10.13.4. Context

10.13.5. Chapter 18 of the EIAR deals with archaeology, architectural and cultural heritage and was prepared by IAC Archaeology, and should be read in conjunction with Appendices 18.1-18.7, which includes details of Sites and Monuments Record (SMR), Record of Monuments and Places (RMP) and architectural sites in the Study Area. It is based on desktop and field survey. An impact assessment and a mitigation strategy have been prepared. The applicant's Response to Submissions is also relevant as it addresses the cultural heritage concerns raised by the Department.

### 10.13.6. Baseline

10.13.7. The study area was defined as an area measuring 2km from the proposed turbines, refer to Appendix 8.7 for Figures 18.1-18.4 which include the study area boundary and the location of architectural and archaeological sites. There are two recorded monuments within the overall project redline boundary, a ringfort (MA028-007), which is located c. 142m northeast of a proposed access route, within an area of worked peat, and a court tomb (MA028-001), is located c. 570m west of proposed Turbine 11. A further five archaeological sites are located within the 2km study area,

all of which are recorded monuments. One structure, Bellacorick Bridge, listed in the NIAH is located within the study area and is c. 1.96km to the nearest proposed turbine. There are no protected structures located within the study area.

10.13.8. As stated above, the study area was extended to 5km of the proposed development in response to the concerns raised by the Development Applications Unit. There are 16 recorded archaeological sites located between 2 and 5km of the proposed turbines, some of which are located in groups. These are listed in Table 12.3 of the applicant's 'Response to Submissions'.

10.13.9. No previously unknown features of archaeological significance were identified during the field inspection. While bogs are generally considered to be of high archaeological potential, large areas of the bog have been subject to peat extraction, which is likely to have impacted any archaeological features that may have been preserved within the bog.

10.13.10. A total of 83 Trial Pits were excavated across the site as part of the Site Investigation works. A single Trial Pit (TP37) contained pieces of worked wood, which may indicate an area of archaeological interest is located outside the footprint of proposed infrastructure.

10.13.11. **Likely Significant Effects**

Likely significant effects are set out in sections 18.5 of the EIAR and are summarised below.

| **Project Phase** | **Potential Direct, Indirect and Cumulative Effects** |
|---|---|
| **Do nothing** | No impact arising. |
| **Construction** | No direct effects are predicted for UNESCO World Heritage Sties, National Monuments, Recorded Monuments or known archaeological sites. However, the potential exists for the development area to contain unrecorded sub-surface sites and artefacts. |
| **Operation** | Potential indirect negative impacts may occur in relation to the setting on monuments; no significant impacts are likely. |

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| **Decommissioning** | No impact arising. |
| **Cumulative** | Potential cumulative impacts considered include Phase 1 and 3 of the Oweninny Wind Farm, Sheskin Wind Farms, and proposed Kilsallagh Wind Farm among others, and the nearby proposed hydrogen plant. Cumulative impacts, given the distance of separation between the 23 recorded monuments within the 5km and the proposed Phase 3 turbines, are not deemed to be greater than those minor indirect impacts already identified. |

10.13.12. **Mitigation Measures**

Mitigation measures are set out in section 18.6 of the EIAR and include those listed below.

| Effect | Mitigation Measure |
|---|---|
| **Potential effects to sub-surface archaeology may arise.** | Mitigation measures include archaeological monitoring of all stripping of topsoil/peat across the proposed development area. Should any features of archaeological potential be discovered the DHLGH will be informed and archaeological excavation (preservation by record) or in-situ will be required. Any further mitigation, such as preservation by record, will require a licence and approval from the DHLGH. |

10.13.13. **Residual Impacts**

There will be no significant residual impacts on the archaeological, architectural or cultural heritage resource. This is due to the fact that any archaeological remains that are encountered during the course of monitoring will be subject to preservation by record.

10.13.14. **Assessment of Direct and Indirect Effects: Cultural Heritage**

10.13.15. The Department of Housing, Local Government and Heritage, although broadly in agreement with the findings in relation to Archaeology and Cultural Heritage, considered the study area of the Archaeological Impact Assessment was of insufficient size. The response to submissions by the applicant considered the impact on additional recorded archaeological sites between 2-5km. Using the Theoretical Zones of Visibility, the assessment concludes that impact is neutral due to the fact there is no visibility predicted within the TZV mapping, or that the archaeological sites have no surface expression or are surrounded by existing commercial forestry.

10.13.16. Mayo County Council Chief Executive's report does not raise any objection with respect to archaeological impact subject to mitigation measures. It does however state that there are 3 no. RMP on site and 1 no. SMR within the site. I am satisfied, having consulted the EIAR and the National Monuments Service, Historic Environment Viewer, that there are 2 recorded monuments (RMP) on site, a court tomb (MA028-001) and a cist (MA027-003) and no site and monument (SMR) on the site.

10.13.17. There are no predicted impacts to the recorded heritage resources during the construction phase. However, the potential exists for the development area to contain unrecorded sub-surface sites and artefacts. Mitigation measures include construction stage monitoring of all elements of the proposed development. Should any features of archaeological potential be discovered the DHLGH will be informed and archaeological excavation (preservation by record) or in-situ will be required. No protected structures are located within or proximate to the site. The one NIAH structure in the vicinity of the site, Bellacorick Bridge, will not be directly affected by the development.

10.13.18. I note that in the case of townland boundaries, which are important cultural heritage features, there is no physical boundary in many cases, and given the presence of bog, any boundaries are considered to be more recently formed in the 19th Century.

10.13.19. Having regard to the absence of known features of archaeological within the footprint of the development and the distance of proposed works to these features and archaeological features outside the site boundary, I am satisfied that

archaeological mitigation measures is sufficient to prevent any significant adverse effects on archaeology. There are no predicted operational impacts to the setting of recorded archaeological monitoring due to the distance of separation from the proposed turbines and the relevant sites. No potential cumulative impacts have been identified upon the archaeological, architectural or cultural heritage resource as a result of the proposed development. In summary, I am satisfied that the proposed development would not give rise to significant direct, indirect or cumulative effects on cultural heritage.

## 10.14. Landscape & Visual Impact

### 10.14.1. Issues Raised

10.14.2. A number of third-party submissions raise concerns about the visual impact of the proposed development with reference to cumulative, residential, tourism, scenic views and heritage impacts.

10.14.3. The MCC Chief Executive's Report states that the proposal would have a visual impact from roads in the immediate vicinity and from residential properties in locations where screening is not available. It considers that direct effects on landscape character are highly localised with visual impacts ranging from imperceptible to moderate significance.

### 10.14.4. Context

10.14.5. Chapter 15 of the EIAR deals with Landscape and Visual Impact. The Landscape and Visual Impact Assessment report was prepared by Macroworks. This chapter should be read in conjunction with Appendices 15.1, Visual Impact Assessment at Selected View Points, 15.2 Viewpoint Locations, 15.3, Zone of Theoretical Visibility Maps and 15.4 Photomontages which includes photomontages of 24 no. viewpoints, including views of cumulative windfarm developments. The applicant's Response to Submissions is also relevant.

10.14.6. The assessment methodology includes a desk study, site and surrounding area inspection, and the preparation and evaluation of photomontages. The assessment was informed by best practice including the Guidelines for Landscape

and Visual Impact Assessment (Landscape Institute & IEMA., UK 2013) and Visual Representation of Wind Farms: Version 2.2 (Scottish Natural Heritage, 2017).

10.14.7. Limitations are not expressly considered in the EIAR. I am satisfied that there are no limitations in respect of the assessment of landscape and visual impact.

10.14.8. The Mayo County Development Plan (MCDP) 2022-2028 (Volume 4) includes a Landscape Appraisal for County Mayo, according to which the site is in Area F - North Mayo Inland Bog Basin which is described as a large bog area of 300sq km surrounded to the north, west and south by mountains giving it the appearance of a lowland basin. Smooth terrain allows vistas over long distance. As a result, it is stated, development can have a disproportionate visual impact in such terrain, due to an inherent inability to be absorbed, physically or visually.

10.14.9. Section 3 of the Landscape Appraisal deals with areas designated as 'vulnerable' and includes the 'shorelines' and 'banks' of Lough Dahybaun and the Owenmore River and Oweninny River. Policy 3.1(b) states that – "…*development in the environs of these vulnerable areas must be shown not to impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites*."

10.14.10. Peat bogs and watercourses are among the areas designated as 'sensitive'. Policy 3.2(b) states these areas have a distinctive, homogenous character, dominated by natural processes. Applications for development in these areas must demonstrate a very high standard of site selection, siting layout, selection of materials and finishes may also be required to consider ecological, archaeological, water quality and noise factors insofar as it affects the preservation of the amenities of the area.

10.14.11. The site is located within Policy Area 3, Uplands, moors, heath or bogs. The landscape Appraisal contains a number of policies including Policies 15 and 16 which are relevant:

- Policy 15: *facilitate developments that have a locational requirement to be situated on elevated sites (e.g. telecommunications and wind energy*

*structures). It is necessary however to ensure that adverse visual impacts are avoided or mitigated wherever possible*.

- Policy 16: *Preserve from development any areas that have not already been subject to development, which have retained a dominantly undisturbed upland/moorland character.*

10.14.12. The Landscape Appraisal includes a Landscape Sensitivity Matrix for guidance in assessing proposals. It states that in Policy Area 3 windfarms have high potential to create adverse impacts on the existing landscape character.

10.14.13. Map 10.2 of the MCDP illustrates the scenic routes and scenic routes with designated views for County Mayo. Mayo County Council seeks to safeguard these routes from inappropriate development, which would detract from the enjoyment of Mayo's outstanding landscape.

10.14.14. **Baseline**

10.14.15. Landscape baseline is described in section 15.3 of the EIAR. It includes reference to the relevant MCDP policies including relevant extracts from the Landscape Appraisal for Mayo. Figure 15.3 indicates Scenic Routes and Routes with Designated Views, extrapolated from the MCDP. The visual baseline is detailed in section 15.4. On the basis of a 'bald' topography, a zone of theoretical visibility for the proposed wind farm is indicated in EIAR Figure 15.6, using a radius of 20km.

10.14.16. The proposed site is located within the central portion of the Bellacorick Basin, a vast, predominantly flat, peatland area. The study area encompasses the entirety of the natural extents of the Basin, which are defined by the upland Nephin Beg range to the north, west and south. The range wraps around the site throughout the northern, western and southern quarters and divides the inland bog context from coastal context of the study area in these directions.

10.14.17. The principle watercourses within the study area include the Owenmore which drains via a valley from the Bellacorick basin through the upland spine to the western coast, and the River Moy. There are numerous loughs in the area. The largest is Lough Conn, while Lough Dahybaun is on the site. The principle transport route is the N59 which adjoins the site to the south and the R312 which branches from the N59 to the south of the site. The Western Way hiking trail is located to the west of

the site and passes along the N59 where it continues along the R312. Natural heritage sites in the vicinity of the site include Knockmoyle Nature Reserve, Owenboy Nature Reserve and Wild Nephin National Park.

10.14.18. The site itself comprises largely cutover bog, the vast majority of which was harvested commercially for power generation at the former Bellacorick peat fired power station; watercourses, both natural and artificial; lakes, a new visitor centre and an existing windfarm and associated infrastructure comprising 21 turbines. These turbines are considerably smaller than those proposed.

10.14.19. There are a number of windfarm developments with many turbines close to and further afield from the site boundary to the west and north-west. Wind energy development has become one of the defining features of the central study area in recent decades. There are also large tracts of commercial conifer plantation within and around the bog particularly within the lower slopes of the Nephin range to the west. The baseline assessment additionally notes that there is a very low density of population, however there are numerous smaller clusters of residences, with larger populations centre located within the 10-20km distance.

10.14.20. Arising from the ZTV maps there are two main zones of visibility characteristics corresponding to different landscape type. The first is through the central study area, which features a high degree of full (17-18 turbines) visibility and results in a semi-circular area extending 10km out from the centre of study area to the north, west, and south. The second large visibility zone extends to the east and ripples across the drumlin landscape. Other areas outside of these zones of visibility generally indicate patchy visibility. The maps represent visibility within a bare earth landscape and so depict a worst-case scenario with none of the screening effects of vegetation being taken into account. The results of the ZTV analysis provide a basis for the selection of Viewshed Reference Points (VRP's), referenced as VP1-VP24.

10.14.21. Cumulative wind energy developments that are not yet constructed are only shown on the cumulative wireline images and not within the photomontage views, in accordance with the Visual Representation of Wind Farms (2017) guidelines.

10.14.22. Visual receptors are described in EIAR section 15.4.2 and comprise centres of population and houses, transport routes, amenity and heritage locations, and views of recognised scenic value – which are set out in Table 15.6 of the EIAR.

10.14.23. **Likely Significant Effects**

General potential significant effects are set out in sections 15.5 of the EIAR, while the magnitude of impact is dealt with in Section 15.7.2. Likely significant effects are set out below.

| **Project Phase** | **Potential Direct, Indirect and Cumulative Effects** |
|---|---|
| **Do nothing** | No impact arising. |
| **Construction** | Landscape effects –earthworks including grid connection, internal roads infrastructure and temp. construction compounds with limited and short-term direct effects and no landscape effects on the wider study area.<br><br>Short term, slight negative visual effects are predicted to arise from the erection of turbines, mast and substation. |
| **Operation** | <u>Landscape:</u><br>• Irreversible physical effects on sensitive landscape features.<br>• Disruption of existing landuse patterns.<br>• Incongruous change to areas of sensitive landscape character.<br><br><u>Visual:</u><br>• A combination of visual and spatial dominance, as seen from sensitive receptor locations.<br>• Visual clutter and ambiguity, as seen from highly sensitive receptor locations. |
| **Decommissioning** | Similar to those occurring during construction, with short term effects arising during dismantling with slight, negative visual effects. |
| **Cumulative** | Potential cumulative impacts considered include Phase 1 and 3 of the Oweninny Wind Farm, Sheskin Wind Farms, and proposed Kilsallagh Wind Farm among others, and |

| | |
|---|---|
| | the nearby proposed hydrogen plant. Cumulative impacts, given the distance of separation between the 23 recorded monuments within the 5km and the proposed Phase 3 turbines, are not deemed to be greater than those minor indirect impacts already identified. |

10.14.24. **Mitigation Measures**

Mitigation measures are set out in sections 15.6 and it is noted that it is not generally feasible to screen turbines from view using on-site measures.

| **Effect** | **Mitigation Measure** |
|---|---|
| **Landscape and visual effects** | Design mitigation measures include<br>• Siting the development in a vast cutaway peatland area where wind turbines are already a strongly characteristic landscape feature;<br>• The buffering of residential receptors by having a min. separation distance greater than 1km from local residences. |

10.14.25. **Residual Effects**

10.14.26. Residual landscape effects are considered in section 15.7 of the EIAR. The sensitivity of the Central Study Area within 5km from the nearest turbine comprising low basin area comprising bog, forestry, windfarms, N59 and Lough Dayhbaun is considered to be medium-low. The sensitivity of the Wider Study Area, 5km-20km from the nearest turbine comprising a variety of landscapes including Nephin Beg range, upland to coastal, drumlin areas and loughs is considered to be medium, but containing some discrete area of high or very high sensitivity particularly along the coastal side of the Nephin range.

10.14.27. The impact of the development on the physical landscape is considered to have a modest impact as the proposed infrastructure will not have an extensive physical footprint.

10.14.28. With respect to landscape character impact, the EIAR draws attention to the extensive existing windfarms throughout the central study area which are considered to contribute in a substantial way to the prevalent landscape character of the peatland basin. The effect of the proposed development on the landscape is considered to be an intensification of an established use, and the location of the proposed development within the basin area is considered to be in keeping with current land use patterns, albeit an intensification of wind farm infrastructure.

10.14.29. The EIAR notes that the lifespan of the project is 30 years, after which time it is likely to be dismantled and the landscape reinstated to prevailing conditions. However, the proposed substation will remain in-situ after decommissioning.

10.14.30. The magnitude of landscape impact is deemed to be high-medium in the central study area (within 5km of the site), beyond which the impact on landscape character is deemed to be medium reducing at increasing distances.

10.14.31. For the site itself the significance of landscape impact is deemed to be substantial – moderate whilst for the remainder of the central study area the significance of landscape impact is judged to be moderate. Landscape impact significance will reduce to slight and imperceptible at increasing distances thereafter, even at higher sensitivity landscape features contained within the outer study area.

10.14.32. Residual visual effects are considered in section 15.8 of the EIAR and is supplemented by Appendix 15.1 of the EIAR, Visual Impact Assessment at Selected Viewpoints and Appendix 15.4 Photomontages. Of the 24 Viewpoints (VP) assessed 10 of the viewpoints are considered to have long-term moderate or moderate-slight negative significance of visual effect. These are located within or very close to 10km of the site. These are:

- VP2 to the north-west, 8km to the nearest turbine.
- VP3 to the north, 4.5km to the nearest turbine.
- VP9 to the east 1.9km to the nearest turbine.
- V11 to the east, 2.4km to the nearest turbine

- VP13 to the southwest, 3.9km to the nearest turbine.
- VP14 to the southwest, 3.6km to the nearest turbine.
- VP17 to the east, 10.7km to the nearest turbine.
- VP18 to the south-east, 5.8km to the nearest turbine.
- VP19 to the south-east, 4.1km to the nearest turbine.
- VP20 to the south-east, 5.1km to the nearest turbine.

4 of the viewpoints are considered to have a long-term substantial-moderate negative visual effect. These are located within 5km of the proposed development and are:

- VP5 to the east, 1.9km to the nearest turbine.
- V12 to the east, 2.6km to the nearest turbine.
- VP15 to the south, 2.8km to the nearest turbine.
- VP16 to the south, 2.9km to the nearest turbine.

The remaining 10 viewpoints are assessed as either slight or imperceptible significance of visual effect.

10.14.33. In terms of local community views in the central study area, impacts are best represented by VP5, VP9, VP11, VP12, VP13, VP15, VP16, four of which are assessed as having substantial-moderate effect. VP5 and VP12 (both considered to be substantial-moderate) are referenced as having clear views of turbines having regard to proximity and ground levels. Viewpoints from settlements and settled area in the wider study area are best represented by VP3, VP7, VP17 and VP18 and with the exception of VP7 are considered to be moderate-slight effect.

10.14.34. Viewpoints from scenic designations include VP4, VP19, VP20, VP22 and VP23. There are no clear views from VP4 (western shores of Carrowmore Lake) VP19 and VP20 are taken along the Western Way and are considered to have moderate-slight impact. VP22 is taken from the scenic route east of Killala to the north-east of the site and is considered to have imperceptible-neutral views. VP23 is taken from the scenic route east of Lough Conn and is considered to have slight-imperceptible impact. The summit of Nephin (VP24) is not a designated view but was

assessed for impact. The proposed development was considered to form part of the collection of turbines that already exist at the Bellacorick Basin and visual impact was considered to be slight.

10.14.35. Views from Major Routes and Western Way Walking Route (road sections) are represented by VP13, VP14, VP15 and VP16 along the N59 and VP19 along the R312 and VP20 along a local road. Views along the N59 and the road section of the Western Way are considered to be either substantial-moderate, or moderate-slight. Views from the Western Way Walking Route (non-road sections) are represented by VP1, VP2, VP6 and VP8, all located to the north or east of the proposed development with either slight or moderate-slight visual effects.

Cumulatively, existing and permitted windfarm developments are assessed in the LVIA. It is considered that the proposed development will not give rise to significant cumulative impacts because the cutaway peatland of the cast Bellacorck Basin is already characterised by large-scale wind energy development.

10.14.36. **Assessment of Direct and Indirect Effects: Landscape & Visual Impact**

10.14.37. Having regard to the detailed LVIA carried out and to my inspection of the site, I am generally satisfied with the conclusions drawing in the LVIA with regard to landscape and visual effects. The locations chosen for photomontages are representative of likely views of the wind farm from the local and wider area, including from sensitive areas/locations.

10.14.38. The proposed development site is located within the central portion of the Bellacorick Basin, a vast, predominantly flat, peatland area. The area is characterised predominately by cutover bog, existing windfarm development, forestry, lakes and rivers. The topography of the proposed windfarm site ranges from c.75 to 130m AOD. The proposed turbines are located between 80mOD and 100mOD. A more detailed description of the site and study area are set out above in section 2.0 of this Inspector's report above and in section 15.3 of the EIAR.

10.14.39. MCC's Landscape Appraisal for County Mayo and Area F, the North Mayo Inland Bog Basin, is somewhat dated insofar as it refers to 'visually prominent' Bellacorick power station. It also fails to take account of the Sheskin and Oweninny windfarms which are dominant features in the landscape. The site includes areas

which are designated as ‘vulnerable’ (i.e. Lough Dahybaun) and ‘sensitive’ (e.g. peat bogs and watercourses). According to the Appraisal, the site is located within Policy Area 3. It is a policy to facilitate developments that have a locational requirement to be situated on elevated sites, e.g. wind energy structures and to ensure that adverse visual impacts are avoided or mitigated wherever possible. Policy 16 seeks to preserve from development any areas that have not already been subject to development, which have retained a dominantly undisturbed upland/moorland character.

10.14.40. The proposed windfarm will extend the existing windfarm development to the east of the Oweninny Phase 1 and Phase 2 resulting in an intensification and extension of existing windfarm development. I agree with the EIAR that the magnitude of landscape impact is deemed to be high-medium in the central study area (within 5km of the site), beyond which the impact on landscape character is deemed to be medium reducing at increasing distances from the central study area. Having regard to the established windfarm developments in the area and the flat and low-lying nature of the landscape I am satisfied that the proposed development will not have a significant change to landscape character of the area.

10.14.41. In terms of visual effects, I am also generally satisfied that the proposed development by virtue of the location of the development in the Bellacorick Bog basin, general flat topography, orientation and screening, will not have any significant adverse effects on scenic routes, designated views, recreational routes or tourist designations, viewing points or transport routes.

10.14.42. MCC in its submissions notes that the visual analysis is from a daylight perspective and that there is no indication what, if any, the proposal in isolation or cumulatively of red flashing warning lights on top of the turbines will have on the environment or human population. In response to this concern, the applicant states that whilst the red flashing aviation lights that are placed on the hubs of selected turbines will be visible from the ground in the same manner as the existing wind farms in the area, they are not a bright source of light that would illuminate the landscape beneath them. Having regard to MCC’s designation of the site as suitable for wind turbines, the fact that 22 no. turbines will be removed as part of the proposed development, and given the lights are necessary from an aviation and safety perspective and in light of the applicant’s response, I am satisfied that the red

flashing lights will not have a detrimental impact on the environment or human population.

10.14.43. The construction phase, and to a lesser extent the decommissioning stage, will have minor and temporary landscape and visual impacts such as movement of heavy vehicles, temporary construction compounds, possibly a minor loss of roadside and trackside vegetation.

10.14.44. The proposed substation, c.135m c 75m, with associated buildings and structures, is to be located to the south-west corner of the proposed development site and c. 600m north of Lough Dahybaun. With areas of plantation forestry between it and the nearest receptors within the public realm, being the N59 c. 2km to the south, I am satisfied that the proposed substation will not a significant visual or landscape impact.

10.14.45. There will be one permanent anemometry mast installed as part of the proposed development. This will be 120m tall and of a fine lattice construction. I concur with the EIAR that it will be perceived as a very modest piece of ancillary infrastructure.

10.14.46. I note that third parties raise concerns with regard to landscape impact and object to turbines forming the dominant element in the landscape. One observer who indicated that their house is located in Formoyle, to the east of the proposed development, requested that T12, T13, T14, T15, T16 and T17 are removed, in particular T15 and T16 as they are too close to their dwelling house. Further objections that no visual aid was erected to show impact of turbines.

10.14.47. With respect to third-party concerns that visual aids were not provided on site, this matter was adequately responded to by the applicant in the response to submissions, and I accept that photomontages are appropriate for the purposes of visual assessment purposes.

10.14.48. The windfarm development, extending eastwards, will undoubtedly alter views from the east, south-east, south and the south-west, in particular for residents in the central study area, within 5km of the proposed development. I note the nearest residential property is c 1.1km (Noise Sensitive Receptor R10) from a turbine (T16), however, views from this residence are restricted due to a rise in landform immediately west of the property which restricts the view towards the development

site. Notwithstanding, I am of the opinion that the proposed easternmost turbines will have a significant visual impact on the vista presently enjoyed by residents along/off the L5292, best illustrated by VP9 and VP12 in the townlands of Formoyle, Corvoderry and Shanvolahan and the L5160 in the townland of Doobehy. I note however that the site is designated as suitable for on-shore wind energy development, as 'Priority Area, Tier 1' in the Renewable Energy Strategy for County Mayo, and in my opinion the proposed turbines will be read in conjunction with existing wind turbines in the area and as an extension to an existing wind farm development. On balance, I am of the opinion that impact on landscape of visual effects are not reasons to refuse permission.

## 10.15. Risks Associated with Major Accidents and/or Disasters

### 10.15.1. Introduction

Section 6.4.4 of the EIAR considers the potential for major accidents and disasters of the proposed development. This topic has interactions with other chapters of the EIAR. The vulnerability of the project to risk of major accidents and/or disasters, such as extreme flooding or peat/soil instability, is discussed in Chapter 9 (Soils and Geology), Chapter 10 (Hydrogeology) and Chapter 11 (Hydrology and Water Quality). The potential for climate change to impact future flood events is considered as part of the site-specific Flood Risk Assessment (FRA) in Chapter 11 and in Appendix 11.1.

### 10.15.2. Existing Environment

The area like much of the island is subject to severe weather conditions from time to time, in particular rain, wind and storms, may pose a potential risk.

The proposed development will not come under the COMAH Regulations. The Board will note that since the application for the proposed development was lodged, that permission has been granted by Mayo County Council for 114 MW gas fired peaking power plant, which will be capable of running on a mix of natural gas and hydrogen, (MCC reg. ref. 2360028) and is to be located approx. 750 from the site and is the subject of COMAH Regulations.

10.15.3. **Likely Significant Effects**

| Project Phase | Potential Direct, Indirect and Cumulative Effects |
|---|---|
| **Do nothing** | No impact arising. |
| **Construction** | Construction activities carry an inherent risk of accident. However, the risk of such impacts are temporary and short-term and would be controlled as part of the standard and best practice construction measures.<br><br>Soil erosion due to flooding: A flood Risk Assessment was undertaken for the site of the proposed substation and no significant risk was identified.<br><br>Peat collapse: Peat stability has been assigned a 'low' hazard ranking and any potential collapse will be localised to each individual excavation.<br><br>The risk of pollution to local watercourses from the accidental release of oils, fuel and other contaminants would be detrimental to water quality, fauna and flora. |
| **Operation** | Reference is made in the EIAR to a remote possibility of injury to people from flying fragments of ice or from a damaged blades.<br><br>Reference is also made to a potential risk of a fire or turbine collapse. |
| **Decommissioning** | Similar to construction related effects. |
| **Cumulative** | None identified/arising. |

10.15.4. **Mitigation Measures**

| Effect | Mitigation Measure |
|---|---|

| | |
|---|---|
| **Risk to persons during construction and operation** | Section 3.10 of the EIAR deals with Health and Safety during construction and this section should be read in conjunction with the CEMP. The CEMP outlines safety procedures that will help reduce the risks associated with the construction phase of the proposed development.<br><br>Rigorous safety checks are conducted on the turbines during design, construction, commissioning and operation to ensure the risks posed to staff, landowners and general public are negligible.<br><br>Turbines can be fitted with anti-vibration sensors, which will detect any imbalance caused by icing of the blades and prevent start-up.<br><br>Regular maintenance of the turbines will be carried out by the turbine manufacturer or appointed service company |
| **Fire or turbine collapse** | The risk of turbine collapse is very low and is mitigated by comprehensive turbine base design considerations, safety checks throughout the turbine installation process. |

10.15.5. **Residual Impacts**

Residual effects in respect of major accidents and/or disasters are not considered in the EIAR. I am satisfied however that subject to mitigation measures that there will be no significant residual effect as a result of the proposed development.

10.15.6. **Cumulative Impacts**

Residual effects in respect of major accidents and/or disasters are not considered in the EIAR. I am satisfied however that subject to mitigation measures that there will be no significant cumulative effects as a result of the proposed development.

10.15.7. **Assessment of Direct and Indirect Effects: Major Accidents and/or Disasters**

It is considered that the EIAR has adequately identified, described and assessed the direct and indirect effects of the proposed development accordance with the requirements of the EIA Directive.in respect of this topic across the environmental factors considered. Having regard to the information submitted with the application and subject to mitigation and monitoring measures, I am satisfied that the proposed development would not be likely give rise to significant adverse direct, indirect or cumulative impacts on the environment deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it.

### 10.16. Interaction of Effects

Chapter 19 of the EIAR deals with interactions. Interactions are identified in tabular form in Table 19.1 and key interactions for each environmental receptor is assessed in section 19.2 under relevant environmental factor headings. I am satisfied that all key interactions have been identified and that these have been adequately assessed in the EIAR and addressed in this Inspector's report.

### 10.17. Reasoned Conclusion on the Significant Effects

Having regard to the examination of environmental information contained above, and in particular to the EIAR and supplementary information provided by the developer, and to the submissions from the planning authority, prescribed bodies and third parties 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, and will be mitigated as follows:

- **Population & Human Health:**

Short term negative effects by way of noise, vibration, dust and traffic and short-term positive impacts on the local economy during construction. These negative impacts will be mitigated by a managed approach to construction as set out in CEMP and the Traffic Management Plan.

Long term negative direct and cumulative effects on landscape character and visual impacts in the immediate area will result from the proposed development. The proposed easternmost turbines will have a significant visual impact on the vista presently enjoyed by residents along/off the L5292, best illustrated by VP9 and VP12

in the townlands of Formoyle, Corvoderry and Shanvolahan and the L5160 in the townland of Doobehy. No specific mitigation measures are proposed as given the highly visible nature of the development it is not feasible to screen them from view. Some cumulative impacts will arise in particular with Owenniny Windfarm Phase 1 & 2 however the proposed turbines will be read in conjunction with existing wind turbines in the area and as an extension to an existing wind farm development.

There is potential for shadow flicker to occur at four sensitive receptors (73, 74, 75 & 76) which will be mitigated with automatic turbine shutdown to ensure that no sensitive receptors experience shadow flicker as a result of the proposed development.

- **Biodiversity**

The majority of habitat loss has been primarily restricted to cutover bog habitats of low ecological value resulting in the loss of c. 75ha of cutover bog. Mitigation measures include application of a Biodiversity Enhancement Plan which accompanied the EIAR and reinstatement where possible.

The proposed development site was found to provide important spawning and nursery habitat for crayfish, lamprey and salmon. The release of construction pollution and/or sediment into the watercourses has the potential to degrade water quality indirectly impacting these aquatic species and their habitats. Mitigation measures including those to control pollution/sedimentation and implementation of a surface water management plan.

There is potential for significant direct and indirect effect on bats, six active bat roosts sites were identified within the proposed development site including a rare Natterer's maternity roost. None of the roost buildings will be demolished as part of construction works and the proposed works will not result in the loss of any bat roosts. Notwithstanding, it is proposed to provide alternative bat roosting (in the form of a purpose-built bat house) to reduce risk to the local Natterer's bat population. Operational mitigation measures include turbine curtailment such as feathering of blades, increase cut-in speeds prior to and after sunset during Spring-Autumn months. Also, tall vegetation maintenance, bat activity surveillance, carcass search and directional sensor lighting at the substation site.

In terms of birds, that there are a number of likely construction phase effects arising including habitat loss or degradation and disturbance/displacement. Mitigation measures are proposed such as works outside breeding season and pre-construction breeding surveys.

- **Land, soil, water, air and climate**

The proposed development will result in the removal of large quantities of soil, subsoils and bedrock across the site and has potential to result in water, air and dust pollution, excavation collapse and peat slippage. The mitigation measures identified, including the Peat Management Plan, Construction Environmental Management Plan and the Surace Water Management Plan will mitigate risk and significant impacts.

In respect of water, potential indirect effects could arise due to an increase in runoff into receiving watercourses from sediment and soil erosion. In terms of mitigation a drainage system is to be put in place to control runoff and manage sediment transport during the construction please. Dedicated settlement ponds will be provided. Concrete containment measures and spillage avoidance measures will be employed to prevent concrete from entering the drainage system. Effects to the water environment will be mitigated by implementation of the Construction Environmental Management Plan and Surface Water Management Plan.

Regarding climate, the proposed development will have a long-term positive effect on climate. The supply of renewable electricity to the national grid will displace CO2 emissions otherwise used to generate electricity.

## 11.0 The Likely Significant Effects on a European Site

### 11.1. Introduction

The areas addressed in this section are as follows;

- Compliance with Articles 6(3) of the EU Habitats Directive
- Appropriate Assessment Screening Determination (See Appendix 1 of this Report)
- Appropriate Assessment Conclusions

11.2. **Compliance with Articles 6(3) of the EU Habitats Directive**

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.

11.3. **The Natura Impact Statement**

11.3.1. The application was accompanied by an NIS which describes the proposed development, the project site and the surrounding area. The NIS contained a Stage 1 Screening Assessment (Appendix 1) which concluded that a Stage 2 Appropriate Assessment was required. It concluded that;

> '…*in view of best scientific knowledge and in the absence of mitigation measures, potential likely significant effects from the proposed development cannot be ruled out for six of these European sites:*
>
> - *Lough Dahybaun SAC,*
> - *Owenduff/Nephin Bog Complex SAC,*
> - *River Moy SAC,*
> - *Lough Conn and Lough Cullin SPA*
> - *Killala Bay/Moy Estuary SPA and*
> - *Blacksod Bay/Broad Haven SPA*
>
> *It is therefore recommended that a Stage 2 assessment is required for these six Natura 2000 site".*

11.3.2. The submission (June 2023) of the Department of Housing, Local Government and Heritage (DHLGH) expressed concern that the Owenduff/Nephin Complex SPA was screened out from further consideration/assessment in the NIS as it considered that it is uncertain whether the proposed development is likely to have significant effects on this European Site. The DHLGH also raised concerns regarding impacts on Golden plover and on Merlin. It queried the methodology used to determine the

significance of collision mortality including the use of arbitrary thresholds and noted discrepancies in relation to collision risk calculations.

11.3.3. The Board shared the opinion of the DHLGH and sought additional information to adequately address the legal tests of the Appropriate Assessment (AA) process including in-combination effects with other projects in the area and considered that Owenduff/Nephin Complex SPA should be screened in because of uncertainty of effect and should be subject to further detailed analysis in the NIS.

11.3.4. Third party submissions raise the following issues:

- The application fails “on all three functions” citing the omission of Owenduff/Nephin Complex SPA when the test is that it is merely necessary to determine that there may be a significant effect.
- The AA screening is fundamentally flawed and it is not possible to make an informed submission on the NIS.
- Measures deemed to be mitigation measures by the applicant are not mitigation measures – not precise and not capable of removing all reasonable scientific doubt.
- References case law regarding the trigger for AA; mitigation measures; assessment cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt.
- References 6 no. European sites that have been significantly impacted by Phase 1 and 2 Oweninny Windfarm.
- Concern over impact on the ‘Formoyle Flush’, citing conservation objectives.

11.3.5. A revised AA Screening Report and NIS which screens in Owenduff/Nephin Complex SPA was submitted as additional information. The revised NIS describes the proposed development, the project site and the surrounding area and was prepared in line with current best practice. The revised NIS addressed the recommendation from the DHLGH that the Owenduff/ Nephin Complex SPA should be screened in for appropriate assessment to consider the implications in view of the conservation objectives of the site. Of note, is that at the time of assessment, only

first order site-specific conservation objectives (SSCO) with no set targets of objectives are available.

11.3.6. The applicant has 'adopted' site specific conservation targets and attributes from Connemara Bog Complex SPA as a proxy for Golden plover and Merlin in the NIS to present a scientific assessment of risks to the species of Owenduff/ Nephin Complex SPA. As per Appendix 3 of this Report, Dr. Maeve Flynn states that this is an acceptable and best practice approach in the absence of site-specific conservation objectives.

11.3.7. The updated AA screening report and NIS maintain that the special conservation interest (SCIs) for the Owenduff/Nephin Complex SPA are not associated with the Golden plover recorded at the proposed development site.

11.3.8. However, following a precautionary approach based on foraging ranges, the updated AA screening report concluded there is potential for ex-situ disturbance effects on both Golden plover and Merlin, if found breeding within or immediately adjacent to the proposed windfarm site, which would undermine the conservation objectives of the SPA.

11.3.9. The revised NIS contained a Stage 1 Screening Assessment (Appendix 1) which concluded that a Stage 2 Appropriate Assessment was required. It concluded that;

> "…*in view of best scientific knowledge and in the absence of mitigation measures, potential likely significant effects from the proposed development cannot be ruled out for seven of these European sites:*
>
> - *Lough Dahybaun SAC,*
> - *Owenduff/Nephin Bog Complex SAC*
> - *River Moy SAC,*
> - *Owenduff/Nephin Bog Complex SPA*
> - *Lough Conn and Lough Cullin SPA*
> - *Killala Bay/Moy Estuary SPA and*
> - *Blacksod Bay/Broad Haven SPA*

*It is therefore recommended that a Stage 2 assessment is required for these seven Natura 2000 sites."*

11.3.10. The revised NIS addresses this potential impact by mitigation in the form of disturbance management and a pre-construction survey are proposed. Additionally, the potential for in-combination effects was examined taking account of Sheskin South windfarm. The risk of collision causing mortality of significance to the population level was considered negligible.

11.3.11. The applicant's NIS outlined the methodology used for assessing potential impacts on the habitats and species within several European Sites that have the potential to be affected by the proposed development. It predicted the potential impacts for these sites and their conservation objectives, it suggested mitigation measures, assessed in-combination effects with other plans and projects and it identified any residual effects on the European sites and their conservation objectives. The report concluded that, subject to the recommended mitigation measures, no significant adverse effects are anticipated alone or in-combination with any other plans or projects on the seven identified European Sites arising from the proposed development.

11.3.12. Following the publication of significant information, which included the revised NIS (and AA Screening Report), a second submission was received from the DHLGH, (June 2024), which considered the applicant's response did not adequately address concerns relating to the appropriate reference population for determining the significance of collision mortality impacts. It also raised concerns regarding impacts on the breeding population of Golden plover.

11.3.13. Other than the DHLGH submission, no further submissions were received in respect of the significant additional information that raised Appropriate Assessment / NIS issues.

### 11.4. Expert Opinions (see Appendices 2 & 3 of this Report)

11.4.1. Following the submission by the applicant of a revised NIS which assessed and excluded potential adverse effects on site integrity of the Owenduff/ Nephin Complex SPA, An Bord Pleanála commissioned an independent expert examination of the further information and associated ornithological application material from Blackstaff

Ecology regarding impacts on birds including Golden plover. The Blackstaff Ecology Report is appended to this report (Appendix 2).

11.4.2. As noted above, the DHLGH raised matters relating to the Collision Risk Model (CRM) methodology, arbitrary thresholds used and discrepancies in relation to collision risk calculations. These issues are dealt with in section 10.7 (EIA – Ornithology section) and an analysis is not repeated here. In summary, I conclude that the applicant has addressed these issues to the satisfaction of the Inspectorate Ecologist, Dr. Maeve Flynn.

11.4.3. As stated above, the DHLGH observed, in a further submission on the revised NIS and further information, that concerns remained regarding impacts on the breeding population of Golden plover.

11.4.4. A further export report (technical note) was subsequently prepared by the Inspectorate Ecologist, Dr. Flynn, and is appended to this report (Appendix 3). The aim of the technical note was to consolidate the information provided in the various reports, taking account of the observations made by DHLGH to assist the Inspector and the Board in the consideration of impacts on Golden plover in both the EIA and AA of the proposed windfarm development.

11.4.5. It is necessary, in my opinion, to outline the following points extrapolated from the technical note (Appendix 3) as it relates to the Golden plover and the Owenduff/Nephin Complex SPA (refer to the technical note for references):

- Comprehensive bird surveys were undertaken to inform the appropriate assessment for Oweninny 3 windfarm.
- Golden plover was recorded on the proposed windfarm throughout the non-breeding/ wintering season. The Irish wintering population, estimated at 80,707 birds, originate from Iceland reaching peak numbers between months October to February in general. Data from the UK and Ireland shows numbers steadily increasing from mid-September.
- the breeding population of Golden plover is estimated at just 100 pairs and confined to the Northwest on areas of intact peatland. This species has undergone significant decline in its traditional breeding areas with breeding population declines over a long period of 84% documented.

- Based on accepted guidance breeding Golden plover has a core foraging range of 3km is provided, with maximum range of 11km.
- Quantitative information on foraging ranges of breeding Golden plover in Ireland is currently unavailable but studies from elsewhere have shown breeding adults to forage up to 4km from the nest.
- The boundary of the SPA is located c.3.8km southwest of the proposed development site at the closest point. The most recent surveys undertaken in the SPA show an apparently occupied territory (AOT) site located within a 1km square at the northwest corner of the SPA which would fall within the range of 4.5km to the proposed development site and within 6-8 km of nearest turbines.
- Based on the scientific information provided, it is reasonable to conclude that the development is likely outside of the core range of breeding Golden plover but within the parameters of the species maximum range.
- There are no records of the species at the proposed development site during the breeding season (April to July).
- Small numbers of Golden plover were recorded in mid-late September during surveys undertaken in years 2019-2022. This period is identified as within the breeding survey season covered by Tobin ecologists on behalf of the applicant though Dr. Flynn notes that the inclusion of September in the breeding bird survey methodology is outside of the timeframes normally followed for breeding birds (April – July) and outside that recommended in the Guidance followed and is more usually defined as being within autumn migration period and the non-breeding season for Vantage Point Surveys.
- Addressing the concerns raised be the DHLGH that these birds could be connected to the SPA population if they were birds dispersing from the SPA post breeding/ post fledging, Dr. Flynn states that Golden plover recorded in September could also be associated with autumn migration and early winter arrivals noting part of the overwintering population and the survey data points to a low probability that dispersing birds post breeding form a significant cohort of the birds recorded in September.

- Referencing the independent review by Blackstaff Ecology Ltd, a number of other factors reduced the likelihood of significant effects and adverse effects on the SPA including, the distance from the SPA which is beyond the core range for the species, preferential foraging close to nest sites, post breeding dispersal would be to higher quality foraging habitats which are limited at the development site.

11.5. **AA Screening Determination (Appendix 1 of this Report)**

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 the following Natura 2000 sites:

- Lough Dahybaun SAC (site code 002177)
- Owenduff/Nephin Complex SAC (site code 000534)
- Owenduff/Nephin Complex SPA (site code 004098)
- River Moy SAC (site code 002298);
- Lough Conn and Lough Cullin SPA (site code 004228);
- Killala Bay/Moy Estuary SPA (site code 004036); and
- Blacksod Bay/Broad Haven SPA (site code 004037).

This conclusion is based on:

- Objective information presented in the Applicants Screening Report and NIS,
- Standard pollution controls that would be employed regardless of proximity to a European site and effectiveness of same,
- Distance from European Sites,
- The absence of meaningful pathway to any European Site,
- Impacts predicted would not affect the conservation objectives.

No measures intended to avoid or reduce harmful effects on European sites were taken into account in reaching this conclusion.

## 11.6. Appropriate Assessment (Stage 2)

11.6.1. The following is a summary of the objective scientific assessment of the implications of the project on the qualifying interest 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.

11.6.2. The following Guidance has been adhered to in my assessment:

- 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 (2021) Assessment of plans and projects significantly affecting Natura 2000 sites. Revised Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EC
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC

11.6.3. The following sites are subject to Appropriate Assessment:

- Lough Dahybaun SAC (site code 002177)
- Owenduff/Nephin Complex SAC (site code 000534)
- Owenduff/Nephin Complex SPA (site code 004098)
- River Moy SAC (site code 002298);
- Lough Conn and Lough Cullin SPA (site code 004228);
- Killala Bay/Moy Estuary SPA (site code 004036); and
- Blacksod Bay/Broad Haven SPA (site code 004037).

A description of the sites and their Conservation and Qualifying Interests/Special Conservation Interests, including any relevant attributes and targets for these sites, are set out in the NIS and summarised in tables 11.5.1 – 11.5.7 of this report as part of my assessment. I have also examined the Natura 2000 data forms as relevant and the Conservation Objectives supporting documents for these sites available through the NPWS website (www.npws.ie).

**Table 11.5.1 AA for Lough Dahybaun SAC (site code 002177)**

**Key Issues (and potential indirect effects):**

- Lough Dahybaun is an oligotrophic lake surrounded by blanket bog, much of which has been cut or planted with coniferous trees. The SAC is hydrologically connected to the proposed development site via the Muing River. Groundwater input and the hydrological regime of the lake are important factors for the QI.
- The proposed development will not result in any direct effects on the SAC.
- Deterioration of water quality and water dependent habitat.
- Spread of invasive plant species.

**Conservation Objective (Conservation Objective Series, NPWS, Jan. 2021): https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002177.pdf**

- To restore the favourable conservation condition of Slender Naiad in Lough Dahybaun SAC (R)

**Appropriate Assessment**

| Qualifying Interests / Special Cons. Interests | Targets and attributes (summary) | Potential Adverse effects | Mitigation measures | In-combination effects | Can adverse effects on site integrity be excluded? |
|---|---|---|---|---|---|
| [1833] Slender Naiad Najas flexilis **(R)** | See NIS Table 6-2.<br><br>Maintain the spatial extent, depth range, cover abundance of slender naiad within the lake. No decline in plant viability or in species distribution or habitat extent. Restore maximum depth of vegetation. Maintain hydrological regime, concentration of nutrients in the water, appropriate water and | There is potential for indirect effects of contamination of surface waters from sediment-laden surface water run-off from construction works and from accidental spillages of fuel which could result in the degradation of water quality which could result in a change in water | See section 7.1 of the NIS.<br><br>During construction measures include the appointment of a qualified Ecological Clerk of Works to implement the CEMP and mitigation measures in the NIS. Pollution control measures are set out in section 7.1.2 of the | See this Inspector's Screening report for plans & projects considered for in-combination effects. No adverse effects | Yes. I am satisfied that subject to the mitigation measures set out in section 7.1 and 7.2 of the NIS that adverse effects on |

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| | sediment pH, alkalinity and cation concentrations. Maintain/restore lake substratum quality, appropriate water colour, appropriate organic carbon levels, appropriate associated species and vegetation communities and maintain/restore the area and condition of fringing habitats. | colour, nutrient levels and acidification status which would constitute an adverse effect on the qualifying interest.<br><br>The introduction or translocation of invasive plant species could negatively impact vegetation communities and fringing habitats that support the population of slender naiad would constitute an adverse effect on the qualifying interest. | NIS and include a list of sediment and erosion control measures. Measures to manage invasive plant species are set out in section 7.1.4 of the NIS and include machinery washing prior to coming on site, bunded fuel storage. No refuelling will take place within 50m of any watercourse & use of drip trays or similar. surface water run-off from the development will pass through settlement lagoons. Operational phase mitigation and decommissioning phase measures are set out in section 7.2 and 7.3 of the NIS. | identified from subject development no potential therefore for cumulative effects. | the site's integrity can excluded. |
| **Overall conclusion:**<br>Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **Lough Dahybaun SAC (site code 002177**) in view of the Conservation Objectives of this site.<br><br>This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects. | | | | | |

**Table 11.5.2 AA for Owenduff/Nephin Complex SAC (Site Code 000534)**

**Key Issues (and potential indirect effects):**

- This SAC is located c.3.8km southwest of the proposed development site. It is designated for two aquatic QI species and a number of water dependent habitats. The development site is hydrologically connected via surface waters (Owenmore River). The proposed development will not result in any direct effects on the SAC.
- Deterioration of water quality which could result in habitat loss/degradation, as well as impacts to habitats which support the aquatic species within the SAC;
- There is potential for disturbance to otter which is sensitive to anthropogenic disturbance.

**Conservation Objectives**: (Conservation Objectives Series, NPWS, July 2017) (See also Owenduff/Nephin Complex cSAC & SPA, Conservation Plan, 2006)
**https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000534.pdf**

- To restore the favourable conservation condition **R**
- To maintain the favourable conservation condition **M**

**Appropriate Assessment**

| Qualifying Interests /Species of Qualifying Interest | Targets and attributes (summary) | Potential Adverse effects | Mitigation measures | In-combination effects | Can adverse effects on site integrity be excluded? |
|---|---|---|---|---|---|
| [3110] Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) **M**<br>[3160] Natural dystrophic lakes and ponds **M** | Area stable or increasing, no decline in habitat distribution. Typical species condition and abundance. Maintain vegetation distribution, hydrological regime, lake substratum quality and water quality, Maintain appropriate water and sediment pH, maintain/restore appropriate water colour, | The development site is hydrologically connected to the protected site via surface waters (Owenmore River), which flows along the northern boundary of the SAC.<br><br>These habitat QIs are either located upstream of the Owenmore River or are terrestrial habitat with no | None required | See this Inspector's Screening report for plans & projects considered for in-combination effects. No adverse effects identified from subject development no potential therefore for cumulative effects. | Yes |

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| | appropriate organic carbon levels, appropriate turbidity and maintain condition of fringing habitats. . | hydrological connection to the proposed development site.<br><br>There is no potential for adverse effects on these QIs. | | | |
| [3260] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation **M** | Area stable or increasing, no decline in habitat distribution. Maintain appropriate hydrological regimes, substratum composition, water quality, typical species and floodplain connectivity. Maintain condition of fringing habitats. | | | | |
| [4010[ Northern Atlantic wet heaths with Erica tetralix **R** | Area stable or increasing, no decline in habitat distribution. Maintain soil nutrient status. Maintain variety of vegetation communities. Vegetation composition and structure targets. Cover of disturbed bare ground and cover of drainage less than 10%. No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat. | | | | |
| [4060] Alpine and Boreal heaths **R** | | | | | |

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| [5130] Juniperus communis formations on heaths or calcareous grasslands **M** | Area stable or increasing, no decline in habitat distribution. At least 50 plants per formation. Vegetation composition and vegetation structure targets. | | | | |
| 7130 Blanket bogs (* if active bog) **R** | Area stable or increasing, no decline in habitat distribution. Maintain soil nutrient status within natural range. At least 99% of the total Annex I blanket bog area is active. Natural hydrology unaffected by drains and erosion. Vegetation composition and vegetation structure targets. Cover of disturbed bare ground less than 10%. No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat. | | | | |
| [7140] Transition mires and quaking bogs **R** | Area stable or increasing, no decline in habitat distribution. Maintain soil nutrient status and variety of vegetation communities | | | | |

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| | within natural range. Vegetation composition and vegetation structure targets. Cover of disturbed bare ground less than 10%. No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat. | | | | |
| [1106] Salmon Salmo salar **R** | 100% of river channels down to second order accessible from estuary. Conservation Limit (CL) for each system consistently exceeded. Salmon fry abundance maintained or exceeded. No significant decline in smolt abundance. No decline in number and distribution of spawning redds due to anthropogenic causes. Water quality at least Q4. | Yes- The proposed construction works have the potential to result in the degradation of water quality which could remove suitable feeding and spawning habitat for his species, in the Owenmore River. | See section 7.1 of the NIS for construction phase mitigation measures. During construction measures include the appointment of a qualified Ecological Clerk of Works to implement the CEMP and mitigation measures in the NIS. Pollution control measures are set out in section 7.1.2 of the NIS and includes a list of sediment and erosion control measures. Measures to manage invasive plant species are set out in section 7.1.4 and include machinery washing prior to coming on site; | See this Inspector's Screening report for plans & projects considered for in-combination effects. No adverse effects identified from subject development no potential therefore for cumulative effects. | Yes |

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| | | | bunded fuel storage, No refuelling will take place within 50m of any watercourse & use of drip trays or similar. All surface water run-off from the development will pass through settlement lagoons. No instream works will be permitted during the construction works. Where stream crossing occurs on site, a clear-span design bridge will be used. Culverting will only be used for minor forestry/ field drains and will be carried out in dry weather periods. Operational phase mitigation & decommissioning phase measures are set out in section 7.2 and 7.3 of the NIS. | | |
| [1355] Otter Lutra lutra **M** | No significant decline in distribution, extent of terrestrial habitat, freshwater sites, couching sites and holts. No significant decline in fish biomass available. No significant increase of barriers to connectivity. | Yes - There is potential for disturbance to otter which is sensitive to anthropogenic disturbance. A significant pollution event from the works area could result in a decline in available feeding resources for otter. | In addition to the mitigation measures set out in section 7.1.1 and 7.1.2, section 7.1.3 deals with Disturbance / Displacement Mitigation Measures and include pre-construction otter | | Yes |

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| | | | surveys to ensure adequacy of measures. Construction noise will be kept to a min.& in compliance with best practice. . | | |
| [1393] Slender Green Feather-moss Drepanocladus vernicosus **M** | No decline in distribution, pop. size, or area of suitable habitat. Maintain suitable hydrological conditions. Vegetation composition and vegetation structure targets. | No potential for effects given absence of downstream water connection to these features and distance to closest records of habitats and species to the development site (CSO Map 4 & 5) | None required. | Not applicable | Yes |
| [1528] Marsh Saxifrage Saxifraga hirculus **M** | No loss in geographical spread and number. Maintain the size and area of each known pop. Maintain the appropriate natural hydrological regime. Vegetation composition and vegetation structure targets. | | | | |

**Overall conclusion**

Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **Owenduff/Nephin Complex SAC** (Site Code 000534) in view of the Conservation Objectives of this site.

This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

**Table 11.5.3 AA for Owenduff/Nephin Complex SPA (Site code 004098)**

**Key Issues (and potential indirect effects):**

- This SPA is located c.3.8km southwest of the proposed development site. The development site is hydrologically connected to the protected site via surface waters (Owenmore River). The proposed development will not result in any direct effects on the SPA.
- Development is within range of both SCI species – ex-situ potential effects.
- There is potential for injury or mortality due to turbine collision during the operational phase for the SCI.
- There is also potential loss of suitable foraging habitat and SCI species disturbance and displacement.
- DAU express concern regarding excluding breeding Golden plover from collision risk model. Also, the bioregional area used to consider impact (i.e. County Mayo administrative boundary).

Conservation Objectives: (Conservation Objectives Series, NPWS, October 2022). (See also Owenduff/Nephin Complex cSAC & SPA, Conservation Plan, 2006)
**https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004098.pdf**

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA.

In the absence of site-specific conservation objectives the conservation objectives of Connemara Bog Complex SPA are used as a surrogate in as far as they apply to the designation features of both protected sites which are:

- To restore the favourable conservation condition of merlin in the SPA;
- To restore the favourable conservation condition of Golden plover in the SPA.

**Appropriate Assessment**

| Qualifying Interests /Species of Qualifying Interest | Targets and attributes (summary)<br><br>(Taken from Connemara Bog Complex SPA) | Potential Adverse effects | Mitigation measures | In-combination effects? | Can adverse effects on site integrity be excluded? |
|---|---|---|---|---|---|
| [A098] Merlin (Falco columbarius | Merlin nests within the site (population conservatively estimated at between 4 and 8 | As the proposed development is within the core foraging range for Merlin (5km, SNH 2016), there is potential for injury or mortality | The NIS proposed that pre-works surveys should be carried out to establish whether there are breeding merlin at | No. Several windfarm projects and other development proposals were | Having regard to the information on file and the external |

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| | pairs).; has a preference for heather bog areas, particularly marginal zones between blanket bog and heath/upland grassland (Site Synopsis, 2015).<br><br>Breeding population is increasing. Productivity rate sufficient to meet the population size target. Sufficient availability of suitable nesting sites throughout the SPA. Sufficient availability of suitable foraging habitat across the SPA. Disturbance occurs at levels that do not significantly impact upon breeding merlin. | due to turbine collision during the operational phase for the SCI. There is also potential loss of ex-situ suitable foraging habitat and SCI species disturbance and displacement.<br><br>The majority of Merlin records over the survey period related to birds seen to the east and north of the site. A probable breeding territory was identified immediately to the west of the site. During the breeding seasons, Merlin was recorded as having a possible breeding status onsite although there were no confirmed records of nests or juveniles during the surveys.<br><br>The independent external ecologist report appended to this inspector's Report (Appendix 2) states that breeding season records are more likely to refer to birds associated with the probable breeding territory to the immediately west of the site rather than birds from the SPA since the site is near the limit of the typical foraging | the proposed wind farm site and proposes that if breeding Merlin are recorded in close proximity to construction area, a buffer of 500m shall be established around the identified breeding area.<br><br>The independent ecologist report, Blackstaff Ecology Ltd, (Appendix 2), notes that while this represents good practice, these would be outside the scope of the NIS since, with declining populations, any breeding birds are unlikely to consist of overspill from the SPA populations. | considered in the NIS, including Sheskin South windfarm.<br>I am satisfied that that there is a lack of potential for collision and /or disturbance with the SCIs identified in the Owenduff/ Nephin Complex SPA.<br><br>I note the independent external ecologist comments that it is justifiably concluded that there will be no in-combination effects with other schemes on the assessed Natura sites. | report on file, I concur with the external ecologist report that the NIS conclusion that there will be no significant effect on SCI species merlin arising from disturbance effects is justified.<br><br>As breeding merlin are unlikely to be associated with the SPA, collision risk impact is not considered further as part of the AA. |

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| | | range of the species for the SPA population.<br><br>Merlin nesting distribution is strongly territorial but only the immediate vicinity of the nest site is defended and hunting territories are not exclusive. However, since the site is near the likely limits of the foraging area used by the SPA merlin population the presence of a likely nest site immediately to the west of the site boundary suggests that breeding season records most likely refer to these birds rather than birds from the SPA population. | | | |
| **Qualifying Interest /Special Conservation Interest** | **[A140] Golden plover (Pluvialis apricaria)** | | | | |
| Note: the following assessment incorporates Table 2 and elements of the Technical Note prepared by Dr. Maeve Flynn, Inspectorate Ecologist, appended to this Report as Appendix 3, and for this reason and given the complexity of issues, the following table is slightly different from other AA tables in this Inspector's Report so as to allow for adequate detail in the assessment. | | | | | |
| **Attribute/ measure (Taken from Connemara** | **Targets** | **Note** | **Potential Adverse effects** | **Mitigation measures** | **In-combination effects?** |

| | | | | | |
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| **Bog Complex SPA)** | | | | | |
| Breeding population trend Percentage change in number of Apparently Occupied Territories (AOTs) | Long term trend is stable or increasing | Most recent scientific evidence shows that the long-term trend is decreasing in this SPA and nationally. Most recent survey found only 5 occupied territories showing decline of 37.5% from counts in 2006 | No<br><br>These attributes related to targets within the SPA site.<br><br>The proposed windfarm development could not have any effect on these targets as no direct impacts on the SPA will occur | The NIS proposes that pre-works surveys should be carried out to establish whether there are breeding Golden plover at the proposed wind farm site and proposes that if breeding Merlin are recorded in close proximity to construction area, a buffer of 500m shall be established around the identified breeding area.<br><br>The independent ecologist report, Blackstaff Ecology Ltd, (Appendix 2), notes that while this represents good practice, these would be outside the scope of the NIS since, with declining populations, any breeding birds are unlikely to consist of | No. Several windfarm projects and other development proposals were considered in the NIS, including Sheskin South windfarm.<br>I am satisfied that that there is a lack of potential for collision and /or disturbance with the SCIs identified in the Owenduff/ Nephin Complex SPA.<br><br>I note the independent external ecologist |
| Productivity rate Number of young fledged per Apparently Occupied Territory (AOT | Sufficient productivity to maintain the population trend as stable or increasing | | | | |
| Distribution of breeding habitat Spatial distribution | No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation | | | | |
| Extent and condition of breeding habitat Hectares of high quality breeding habitat | Sufficient area of high-quality habitat to support the population target | | | | |
| Disturbance at breeding site Intensity, frequency, timing and duration | Disturbance occurs at levels that do not significantly impact upon population target | | No<br>The proposed development is located at a distance of greater than 3.5km and will not exert a disturbance | | |

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| | | | effect at breeding sites within the SPA. | overspill from the SPA populations. | comments that it is justifiably concluded that there will be no in-combination effects with other schemes on the assessed Natura sites. |
| | In the revised NIS, the applicant considers potential for ex-situ disturbance or displacement of Golden plover if they were found to breed within or in immediate proximity to the proposed development (based on core range- see note above). This was considered an unlikely situation to occur but would be a potential adverse effect on this attribute if a breeding attempt was disturbed.<br><br>Mitigation measures including preconstruction survey for breeding birds are proposed.<br><br>No breeding Golden plover were recorded over the survey period 2019-2022 and habitat at the site is unlikely to be suitable. | | | | |
| Barriers to connectivity and site use Number, location, shape and hectares | Barriers do not significantly impact the breeding population's access to the SPA or other ecologically important sites outside the SPA | Barriers limiting the breeding population's access to this SPA or movement within the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact | The proposed windfarm site is not considered an ecologically important site outside of the SPA for breeding GP due to sub optimal habitat.<br>Located outside of the core range for the species, with no records of GP occurring on the windfarm site before mid-September the windfarm will not impact on access to the SPA.<br>An assessment of barrier for wintering population effect found low magnitude effect (Table 8.21). The proposed development | | |

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| | | | site is located in an open landscape, this topographical characteristic limits the potential for a barrier effect.<br>In combination assessment with other windfarms located north of SPA found no adverse effects. | | |
| Forage spatial distribution, extent and abundance Location, hectares, and forage biomass | Sufficient number of locations, area of suitable habitat, and available forage biomass to support the population target | Quantitative information on foraging ranges of breeding Golden plover in Ireland is unavailable but studies elsewhere have shown breeding adults to forage up to 4km from the nest (Whittingham et al., 2000). Whittingham et al. (2000) reported moorland breeding Golden plover foraged 1.1 to 3.7 km from their nests during the incubation period | No<br><br>The proposed development is outside of the core foraging range cited for this species<br>While a range of up to 11km is cited this would be where suitable foraging/dispersal habitat is limited, which isn't the case here.<br><br>No Golden plover were recorded on the windfarms site during the breeding season over 4 seasons of survey (2019-2022).<br><br>Peatland habitats at the proposed windfarm site are sub optimal for | | |

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| | | | breeding Golden plover. | | |
| | **Can adverse effects on site integrity be excluded?**<br>Based on the above and the information provided by the applicant, adverse effects on site integrity can be excluded.<br>The proposed development will not prevent or delay the attainment of conservation objectives to maintain or restore favourable conservation condition of Golden plover for this SPA. | | | | |

**Overall conclusion**

Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **Owenduff/Nephin Complex SPA (Site code 004098**) in view of the Conservation Objectives of this site.

This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

**Table 11.5.4 AA for River Moy SAC (Site code 002298)**

**Key Issues (and potential indirect effects)**

- This SAC is hydrologically located c. 8.1.km to the south-east and is designated for, among other Qualifying Interests, five aquatic QI species within the SAC. The proposed development will not result in any direct effects on the SAC.
- Deterioration of water quality which could result in habitat loss/degradation, as well as impacts to habitats which support the aquatic species within the SAC

**Conservation Objectives:**
https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002298.pdf (Conservation Objectives Series, NPWS, 2016 and S.I. No. 332 of 2023)

- To restore the favourable conservation condition **(R)**
- To maintain the favourable conservation condition (**M)**

**Appropriate Assessment**

| Qualifying Interests/ Species of Qualifying Interest | Targets and attributes (summary) | Potential Adverse effects | Mitigation measures | In-combination effects | Can adverse effects on site integrity be excluded? |
|---|---|---|---|---|---|
| [6510] Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) (**M or R**) | Species not listed in the NPWS CSO but is listed in S.I. No. 332 of 2023.<br>The NIS states that the according to the grassland Monitoring Survey (2015-2017), this habitat is largely confined to the southeast of the SAC. | The proposed development will not result in any direct effects on the SAC. The habitat QIs, at a distance of at least c. 8km downstream from the proposed development site are not considered to be at risk having regard to the distance to the SAC from the proposed development site and given that the habitat QIs are considered to have relatively low sensitivity to suspended sediments or other pollutants. No potential adverse effects for the habitat qualifying interests of this SAC. | None required for the habitat qualifying interests of this SAC. | See this Inspector's Screening report for plans & projects considered for in-combination effects.<br>No adverse effects identified from subject development no potential therefore for cumulative effects. | Yes. I am satisfied that subject to the mitigation measures set out in section 7.1 and 7.2 of the NIS that adverse effects on the site's integrity can be excluded. |
| [7110] Active raised bogs* (**R**) | There are five raised bogs listed for River Moy SAC and occurs on most of the bogs in the River Moy SAC. Restore appropriate water levels, high bog topography, adequate transitional areas and vegetation quality, flora and fauna. | | | | |
| [7120] Degraded raised bogs still capable of natural regeneration (**R**) | A separate conservation objective has not been set in River Moy SAC. The conservation objective for this habitat is inherently linked to that of Active raised bogs. | | | | |
| [7150] Depressions on peat substrates of the Rhynchosporion (**R**) | Depressions on peat substrates of the Rhynchosporion is an integral part of good quality Active raised bogs and thus a separate conservation objective has not been set for this SAC. | | | | |

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| [7230] Alkaline fens (**M**) | The full extent of this habitat within the SAC is unknown – stable or increase area. Active peat formation, appropriate water quality, maintain vegetation cover of typical species. Cover of treesm shrubs and bare ground less than 10%. Percentage drainage areas less than 10%. | | | | |
| [91A0] Old sessile oak woods with Ilex and Blechnum in the British Isles (**M**) | The total extent within the SAC is unknown. No decline in habitat distribution. Area stable or increasing. Maintain woodland structure. No decline in vegetation composition. Non-native invasive species absent or under control. | | | | |
| [91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* Lampetra planeri (**M)** | The total extent of this habitat within the SAC is unknown. No decline in habitat distribution. Area stable or increasing. Maintain diverse and distinct woodland structure. Maintain hydrological regime. Maintain dead wood target. No decline in veteran trees. Native and varied tree cover not less than 95%. Non-native invasive species absent or under control. | | | | |
| [1092] White-clawed Crayfish Austropotamobius pallipes **(M)** | The general distribution of white-clawed crayfish in the SAC is that it is widespread in the upper tributaries of the River Moy and the rivers which feed Loughs | A number of watercourses within the proposed development site offer suitable supporting habitat for crayfish, salmon and | See section 7.1 of the NIS for construction phase mitigation measures. | See this Inspector's Screening report for plans & | |

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| | Conn and Cullin. Juveniles and/or females with eggs. No alien crayfish species. No instances of disease. Water quality at least Q3-4. No decline in habitat quality. | lamprey, based on the results of an electrofishing survey.<br><br>There is potential for indirect effects of contamination of surface waters from sediment-laden surface water run-off from construction works and from accidental spillages of fuel which could result in habitat loss/degradation to habitats which support the aquatic species within the SAC. | During construction measures include the appointment of a qualified Ecological Clerk of Works to implement the CEMP and mitigation measures in the NIS. Pollution control measures are set out in section 7.1.2 of the NIS and include a list of sediment and erosion control measures. Measures to manage invasive plant species are set out in section 7.1.4 of the NIS and include machinery washing prior to coming on site; bunded fuel storage, No refuelling will take place within 50m of any watercourse & use of drip trays or similar. All surface water run-off from the development will pass through settlement lagoons. Operational phase mitigation and decommissioning phase measures are set out in section 7.2 and 7.3 of the NIS. | projects considered for in-combination effects. No adverse effects identified from subject development no potential therefore for cumulative effects. | |
| [1095] Sea Lamprey Petromyzon marinus **(M)** | Greater than 75% of main stem length of rivers accessible from estuary. At least three age/size groups present. Mean catchment juvenile density at least 1/m². No decline in extent and distribution of spawning beds. | | | | |
| [1096] Brook Lamprey **(M)** | Access to all watercourses down to first order stream. At least three age/size groups present. Mean catchment juvenile density of at least 2/m². No decline in extent and distribution of spawning beds. | | | | |
| [1106] Salmon Salmo salar **(M)** | 100% of river channels down to second order accessible from estuary. Conservation Limit (CL) for each system consistently exceeded. Salmon fry Abundance maintained or exceeded. No significant decline in smolt abundance. No decline in number and distribution of spawning redds due to anthropogenic causes. Water quality at least Q4. | | | | |
| [1355] Otter Lutra lutra **(M)** | No significant decline in distribution, extent of terrestrial habitat, freshwater sites, | There is potential for disturbance to otter which is sensitive to | In addition to the mitigation measures set out in section 7.1.1 and | | |

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| | couching sites and holts. No significant decline in fish biomass available. No significant increase of barriers to connectivity. | anthropogenic disturbance. A significant pollution event from the works area could result in a decline in available feeding resources for otter. | 7.1.2, section 7.1.3 deals with Disturbance / Displacement Mitigation Measures and include pre-construction otter surveys to ensure adequacy of measures. Construction noise will be kept to a minimum and in compliance with best practice. | | |

**Overall conclusion:**
Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **River Moy SAC (Site code 002298)** in view of the Conservation Objectives of this site.

This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

**Table 11.5.5 Lough Conn and Lough Cullin SPA (site code 004228)**

**Key Issues (and potential indirect effects):**

- This SPA is located c.11km southeast of the proposed development site. The development site is hydrologically connected to the protected site via surface waters (the Shanvolahan and Deel rivers), which enters the north of lough Conn, c. 30km downstream of the proposed development site. There are no water quality impacts within the SPA arising which could impact foraging habitat of the SCI species. The proposed development will not result in any direct effects on the SPA.
- There is potential for injury or mortality due to turbine collision during the operational phase for the SCI.
- There is also potential loss of suitable foraging habitat and SCI species disturbance and displacement.

**Conservation Objectives: (Conservation Objective Series, NPWS, October 2022) https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004228.pdf**

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA.
- To maintain or restore the favourable conservation condition of the wetland habitat at Lough Conn and Lough Cullin SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

| Appropriate Assessment | | | | | |
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| **Qualifying Interests /Species of Qualifying Interest** | **Targets and attributes (summary)** | **Potential Adverse effects** | **Mitigation measures** | **In-combination effects?** | **Can adverse effects on site integrity be excluded?** |
| [A061] Tufted Duck (Aythya fuligula) | The site supports nationally important wintering populations of Tufted Duck.<br><br>Conservation objective as per above. | Core foraging range are not described for Tufted duck.<br>Tufted Duck was recorded using the proposed development site mostly during the winter and confined to Lake Dahybaun, at some remove from proposed turbines. The NIS states that disturbance for wintering Tufted duck is <50m. No works are proposed in such close proximity to sightings of Tufted duck. Additionally, the habitats within the Proposed Development site boundary are considered to be sub-optimal compared to other habitats surrounding the Proposed Development site boundary there is no potential for likely significant effects. | None required. | See this Inspector's Screening report for plans & projects considered for in-combination effects.<br>No adverse effects identified from subject development no potential therefore for cumulative effects. | Yes |

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| [A065] Common Scoter (Melanitta nigra) | One of only four breeding sites in the country for Common scoter.<br><br>Conservation objective as per above. | Core foraging range are not described for Common Scoter.<br>This species was not recorded within the study area over the survey period and the habitats within the Proposed Development site are considered to be sub-optimal compared to other habitats surrounding the Proposed Development site boundary. There is therefore no potential for impacts on these SCI species. | None required. | | |
| [A182] Common Gull (Larus canus) | Lough Conn is a traditional breeding site for gulls.<br><br>Conservation objective as per above. | Core foraging range are not described for Common gull.<br>EIAR, chapter 8 states: Common Gull was confirmed breeding at several locations within the study area. Further states: the Common Gull within the Proposed Development site were found to be resident over the survey period, and the population is not believed to be associated with this SPA. | None required | | |

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| A395] Greenland White-fronted Goose (Anser albifrons flavirostris) | The site supports Greenland White-fronted Goose.<br><br>Conservation objective as per above. | Core foraging range is 5-8km. The proposed development is outside this range.<br>This species was not recorded within the study area over the survey period and the habitats within the Proposed Development site are considered to be sub-optimal compared to other habitats surrounding the Proposed Development site boundary. There is therefore no potential for impacts on these SCI species. | None required | | |
| [A999] Wetland and Waterbirds | Conservation objective as per above. | Having regard to hydrological distance to site there are no water quality impacts within the SPA arising which could impact foraging habitat of wetland and waterbirds. | None required. | | |
| **Overall conclusion**<br>Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **Lough Conn and Lough Cullin SPA (site code 004228)** in view of the Conservation Objectives of this site.<br><br>This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects | | | | | |

| Table 11.5.6: Killala Bay/Moy Estuary SPA (site code 004036) | | | | | |
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| **Key Issues (and potential indirect effects):**<br>• The proposed development site is c.14km from the SPA and is connected via the Kilfian South and Cloonaghmore rivers which flow south approx. 24km downstream into the SPA. The SPA is very important for wintering waterfowl and provides excellent feeding grounds for the birds, as well as high-tide roosts. The proposed development will not result in any direct effects on the SPA.<br>• There is potential for injury or mortality due to turbine collision during the operational phase for the SCI.<br>• There is also potential loss of suitable foraging habitat and SCI species disturbance and displacement.<br><br>**Conservation Objectives: (NPWS, May 2013; Conservation Objectives Supporting Document, V. 1, May 2013).**<br>**https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004036.pdf**<br><br>• To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA **(M)**<br>• To maintain the favourable conservation condition of the wetland habitat in Killala Bay/Moy Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. | | | | | |
| **Appropriate Assessment** | | | | | |
| **Qualifying Interests /Species of Qualifying Interest** | **Targets and attributes (summary)** | **Potential Adverse effects** | **Mitigation measures** | **In-combination effects?** | **Can adverse effects on site integrity be excluded?** |
| [A137] Ringed Plover (Charadrius hiaticula) **(M)** | Long term population trend stable or increasing.<br>No significant decrease in the range, timing or intensity of use of areas by these SCI species, other than that occurring from natural patterns of variation. | The species was commonly recorded during breeding seasons surveys, with a small number recorded in the late winter seasons.<br>A low level of Ringed Plover flight activity was recorded within the Proposed Development | None required. | See this Inspector's Screening report for plans & projects considered for in-combination effects. | Yes |

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| | | site at potential collision height over the survey period.<br>Core foraging ranges have not been described for Dunlin though it has a wide prey/food range. This species has a high site fidelity and is considered totally reliant on wetland habitats due to unsuitable surrounding habitats.<br>There is no potential for likely significant effects on this SCI species. | | No adverse effects identified from subject development no potential therefore for cumulative effects. | |
| [A140] Golden plover (Pluvialis apricaria) **(M)** | | The proposed development site is outside the foraging range of Golden plover (3-11km, SNH 2016). There is therefore no potential for impacts on this SCI species. | None required. | | |
| [A141 ] Grey Plover (Pluvialis squatarola) **(M)** | | This species was not recorded within the study area over the survey period. There is therefore no potential for impacts on this SCI species. | | | |
| [A144] Sanderling (Calidris alba) **(M)** | | This species was not recorded within the study area over the survey period. There is therefore no potential for impacts on these SCI species. | | | |

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| [A149] Dunlin (Calidris alpina) **(M)** | | No potential collision height flights over the survey period and no flights were recorded for Dunlin. NIS states that potential of collision with operational turbines is negligible, and no collision risk was therefore calculated.<br>Core foraging ranges have not been described for Dunlin though it has a wide prey/food range. This species has a high site fidelity and is considered totally reliant on wetland habitats due to unsuitable surrounding habitats.<br>There is no potential for likely significant effects on this SCI species. | | | |
| [A157] Bar-tailed Godwit (Limosa lapponica) **(M)** | | This species was not recorded within the study area over the survey period. There is therefore no potential for impacts on this SCI species. | | | |
| [A160] Curlew (Numenius arquata) **(M)** | | The proposed development site is outside the foraging range of Curlew (1-2km, SNH, 2016). There is therefore no potential for impacts on this SCI species. | | | |

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| [A162] Redshank (Tringa totanus) **(M)** | | Core foraging ranges have not been described for Redshank. Redshank were rarely recorded within the site. The EIAR states that lands which will fall within the development footprint are considered sub-optimal breeding and foraging habitat for this species compared to the habitats outside the survey area. The NIS notes that his species feeds largely on the intertidal habitat. There is therefore no likely potential for impacts on this SCI species. | | | |
| Wetland and Waterbirds [A999] | The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 3204 hectares, other than that occurring from natural patterns of variation | Having regard to hydrological distance to site there are no water quality impacts within the SPA arising which could impact foraging habitat of wetland and waterbirds. | None required. | | |
| **Overall conclusion**<br>Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **Killala Bay/Moy Estuary SPA (Site Code 004036)** in view of the Conservation Objectives of this site.<br><br>This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects | | | | | |

**Table 11.5.7: Blacksod Bay/Broad Haven SPA (site code 004037)**

**Key Issues (and potential indirect effects):**

- This SPA is located c.17km west of the proposed development site. The development site is hydrologically connected to the protected site via the Owenmore River which flows approximately 30km downstream into the SPA. Blacksod Bay/Broad Haven SPA is of high ornithological importance for its excellent diversity of wintering waterbirds. It is also a nationally important breeding site for Sandwich Tern and Dunlin (subsp. schinzii). The proposed development will not result in any direct effects on the SPA.
- There is potential for injury or mortality due to turbine collision during the operational phase for the SCI.
- There is also potential loss of suitable foraging habitat and SCI species disturbance and displacement.

**Conservation Objectives**: (Conservation Objective Series, NPWS, Dec, 2014, Conservation Objectives Supporting Document, V 1, NPWS, 2014))
**https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004037.pdf**

- To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA (**M**)
- To maintain the favourable conservation condition of the wetland habitat in Blacksod Bay/Broad Haven SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

**Appropriate Assessment**

| Qualifying Interests /Species of Qualifying Interest | Targets and attributes (summary) | Potential Adverse effects | Mitigation measures | In-combination effects? | Can adverse effects on site integrity be excluded? |
|---|---|---|---|---|---|
| [A001] Red-throated Diver (Gavia stellata) | Species not listed in the NPWS CSO but is listed in S.I. No. 388 of 2021. | These species were not recorded within the study area over the survey period. There is therefore no potential for impacts on this SCI species. | None required. | n/a | Yes |
| [A003] Great Northern Diver (Gavia immer) **(M)** | Long term population trend stable or increasing.<br>No significant decrease in the range, timing or intensity of use of | | | | |

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| | areas by Great Northern Diver, other than that occurring from natural patterns of variation. | | | | |
| [A007] Slavonian Grebe (Podiceps auritus)**)** | Species not listed in the NPWS CSO but is listed in S.I. No. 388 of 2021. | | | | |
| [A046] Light-bellied Brent Goose (Branta bernicla hrota) **(M)** | Long term population trend stable or increasing.<br><br>No significant decrease in the range, timing or intensity of use of areas by these SCI species, other than that occurring from natural patterns of variation. | | | | |
| [A065] Common Scoter (Melanitta nigra) **(M)** | | | | | |
| [A069] Red-breasted Merganser (Mergus serrator) **(M)** | | | | | |
| [A137] Ringed Plover (Charadrius hiaticula) **(M)** | | | | | |
| [A144] Sanderling (Calidris alba) **(M)** | | | | | |

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| [A149] Dunlin (Calidris alpina alpina) **(M)** | | No potential collision height flights over the survey period were recorded for Dunlin. NIS states potential of collision with operational turbines is negligible, no collision risk was therefore calculated. Core winter foraging ranges have not been described for Dunlin (and other SCI species of this SPA). Principal supporting habitat is intertidal mud and sand flats. The NIS states that the habitats within the Proposed Development site boundary are considered to be sub-optimal compared to other habitats surrounding the Proposed Development site boundary.<br>There is no potential for likely significant effects on this SPA species. | | | |
| [A157] Bar-tailed Godwit (Limosa lapponica) **(M)** | | This species was not recorded within the study area over the survey period. There is therefore no potential for impacts on this SCI species. | | | |

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| [A160] Curlew (Numenius arquata) **(M)** | | The proposed development site is outside the foraging range of Curlew (1-2km, SNH, 2016). There is therefore no potential for impacts on this SCI species. | | | |
| [A191] Sandwich Tern (Sterna sandvicensis) **(M)** | No significant decline in breeding pop. abundance. No significant decline in productivity rate, distribution of breeding colonies or available prey biomass. No significant increase in barriers to connectivity. Human activity should not affect breeding pop. | These species were not recorded within the study area over the survey period. There is therefore no potential for impacts on this SCI species. | | | |
| [A466] Dunlin (Calidris alpina schinzii) **(M)** | Stable or increasing breeding pop. No significant decline in productivity rate. Stable or increasing distribution and availability of suitable habitat. Human activity should not affect breeding pop. | | | | |
| [A999] Wetland and Waterbirds | The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 8,539 hectares, other than that occurring from natural patterns of variation. | Having regard to hydrological distance to site there are no water quality impacts within the SPA arising which could impact foraging habitat of wetland and waterbirds. | | | |
| **Overall conclusion**<br>Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of **Blacksod Bay/Broad Haven SPA (Site Code 004037**) in view of the Conservation Objectives of this site.<br>This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects. | | | | | |

## 11.7. Integrity Test

11.7.1. Following the appropriate assessment and the consideration of mitigation measures, including:

- Measures that arise as a consequence of the design of the development,
- The Peat Stability Assessment (Appendix 9-4 EIAR) which concluded that the wind farm site has an acceptable margin of safety and is considered to be at low risk of peat failure,
- The detailed arrangements for the management and monitoring of the effects of works on site to minimise the potential for water pollution, as set out in the Surface Water Management Plan and the Construction Environmental Management Plan,
- The detailed survey work undertaken in respect of bird species and the proposals for pre-construction survey work, mitigation measures and post-construction survey work,
- The absence of potential for cumulative effects with other policies, plans or projects in the area of the site,

11.7.2. I am able to ascertain with confidence that the project would not adversely affect the integrity of, in view of the Conservation Objectives, the following European sites.

- Lough Dahybaun SAC (site code 002177);
- Owenduff/Nephin Complex SAC (site code 000534);
- Owenduff/Nephin Complex SPA (site code 004098);
- River Moy SAC (site code 002298);
- Lough Conn and Lough Cullin SPA (site code 004228);
- Killala Bay/Moy Estuary SPA (site code 004036); and,
- Blacksod Bay/Broad Haven SPA (site code 004037).

This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

## 11.8. Appropriate Assessment Conclusion

11.8.1. The proposed development, Oweninny phase 3 windfarm development, has been considered in light of the assessment requirements of Sections 177U and 177V of the Planning and Development Act 2000 as amended. Having carried out screening for Appropriate Assessment of the project, it was concluded that it may have a significant effect on the following European sites:

- Lough Dahybaun SAC (site code 002177);
- Owenduff/Nephin Complex SAC (site code 000534);
- Owenduff/Nephin Complex SPA (site code 004098);
- River Moy SAC (site code 002298);
- Lough Conn and Lough Cullin SPA (site code 004228);
- Killala Bay/Moy Estuary SPA (site code 004036); and,
- Blacksod Bay/Broad Haven SPA (site code 004037).

Consequently, an Appropriate Assessment was required of the implications of the project on the qualifying features of those sites in light of their conservation objectives.

11.8.2. Following an Appropriate Assessment, it has been ascertained beyond reasonable scientific doubt that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European sites listed above or any other European site, in view of the site's 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 doubt as to the absence of adverse effects.

## 12.0 **Reasons and Considerations**

I recommend that permission for the development as proposed is approved, subject to the conditions recommended below.

**DRAFT ORDER**

In coming to its decision, the Board had regard to the following:

- **European legislation**, including of particular relevance:
    - The relevant provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU (EIA Directive) on the assessment of the effects of certain public and private projects on the environment.
    - Directive 92/43/EEC (Habitats Directive) and Directive 79/409/EEC as amended by 2009/147/EC (Birds Directives) which set the requirements for Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union.
    - EU Renewable Energy Directive 2009/28/EC which aims to promote the use of renewable energy.
- **National and regional planning and related policy,** including:
    - National policy, including the Climate Action Plan 2024, with regard to the development of alternative and indigenous energy sources and the minimisation of emissions from greenhouse gases,
    - National Planning Framework,
    - National Biodiversity Plan 2023-2040,
    - the provisions of the Wind Energy Development Guidelines – Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government, 2006),
    - Regional Spatial Economic Strategy for the Northwest Region, 2020
- **Local planning policy** including:

- Mayo County Development Plan 2022- 2028, in particular the Renewable Energy Strategy and the location of the proposed development in an area identified as a 'Priority Area' for windfarm development and 'Tier 1' – a preferred area for large wind farms. Policy MTP 24 which seeks to avoid the generation of additional traffic from existing direct accesses to national roads to which speed limits greater than 60 km/h apply, albeit at a level that is not significant, and thus permitting the proposed development could amount to a material contravention of the development. In materially contravening the development plan, the Board considered that the proposed development is of strategic importance having regard to the provisions of the Climate Action Plan 2024 which seeks to accelerate renewable energy generation, including a 9 GW onshore wind capacity by 2030,

- the nature, scale and design of the proposed development as set out in the planning application, the character of the landscape in the area and in the wider area of the site and the pattern of development in the vicinity, including that the proposed development site is partially located within the site of an existing windfarm which is to be decommissioned,
- 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 European Sites,
- the independent ecological report on Ornithology prepared by Blackstaff Ecology Ltd. and the Technical Note prepared by Dr. Maeve Flynn, Inspectorate Ecologist,
- the submissions made to An Bord Pleanála in connection with the planning application,
- the report and recommendation of the Inspector, including the examination, analysis and evaluation undertaken in relation to appropriate assessment and environmental impact assessment.

**Proper Planning and Sustainable Development**

It is considered that the proposed development would accord with European, national, regional and local planning and that it is acceptable in respect of its likely effects on the environment and its likely consequences for the proper planning and sustainable development of the area.

**Environmental Impact Assessment**

The Board completed in compliance with Section 172 of the Planning and Development Act 2000, an environmental impact assessment of the proposed development, taking into account:

(a) the nature, scale, location and extent of the proposed development,

(b) the Environmental Impact Assessment Report and associated documentation submitted with the application,

(c) the submissions from the planning authority, the observers and the prescribed bodies in the course of the application, and

(d) the Inspector's report.

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, identifies and describes adequately the direct, indirect and cumulative effects of the proposed development on the environment. The Board is satisfied that the information contained in the Environmental Impact Assessment Report complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU.

The Board agreed with the summary and 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. The Board is satisfied that the Inspector's report sets how these were addressed in the assessment and recommendation (including environmental conditions) and are incorporated into the Board's decision.

Notwithstanding the conclusion reached in respect of the inability of the proposed measures to fully mitigate the visual impact, it is considered that the environmental effects would not justify a refusal of planning permission having regard to the overall benefits of the proposed development.

The Board considered that the main significant direct and indirect effects of the proposed development on the environment are, and will be mitigated as follows:

- **Population & Human Health:**

  Short term negative effects by way of noise, vibration, dust and traffic and short-term positive impacts on the local economy during construction. These negative impacts will be mitigated by a managed approach to construction as set out in CEMP and the Traffic Management Plan.

  Long term negative direct and cumulative effects on landscape character and visual impacts in the immediate area will result from the proposed development. The proposed easternmost turbines will have a significant visual impact on the vista presently enjoyed by residents along/off the L5292, best illustrated by VP9 and VP12 in the townlands of Formoyle, Corvoderry and Shanvolahan and the L5160 in the townland of Doobehy. No specific mitigation measures are proposed as given the highly visible nature of the development it is not feasible to screen them from view. Some cumulative impacts will arise in particular with Owenniny Windfarm Phase 1 & 2 however the proposed turbines will be read in conjunction with existing wind turbines in the area and as an extension to an existing wind farm development.

  There is potential for shadow flicker to occur at four sensitive receptors (73, 74, 75 & 76) which will be mitigated with automatic turbine shutdown to ensure that no sensitive receptors experience shadow flicker as a result of the proposed development.

- **Biodiversity**

  The majority of habitat loss has been primarily restricted to cutover bog habitats of low ecological value resulting in the loss of c. 75ha of cutover bog. Mitigation measures include application of a Biodiversity Enhancement Plan which accompanied the EIAR and reinstatement where possible.

  The proposed development site was found to provide important spawning and nursery habitat for crayfish, lamprey and salmon. The release of construction pollution and/or sediment into the watercourses has the potential to degrade water quality indirectly impacting these aquatic species and their habitats.

Mitigation measures including those to control pollution/sedimentation and implementation of a surface water management plan.

There is potential for significant direct and indirect effect on bats, six active bat roosts sites were identified within the proposed development site including a rare Natterer's maternity roost. None of the roost buildings will be demolished as part of construction works and the proposed works will not result in the loss of any bat roosts. Notwithstanding, it is proposed to provide alternative bat roosting (in the form of a purpose-built bat house) to reduce risk to the local Natterer's bat population. Operational mitigation measures include turbine curtailment such as feathering of blades, increase cut-in speeds prior to and after sunset during Spring-Autumn months. Also, tall vegetation maintenance, bat activity surveillance, carcass search and directional sensor lighting at the substation site.

In terms of birds, that there are a number of likely construction phase effects arising including habitat loss or degradation and disturbance/displacement. Mitigation measures are proposed such as works outside breeding season and pre-construction breeding surveys.

- **Land, soil, water, air and climate**

The proposed development will result in the removal of large quantities of soil, subsoils and bedrock across the site and has potential to result in water, air and dust pollution, excavation collapse and peat slippage. The mitigation measures identified, including the Peat Management Plan, Construction Environmental Management Plan and the Surace Water Management Plan will mitigate risk and significant impacts.

In respect of water, potential indirect effects could arise due to an increase in runoff into receiving watercourses from sediment and soil erosion. In terms of mitigation a drainage system is to be put in place to control runoff and manage sediment transport during the construction please. Dedicated settlement ponds will be provided. Concrete containment measures and spillage avoidance measures will be employed to prevent concrete from entering the drainage system. Effects to the water environment will be mitigated by implementation of the Construction Environmental Management Plan and Surface Water Management Plan.

Regarding climate, the proposed development will have a long-term positive effect on climate. The supply of renewable electricity to the national grid will displace CO2 emissions otherwise used to generate electricity.

The Board is satisfied that the reasoned conclusion is up to date at the time of making the decision.

**Appropriate Assessment**

The Board agreed with and adopted the screening assessment and conclusion carried out in the inspector's report that Lough Dahybaun SAC (site code 002177), the Owenduff/Nephin Complex SAC (site code 000534), Owenduff/Nephin Complex SPA (site code 004098), River Moy SAC (site code 002298), Lough Conn and Lough Cullin SPA (site code 004228); Killala Bay/Moy Estuary SPA (site code 004036); and Blacksod Bay/Broad Haven SPA (site code 004037) are the European sites for which there is a likelihood of significant effects.

The Board considered the Natura Impact Statement, the mitigation measures contained therein, all relevant submissions and the Inspector's assessment. The Board carried out an appropriate assessment of the implications of the proposal for those seven sites in view of their Site Conservation Objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment.

In completing the assessment, the Board considered, in particular, the

i. Likely direct and indirect impacts arising from the proposal both individually or in combination with other plans or projects,
ii. The mitigation measures which are included as part of the current proposal,
iii. The Conservation Objective for these European Sites, and
iv. Views of prescribed bodies in this regard.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the integrity of the aforementioned European Sites, having regard to the site's conservation objectives.

In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the site's conservation objectives.

## 13.0 **Conditions**

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| 1. | The development shall be carried out and completed in accordance with the plans and particulars lodged with the planning application, as amended by the further plans and particulars received by the planning authority on 31 day of March 2023, 26 day of July 2023, 20 day of March 2024 and 18 day of October 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 the commencement of development and the proposed development shall be carried out and complied in accordance with the agreed particulars.<br><br>**Reason**: In the interest or clarity. |
| 2. | (a) Prior to the commencement of development, details of an Environmental Management Committee (EMC) shall be submitted to the planning authority for agreement and establishment. Details shall indicate membership of the committee to include representatives of IFI, Mayo County Council and other relevant organisations or groups for the construction phase of the project.<br><br>(b) Details of the operation of the EMC shall include frequency meetings, reporting by the developer on the construction phase of the development, arrangements for environmental monitoring and other matters as required by the EMC.<br><br>**Reason**: In the interest of the protection of the environment, water quality and fisheries habitat. |
| 3. | The mitigation measures and monitoring commitments identified in the Environmental Impact Assessment Report and other plans and particulars submitted with the application shall be implemented. |

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| | **Reason**: In the interest of clarity and the protection of the environment during the construction, operational phases and decommissioning of the proposed development |
| 4. | The mitigation measures contained in the Natura Impact Statement submitted with the planning application shall be implemented.<br><br>**Reason**: In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of European sites in the vicinity. |
| 5. | The Biodiversity Management Plan (BMP) shall be implemented in accordance with the commitments outlined therein.<br><br>**Reason**: In the interest of the protection of the environment. |
| 6. | The developer shall retain the services of a suitably qualified and experienced bird specialists to undertake appropriate annual bird surveys of this site in line with the Bird Monitoring programme provided in the EIAR. Final details of the surveys to be undertaken and associated reporting requirements shall be developed following consultation with, and agreed in writing with, the planning authority prior to commencement of development. These reports shall be submitted on an agreed date following completion of each monitoring year (1, 2, 3, 5, 10 and 15 of the lifetime of the windfarm), with the prior written agreement of the planning authority. Copies of the reports shall be sent to the Department of Housing, Local Government and Heritage.<br><br>**Reason**: To ensure appropriate monitoring of the impact of the development on the avifauna of the area. |
| 7. | (a) All measures to protect bats at pre-construction, construction and operational phases shall be implemented in accordance with the Bat Survey Report submitted with the planning application.<br><br>(b) Curtailment measures shall be implemented in accordance with Bat Survey Report. |

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| | (c) An alternative bat roost shall be erected in accordance with details set out in the Bat Survey Report and a 50m protection zone shall be maintained around Building no. 8 (toilet block).<br>(d) Monitoring of bat activity on the site shall be carried out in accordance with the bat Survey Report.<br>(e) The surveillance and annual review should be carried out by an independent experienced bat ecologist and all reports should be issued to the Planning Authority and Department of Housing, Local Government and Heritage.<br>**Reason**: To provide for the protection of bats in the area and to ensure appropriate monitoring of the impact of the development on bats. |
| 8. | The period during which the proposed development hereby permitted may be constructed shall be 10 years from the date of this order.<br>**Reason**: In the interest of clarity. |
| 9. | The permission shall be for a period of 30 years from the date of the first commissioning of the wind farm.<br>**Reason**: In the interest of clarity. |
| 10. | This permission shall not be construed as any form of consent or agreement to a connection to the national grid or the nature of any such connection.<br>Reason: In the interest of clarity. |
| 11. | The turbines shall be 200 metres in height with a hub height of 121 metres and a rotor diameter of 158 metres in accordance with the turbine detail assessed in the environmental impact assessment report and the Natura Impact Statement together with the other application documentation.<br>**Reason**: In the interest of clarity and the proper planning and sustainable development of the area. |
| 12. | The developer shall ensure that all mitigation and contingency measures set out in the Peat Management Plan in Appendix 9.3 of the EIAR are |

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| | implemented in full and monitored throughout the lifecycle of the construction works and throughout the operational phase.<br><br>**Reason**: In the interest of the protection of the environment. |
| 13. | (i) The developer shall ensure that all mitigation and contingency measures set out in the Surface Water Management Plan in Appendix 11.2 of the EIAR shall be implemented in full and monitored throughout the lifecycle of the construction works and throughout the operational phase.<br><br>(ii) The locations of surface water monitoring shall be agreed with IFI prior to construction works commencing. Monitoring methodology shall be agreed in writing with IFI prior to commencement of development.<br><br>(iii) Any extraction from borrow pits shall be above the water table.<br><br>(iv) The design and method statement for the construction of new or upgrade watercourse crossings and culverts shall be agreed in writing with IFI in advance of construction works commencing.<br><br>(v) All instream works, including culvert installations and grid connection cable water crossings or any works that may give rise to high suspended solids in close proximity to the Oweninny River, Cloonaghmore River, Deel River or their tributaries will be subject to the closed season i.e. to take place outside of the period 1st October to 30th June, unless otherwise agreed with IFI.<br><br>(vi) There shall be no discharge of silted waters, cement products, hydrocarbons or otherwise polluted waters to any surface watercourse as a result of the development. Drainage must be treated with adequately sized silt traps.<br><br>(vii) The on-site vehicle wash shall be closed loop with no discharge of waters to surface waters.<br><br>(viii) A water source for dust suppression activities must be identified and agreed in writing with IFI prior to the commencement of development.<br><br>(x) Road construction and surfacing materials used must be of adequate strength so as not to give ruse to silt/fine solids discharges. |

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| | (xi) Amenity signate shall be provided with information of local biodiversity including the aquatic environment.<br><br>(xii) areas of wetland/bog holes and ponds must be avoided during construction, where possible.<br><br>**Reason**: In the interest of the protection of the environment and water quality. |
| 14. | Commissioning and construction works shall be limited to the hours of between 0800 hours and 1800 hours Monday to Saturday and shall not be permitted on Sundays or public holidays, unless otherwise agreed in advance and in writing with the Planning Authority.<br><br>**Reason**: To protect the amenities of residential properties in the area. |
| 15. | The operation of the proposed development, by itself or in combination with other permitted wind energy development, shall not result in noise levels when measured externally at nearby noise sensitive locations which exceed:<br><br>(i) 37.5 dB LA90,10min for daytime in quiet environments with typical background noise of less than 30 dB LA90,10min.<br><br>(ii) 43 dB LA90,10min for daytime in environments with typical background noise greater than or equal to 30 dB LA90,10min or a maximum increase of 5 dB(A) above background noise (whichever is the higher); and<br><br>(iii) 43 dB LA90,10min for night-time periods or a maximum increase of 5 dB(A) above background noise (whichever is the higher).<br><br>Prior to the commissioning of the windfarm, the developer shall submit to and agree in writing with the planning authority a Noise Compliance Monitoring Programme (NCMP). The NCMP shall include a detailed methodology for all sound measurements, including frequency of monitoring (initially six months, with confirmatory monitoring in the third year post commissioning) and recording of results, which shall be made publicly available. The NCMP shall also include any mitigation measures |

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| | such as the re-dating of particular turbines if required and shall be fully implemented during the operation of the windfarm.<br><br>**Reason**: in the interests of residential amenity. |
| 16. | (a) All turbines shall be fitted with appropriate equipment and software to suitably control shadow flicker at nearby dwellings, to ensure that there will be no shadow flicker at any existing nearby dwelling. Turbine shutdown shall be undertaken by the wind energy developer or operator in order to eliminate the potential for shadow flicker.<br><br>(b) A report shall be prepared by a suitably qualified person in accordance with the requirements of the planning authority, indicating compliance with the above shadow flicker requirements. Within 12 months of commissioning of the proposed wind farm, this report shall be submitted to, and agreed in writing with, the planning authority.<br><br>(c) Prior to the commencement of development, the developer shall submit for the written agreement of the planning authority a shadow flicker compliance monitoring programme for the operational wind farm.<br><br>**Reason**: In the interest of residential amenity. |
| 17. | The developer shall comply with the following design requirements:<br><br>(a) The wind turbines, including masts and blades shall be finished externally in a light grey colour.<br><br>(b) Cables within the proposed development shall be placed underground.<br><br>(c) The wind turbines shall be geared to ensure that the blades rotate in the same direction.<br><br>(d) No advertising material shall be placed on or otherwise affixed to any structure on the site without a prior grant of planning permission.<br><br>**Reason**: In the interest of visual amenity. |
| 18. | Details of the materials, colours and textures of all external finishes of the proposed substation building and enclosed fencing shall be submitted to |

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| | and agreed in writing with the planning authority prior to the commencement of development.<br><br>**Reason**: In the interest of visual amenity. |
| 19. | Prior to the commencement of development, details of a pre-construction and post-construction monitoring and reporting programme for birds shall be submitted to and agreed in writing with the planning authority prior to the commencement of development. The survey shall be undertaken by suitably qualified and experience bird specialist and shall include measures to reduce disturbance to ground nesting species. The survey shall be completed annually for a period of fifteen years following the commissioning of the wind farm as set out in the EIAR, or longer if considered necessary, and copies of the report shall be submitted to the planning authority and to the Department of Housing, Local Government and Heritage (National Parks and Wildlife Service).<br><br>**Reason**: To ensure the appropriate monitoring of impact of the proposed development on the avifauna of the area. |
| 20. | Prior to the commencement of development, details of a post construction monitoring and reporting programme for bats shall be submitted to and agreed in writing with the planning authority. The monitoring shall be undertaken by a suitably qualified and experienced bat specialist to identify any measures required to mitigate any identified effects. The survey shall be completed annually for a period of 3 years, or longer if considered necessary, following the commissioning of the wind farm and copies of the report shall be submitted to the planning authority.<br><br>**Reason**: To ensure the appropriate monitoring of the use of the site by bat species. |
| 21. | In the event that the proposed development causes interference with telecommunication signals, effective measures shall be introduced to minimise interference with telecommunication 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 the |

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| | commissioning of the turbines and following consultation with relevant authorities.<br><br>**Reason**: In the interest of protecting telecommunication signals and residential amenity. |
| 22. | Details of aeronautical requirements which shall comply with the requirements of the Department of Defence and the Irish Aviation Authority, shall be submitted to, and agreed in writing with, the planning authority prior to the commencement of development and shall be designed to minimise cumulative visual effects. Prior to the 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 each of the turbines and wind monitoring mast and shall notify the Irish Aviation Authority with at least 30 days prior notification of their erection and use of cranes.<br><br>**Reason**: In the interest of air traffic safety. |
| 23. | The community benefit scheme shall be delivered and administered in accordance with the RESS Community Benefit Fund Good Practice Principles, 2021, prepared by the Department of the Environment, Climate and Communications.<br><br>**Reason**: To ensure that the community living in proximity to the wind farm benefits from it. |
| 24. | 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:<br><br>(a) Road safety audits relating to junction works proposed on the national road network.<br><br>(b) 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.<br><br>**Reason**: In the interest of traffic safety. |

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| 25. | (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:<br><br>(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 abnormal delivery load.<br><br>(ii) A condition survey of the roads 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.<br><br>(iii) Bridge structural surveys are to be undertaken to all bridges along haul routes in advance of the project commencing and at agreed intervals during construction, and shall be presented at agreed intervals to the planning authority.<br><br>(iv) Detailed arrangements whereby any construction damage which arises shall be made good and completed to the satisfaction of the planning authority.<br><br>(iv) 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.<br><br>(v) 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 |

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| | 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.<br><br>(vi) 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.<br><br>(b) 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.<br><br>**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. |
| 26. | (a) The developer shall employ a suitably-qualified archaeologist (licensed under the National Monuments Acts) to carry out predevelopment archaeological testing in areas of proposed ground disturbance within the wind farm site and to submit an archaeological impact assessment report for the written agreement of the planning authority following consultation with the Department of Housing, Local Government and Heritage in advance of any site preparation works or groundworks, including site investigation works/topsoil stripping/site clearance and/or construction works.<br><br>(i) The report shall include an archaeological impact statement and mitigation strategy. Where archaeological material is shown to be present, avoidance, preservation in-situ, preservation by records (archaeological excavation) and/or monitoring may be required.<br><br>(ii) Any further archaeological mitigation requirements specified by the planning authority, following consultation with the |

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| | National Monument Service shall be complied with by the developer.<br><br>(iii) No site preparation and or construction works shall be carried out on site until the archaeologist's report has been submitted to and approval to proceed is agreed in writing with the planning authority.<br><br>(b) 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 18 of the EIAR and by any subsequent archaeological investigations 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.<br><br>(c) 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.<br><br>**Reason**: In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site. |
| 27. | (a) On full or partial decommissioning of the wind farm, or if the wind farm ceases operation for a period of more than 1 year, the turbines and all decommissioned structures shall be removed, and foundations covered with soil to facilitate revegetation. These reinstatement works shall be completed to the written satisfaction of |

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| | the planning authority within three months of decommissioning or cessation of operation.<br><br>(b) Prior to the commencement of development, a detailed Site Restoration Plan providing for the removal of the turbines and all ancillary structures, and a timescale for its implementation, shall be submitted to and agreed in writing with the planning authority.<br><br>**Reason**: To ensure a satisfactory reinstatement of the site upon cessation of the project. |
| 28. | (a) Details of the construction and environmental management plan (CEMP) shall be agreed in writing with the planning authority prior to the commencement of development. The CEMP shall include but not be limited to operational controls for dust, noise and vibration, waste management, protection of soils and groundwaters and surface waters, protection of flora and fauna, site housekeeping, emergency response planning, site environmental policy, waste management, project roles and responsibilities.<br><br>(b) The applicant shall during the construction phase maintain a complaints register to record any complaints regarding but not limited to noise, odour, dust, traffic or 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. The Environmental Management Committee shall be advised of details of any complaint.<br><br>**Reason**: In the interest of environmental protection and orderly development. |
| 29. | Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or other security to secure the reinstatement of public roads which may be damaged by the transport of materials to the site, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and |

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| | 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.<br><br>**Reason**: To ensure the satisfactory completion of the development. |
| 30. | 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 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.<br><br>**Reason:** In the interest of orderly development and visual amenity and to ensure satisfactory reinstatement of the site |
| 31. | 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 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 An Bord Pleanála to determine the proper application of the terms of the Scheme.<br><br>**Reason**: It is a requirement of the Planning and Development Act 2000, as amended, that a condition requiring a contribution in accordance with the |

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| | Development Contribution Scheme made under section 48 of the Act be applied to the permission. |

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.

**Alaine Clarke**
Senior Planning Inspector

28th November 2024

**Appendix 1:**

**Appropriate Assessment Screening**

# Appendix 1 – AA Screening Determination

**Screening for Appropriate Assessment**
**Finding of likely significant effects**

I have considered the proposed windfarm development comprising the erection of 18 no. wind turbines in light of the requirements of S177U of the Planning and Development Act 2000 as amended.

The proposed development site is located at Oweninny Bog in north Co. Mayo and comprises c. 2,282 ha. The site comprises cutaway bog, with industrial scale milled peat production operations having formerly occurred at the site for over 50 years and which supplied the ESB Bellacorick peat fired power station. Bellacorick windfarm consisting of 21 turbines are centrally located on the site. The proposed development is located to the east of two wind farm developments, the Oweninny Wind Farm Phase 1, located immediately west/northwest (29 turbines), and Oweninny Wind Farm phase 2 to the west (31 turbines). There are an existing 21 turbines on site which it is proposed to be removed as part of the proposed development. There are several other permitted and operational windfarms in the wider area in which are located within a 20km radius of the site.

The site is located directly adjacent to the Oweninny River within the Blacksod-Broadhaven WFD catchment, flowing in a southerly direction, before discharging into the main tributary of the Owenmore River, at Ballacorick. Owenduff/Nephin Complex SAC and SPA further downstream. Other watercourses on the site include the Fiddaunfura river which flows through the Bellacorick Bog Complex SAC and the Shanvolahan River which is hydrologically connected to the River Moy SAC and Lough Conn and Lough Cullin SPA.

Lough Dahybaun SAC is located within the site near the southern boundary. Bellacorick Iron Flush SAC is located c.400m to the north of the site. Bellacorick Bog Complex SAC adjoins the site to the east. Owenduff/Nephin Complex SAC and SPA lies c. 3.8km to the southwest and Carrowmore Lake Complex SAC lies c. 4.5km west of the proposed development. Other Natura 2000 sites occur in the wider area.

The proposed development comprises:

- Erection of 18 no. wind turbines (overall tip height of 200m) and all associated foundations and hard-standing areas;
- Decommissioning and removal of 21 no. existing Bellacorick Wind Farm wind turbines;
- Construction of new internal site access roads, approx. 29km in length (permanent and temporary), passing bays, car parking and associated drainage;
- Construction of an amenity route through the site to the existing Visitors Centre with access from a local road off the N59 near Dooleeg;
- 2 no. borrow pits, comprising c. 46.3 ha, of which 13.3ha are considered for optimum extraction;
- 5 no. peat deposition areas;
- Installation of 1 No. permanent Meteorological Mast 120m high, and the removal of an existing 100m Meteorological Mast on site;
- 4 no. temporary construction compounds, including material storage, site welfare facilities, and site offices;
- 1 no. 110kV electrical substation compound. The electrical substation will have 2 No. control buildings, a 36m high telecommunications tower, associated electrical plant and equipment and a wastewater holding tank.
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed substation;
- Underground electrical cable from the proposed on-site electrical sub-station to the existing substation at Bellacorick;
- All related site works and ancillary development including:

- Earthworks;
- Peat management works;
- Site security;
- Groundwater and surface water management;
- Overburden (soils/peat) storage and management; and
- Site reinstatement, landscaping and erosion control.

A total of five streams will be crossed as part of the development, in addition to a number of internal drain crossings using typical culverts. Four of the five stream crossings will use existing bridges, with one new clear span bridge required to access T16. The new bridge will cross the river Fiddaunfura.
A description of the proposed development is set out in section 3.0 of the Appropriate Assessment Screening Report.

**Consultations and submissions**
I note that the applicant has consulted with relevant nature conservation bodies.
The Development Applications Unit have submitted two observations on behalf of the Department of Housing, Local Government and Heritage (DHLGH). The first submission raised the following related to the appropriate assessment process:

- Considered that effects on the Owenduff/Nephin SPA are uncertain and it should be screened in.
- Impacts on Golden plover.
- Impacts on Merlin.
- Queries the methodology used to determine the significance of collision mortality including the sue of arbitrary thresholds.
- Discrepancies in relation to collision risk calculations.

The second submission, following a request for additional information and the submission of a revised AA screening Report and NIS, raised the following related to the appropriate assessment process:

- the applicant's response does not adequately address concerns relating to the appropriate reference population for determining the significance of collision mortality impacts.
- Impacts on Golden plover.

Other submissions from the public (Peter Sweetman & Associates, Rob Deane and John G Moyles Senior & Family) raise the following issues:

- The application fails "on all three functions" citing the omission of Owenduff/Nephin Complex SPA when the test is that it is merely necessary to determine that there may be a significant effect.
- The AA screening is fundamentally flawed and it is not possible to make an informed submission on the NIS.
- Measures deemed to be mitigation measures by the applicant are not mitigation measures – not precise and not capable of removing all reasonable scientific doubt.
- References case law regarding the trigger for AA, mitigation measures, assessment cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt.
- References 6 no. European sites that have been significantly impacts by Phase 1 and 2 Oweninny Windfarm.
- Concern over impact on the 'Formoyle Flush', citing conservation objectives.

**Potential impact mechanisms from the project alone or in-combination likely to affect identified European Sites [consider direct, indirect, temporary/permanent impacts that could occur during construction, operation and, if relevant, decommissioning]**
**Construction**

- **Runoff of Sediment and/or Construction Pollution** - may result in the sedimentation of nearby watercourses. Increased silt loading in watercourses can

stunt aquatic plant growth, limit dissolved oxygen capacity and reduce the overall ecological quality of watercourses. The runoff of contaminated surface water can result in the degradation of water quality and impacts to aquatic fauna and flora, particularly if concrete is present.

- **Impacts to Groundwater -** include deterioration or lowering of the water table during the excavation of turbine foundations, hardstanding areas, borrow pits, substation, internal haul roads and amenity roads, grid connection cabling.
- **Invasive Species -** The spread of Rhododendron (on site) has the potential to outcompete other floral species, reducing the diversity and/or altering habitats conditions or structure.
- **Dust -** could lead to dust deposition on vegetation which can inhibit plant growth.
- **Noise and disturbance –** An increase in noise levels, disturbance and lighting may result in disturbance to wildlife within the immediate vicinity of the site. Fugitive lighting could deter movement of species in the area.

**Operation**

- **Fuels & Hydrocarbons -** movement of vehicles may lead to occasional accidental emissions in the form of lubricants and/or fuel, which could cause localised contamination of site drainage channels or other watercourse within the site.
- **Collision Risk (mortality) –** The potential for birds to collide with turbines is one of the main impacts to consider in the assessment of possible impacts of an operating wind farm.
- **Noise, Disturbance Displacement and Barrier Effect –** turbines can potentially deter birds from using the area and its surroundings, resulting in a disturbance displacement effect. Disturbance can result in a significant impact if it reduces the availability of resources for avian receptors. An additional possible disturbance effect is the disruption to flight lines, which may result in a wind farm acting as a partial barrier to bird movements.

**Decommissioning Phase**

Decommissioning phase effects will be similar to the construction phase but the potential for likely significant effects considerably less.

**In-combination Effects**

The applicant's AA Screening Report does not explore the issue of in-combination effects. This detail in provided in the NIS.

I consider the following plans and projects may contribute to in-combination effects:

- Oweninny Phase 1 (29 no. turbines) - operational
- Oweninny Phase 2 (32 no. turbines) – under construction
- ABO Sheskin (8 no. turbines) – under construction
- Sheskin South (21 turbines) - consented
- Dooleeg Wind Turbine (1 turbine) – consented
- Mayo Green Hydrogen Production Plant
- Glenora (22 no. turbines) – in planning/with ABP
- 114 Megawatt gas fired electricity generating station - consented

**European Sites identified for the screening test**

15 no. European sites are located within a potential zone of influence of the proposed development. These are:

| | | | | |
|---|---|---|---|---|
| Lough Dahybaun SAC | River Moy SAC | Carrowmore Lake Complex SAC | Lough Conn and Lough Cullin SPA | Killala Bay/Moy Estuary SPA |

| | | | | |
|---|---|---|---|---|
| Bellacorick Bog Complex SAC | Owenduff/Nephin Complex SAC 000534 | Glenamoy Bog Complex SAC | Newport River SAC | Blacksod Bay/Broad Haven SPA |
| Bellacorick Iron Flush SAC | Owenduff/Nephin Complex SPA | Slieve Fyagh Bog | Carrowmore Lake SPA | Illanmaster SPA |

I note that the applicant included a greater number of European sites in their initial screening consideration. I have only included those sites with any possible ecological connection or pathway in this screening determination.

**Lough Dahybaun SAC (site code 002177)**
https://www.npws.ie/protected-sites/sac/002177

| **Qualifying Interests** |
|---|
| [1833] Slender Naiad (Najas flexilis) |

**The development site transects the Site.** Lough Dahybaun is an oligotrophic lake surrounded by blanket bog, much of which has been cut or planted with coniferous trees. The SAC is hydrologically connected to the proposed development site via the Muing River. Groundwater input and the hydrological regime of the lake are important factors for the QI.
**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is potential for indirect effects of contamination of surface waters from sediment-laden surface water run-off from construction works and from accidental spillages of fuel. There is also a risk of the spread of invasive species. There is no potential for groundwater impacts which could affect the QI as proposed construction works in this part of the development site will not impact groundwater.
I concur with the applicant to **screen in** this SAC for further assessment (Stage 2).

**Bellacorick Bog Complex SAC (site code 001922)**
https://www.npws.ie/protected-sites/sac/001922

| **Qualifying Interests** | |
|---|---|
| [3160] Dystrophic Lakes | [7230] Alkaline Fens |
| [4010] Wet Heath | [1013] Geyer's Whorl Snail (Vertigo geyeri) |
| [7130] Blanket Bogs (Active)* | [1528] Marsh Saxifrage (Saxifraga hirculus) |
| [7150] Depressions on peat substrates of the Rhynchosporion | |

**Located directly adjacent to Site.** This site contains some of the most extensive areas of lowland blanket bog remaining in Ireland, with outstanding pool development. The SAC is designated for a range of habitats and species. The proposed development is hydrologically connected to the protected site via surface water and ground water links. The Fiddaunfura river will be crossed via a new bridge. Other drains to the east of the site will be crossed via typical culverts. This river and drains typically drain to the east and through the Bellacorick Bog Complex SAC to the east. Part of Bellacorick Bog Complex SAC shares the same groundwater body as part of the proposed development site i.e. Bellacorick-Killala GWB.
**Potential significant effects:** The proposed development will not result in any direct effects on the SAC. The QIs are either not surface water dependent or are considered to have relatively low sensitivity to suspended sediments or other pollutants. There is no potential for habitat loss/degradation from surface water run-off of sediments and pollutants from the site machinery and/or storage materials. The conservation objectives of the SAC would not be compromised in the event of a minor release of suspended

sediments or pollutants. In addition, the nearest construction works will be c. 220m from the SAC (peat deposition area at turbine 13) and thus, occur outside the ZoI of dusts effects.
With respect to groundwater, limited groundwater flow occurs due to deep till deposits on site. Infiltration to groundwater on the site is low based on the peat soils and deep, low permeability soils. No change in groundwater quality is expected. No significant change in groundwater is expected. Slight localised drawdown is predicted at the borrow pit locations however no sensitive receptors are located near borrow pits (nearest borrow pit to the SAC is 950m).
The applicant has screened out likely significant effects on the SAC because potential source pathway impacts are not connected to any of the sites qualifying interest species or habitat. Based on the information provided by the applicant and the reasons set out above and having regard to standard pollution controls that would be employed regardless of proximity to a European site and effectiveness of same, I concur that the SAC can be **screened out** from further assessment.

**Bellacorick Iron Flush SAC (site code 000466)**
https://www.npws.ie/protected-sites/sac/000466

| Qualifying Interests |
|---|
| [1528] Marsh Saxifrage (Saxifraga hirculus) |

**Located circa 500m** from the proposed development site, the Bellacorick Iron Flush is situated on the headwaters of the Sruffaunnamuingabatia, a tributary of the Owenniny River. The site contains a small minerotrophic fen developed on glacial till overlying calcareous sandstone. The entire site is surrounded by drains and extensive areas of mechanically-cut peat. The QI, Marsh saxifrage (Saxifraga hirculus), requires the presence of groundwater close to the surface, but the species will not tolerate long periods of flooding and the water should be moving or flowing to some extent.
**Potential significant effects**: The proposed development site is not connected to any of the sites qualifying interest species or habitat and no direct effects on the SAC will arise. No surface water connection and is outside the zone of dust effects. There is no potential for the introduction of invasive plant species. The SAC and the proposed development site share the same groundwater body – Belmullet GWB. Chapter 10 of the EIAR, Hydrogeology, states all of the proposed development areas in the vicinity of the Bellacorick Iron Flush SAC are significantly outside the groundwater recharge area and surface water catchment area to the flush, Figure 10.9 of the EIAR also refers. The EIAR refers to previous studies which found that the zone of contribution to the flush does not extend into the Phase 3 development. As there are no construction works in the ground water catchment of the iron flush, there is no potential to impact on groundwater flows or surface water to the flush area or for impacts to the qualifying interests.
Based on the information provided by the applicant and the reasons set out above I concur that the SAC can be **screened out** from further assessment

**River Moy SAC (site code 002298)**
**https://www.npws.ie/protected-sites/sac/002298**

| Qualifying Interests | |
|---|---|
| [6510] Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) | [91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* |
| [7110] Active raised bogs* | [1092] White-clawed Crayfish Austropotamobius pallipes |

| | |
|---|---|
| [7120] Degraded raised bogs still capable of natural regeneration | [1095] Sea Lamprey Petromyzon marinus |
| [7150] Depressions on peat substrates of the Rhynchosporion | [1096] Brook Lamprey Lampetra planeri |
| [7230] Alkaline fens | [1106] Salmon Salmo salar |
| [91A0] Old sessile oak woods with Ilex and Blechnum in the British Isles | [1355] Otter Lutra lutra |

**This SAC is hydrologically located c. 8.1.km to the south-east** and is designated for five aquatic Qualifying Interest species within the SAC. This SAC is connected via the Shanvolahan River and Deel River. The SAC is designated for otter and there is potential that otter forage, commute and breed upstream of the River Moy. Atlantic salmon, Sea lamprey and brook lamprey may migrate, feed and spawn upstream along the Moy River in proximity to the proposed development site.
**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is potential for indirect effects of contamination of surface waters from sediment-laden surface water run-off from construction works and from accidental spillages of fuel which could result in habitat loss/degradation to habitats which support the aquatic species within the SAC and potential for disturbance to otter which is sensitive to anthropogenic disturbance. The habitat QIs at a distance of c. 8km downstream and beyond of the proposed development site are not considered to be at risk having regard to the distance to the SAC and given that the habitat QIs are considered to have relatively low sensitivity to suspended sediments or other pollutants.
Based on the foregoing I concur with the applicant to **screen in** this SAC for further assessment (Stage 2).

**Owenduff/Nephin Complex SAC (site code 000534)**
**https://www.npws.ie/protected-sites/sac/000534**

| Qualifying Interests | |
|---|---|
| [3110] Oligotrophic Waters containing very few minerals of sandy plains (Littorelletalia uniflorae) | [7130] Blanket Bogs (Active)* |
| [3160] Natural dystrophic lakes and ponds | [7140] Transition Mires and quaking bogs |
| [3260] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation | [1106] Atlantic Salmon (Salmo salar) |
| [4010] Northern Atlantic wet heaths with Erica tetralix | [1355] Otter (Lutra lutra) |
| [4060] Alpine and Boreal Heaths | [6216] Slender Green Feather-moss (Hamatocaulis vernicosus) |
| [5130] Juniperus communis formations on heaths or calcareous grasslands | [1528] Marsh Saxifrage (Saxifraga hirculus) |

**This SAC is located c.3.8km southwest** of the proposed development site. It is designated for two aquatic QI species, salmon and otter and a number of water dependent habitats. The development site is hydrologically connected to the protected

site via surface waters (Owenmore River), which flows along the northern boundary of the SAC.

**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is however potential for a degradation of water quality as a result of the proposed development that could result in likely significant effects on the foraging, commuting or breeding of Atlantic Salmon and Otter. There is potential for disturbance to otter which is sensitive to anthropogenic disturbance. The remaining QIs are stated to be located upstream of the Owenmore River or are terrestrial habitats or species with no links to surface waters. There is no potential for dust effect or the introduction of invasive plant species due to distance from the proposed development site.

Based on the foregoing I concur with the applicant to **screen in** this SAC for further assessment (Stage 2).

**Owenduff/Nephin Complex SPA (site code 004098)**

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004098.pdf

| **Special Conservation Interests** |
|---|
| [A098] Merlin (Falco columbarius |
| [A140] Golden plover (Pluvialis apricaria) |

**This SPA is located c.3.8km southwest** of the proposed development site and designated for breeding populations of the two bird species listed above. The development site is hydrologically connected to the protected site via surface waters (Owenmore River), which runs along the northern boundary of the SPA.

**Potential significant effects**: The proposed development will not result in any direct effects on the SPA. There is no potential for dust effect or the introduction of invasive plant species due to distance from the proposed development site. As the proposed development is within the range of both species (5km for Merlin, 3-11km for Golden plover, SNH 2016), there is potential for injury or mortality due to turbine collision during the operational phase for the SCI. There is also potential loss of suitable foraging habitat and SCI species disturbance and displacement, during the operational phase.

Based on the foregoing I concur with the applicant to **screen in** this SPA for further assessment (Stage 2). The decision to screen in this SPA was following a request for further information, having regard to the concerns raised by the Department of Housing, Local Government & Heritage.

**Carrowmore Lake Complex SAC (site code 000476)**

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000476.pdf

| **Qualifying interests** | |
|---|---|
| [7130] Blanket bogs (* if active bog) | [1393] Slender Green Feather-moss Drepanocladus vernicosus |
| [7150] Depressions on peat substrates of the Rhynchosporion | [1528] Marsh Saxifrage Saxifraga hirculus |

**This SAC is located c.3.5km west** of the proposed development site. The QIs are groundwater-related habitats or species. There is no surface water hydrological connectivity between the proposed development site and the SAC. Both the SAC and the proposed development site are located within the same groundwater body (Bellmullet GWB) and therefore hydrogeological connectivity exists.

**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is no potential for indirect impacts because:

- there is no surface water connection to the SAC;
- distance to site (no dust impacts);
- given the distance to the SAC there is no potential for impacts to the QIs from sharing a groundwater body.

Based on the foregoing I concur with the applicant to **screen out** this SAC for further assessment (Stage 2).

**Glenamoy Bog Complex SAC (site code 000500)**

Glenamoy Bog Complex SAC | National Parks & Wildlife Service (npws.ie)

| Qualifying interests | |
|---|---|
| [1106] Salmon Salmo salar | [3160] Natural dystrophic lakes and ponds |
| [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts | [4010] Northern Atlantic wet heaths with Erica tetralix |
| [1393] Slender Green Feather-moss Drepanocladus vernicosus | [5130] Juniperus communis formations on heaths or calcareous grasslands |
| [1395] Petalwort Petalophyllum ralfsii | [7130] Blanket bogs (* if active bog) |
| [1528] Marsh Saxifrage Saxifraga hirculus | [7140] Transition mires and quaking bogs |
| [21A0] Machairs (* in Ireland) | [7150] Depressions on peat substrates of the Rhynchosporion |

**This SAC is located c.7.3km northwest** of the proposed development site. There is no surface water hydrological connectivity between the proposed development site and the SAC. The SAC and the proposed development site are separated by a different groundwater bodies (Bangor GWB) and therefore no hydrogeological connectivity exists.
**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is no potential for indirect impacts because:

- there is no surface water or hydrogeological connection to the SAC;
- distance to site (no dust impacts).

Based on the foregoing I concur with the applicant to **screen out** this SAC for further assessment (Stage 2).

**Slieve Fyagh Bog SAC (site code 000542)**

Slieve Fyagh Bog SAC | National Parks & Wildlife Service (npws.ie)

| Qualifying Interests |
|---|
| [7130] Blanket bogs (* if active bog) |

**This SAC is located c.8km northwest** of the proposed development site. There is no surface water hydrological connectivity between the proposed development site and the SAC. The SAC and the proposed development site are separated by a different groundwater bodies (Bangor GWB) and therefore no hydrogeological connectivity exists.
**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is no potential for indirect impacts because:

- there is no surface water or hydrogeological connection to the SAC;
- distance to site (no dust impacts).

Based on the foregoing I concur with the applicant to **screen out** this SAC for further assessment (Stage 2).

**Lough Conn and Lough Cullin SPA (site code 004228)**

Lough Conn and Lough Cullin SPA | National Parks & Wildlife Service (npws.ie)

| Special Conservation interests | |
|---|---|
| [A061] Tufted Duck (Aythya fuligula) | [A395] Greenland White-fronted Goose (Anser albifrons flavirostris) |
| [A065] Common Scoter (Melanitta nigra) | [A999] Wetland and Waterbirds |
| [A182] Common Gull (Larus canus) | |

**This SPA is located c.11km southeast** of the proposed development site. The development site is hydrologically connected to the protected site via surface waters (the Shanvolahan and Deel rivers), which enters the north of lough Conn, c. 30km downstream of the proposed development site. Both Tufted duck and Common gull species were recorded within the study area over the survey period. The Common scoter was not recorded within the study area over the survey period.

**Potential significant effects**: The proposed development will not result in any direct effects on the SPA. There is no potential for dust effect or the introduction of invasive plant species due to distance from the proposed development site.

The proposed development site is not within the foraging range of the SCI species for Greenland white-fronted goose (core range of 5-8km, SNH 2016). No Greenland White-fronted Geese were recorded with the study are of the Proposed Development over the entire survey period. There is therefore no potential for Disturbance/Displacement impacts on this SCI species.

Core foraging ranges have not been described for Tufted Duck, Common Gull or Common Scoter. The states that the habitats within the proposed development site boundary are considered to be sub-optimal compared to other habitats though I note both the Common Gull and Tufted Duck were recorded on site

Having regard to the foregoing there is no potential for injury or mortality due to turbine collision during the operational phase for the Common Gull and Tufted Duck. There is also potential loss of suitable foraging habitat for these species.

The applicant screened in the site for further assessment due to potential degradation in water quality which could result in indirect effects of the SCI species within the SPA.I disagree with the applicant's reasoning behind screening in this SPA. I consider this SPA should be **screened in** for further assessment (Stage 2) having regard to the presence of Common Gull and Tufted Duck in the proposed development site.

**Newport River SAC (site code 002144)**

Newport River SAC | National Parks & Wildlife Service (npws.ie)

| Qualifying Interests |
|---|
| [1029] Freshwater Pearl Mussel *Margaritifera margaritifera* |
| [1106] Salmon *Salmo salar* |

**This SAC is located c.12.5km south** of the proposed development site. There is no surface water hydrological connectivity between the proposed development site and the SAC. The SAC and the proposed development site are located within different groundwater bodies (Malranny GWB and Bellmullet GWB & Bellacorick-Killala GWB) and therefore no hydrogeological connectivity exists.

**Potential significant effects**: The proposed development will not result in any direct effects on the SAC. There is no potential for indirect impacts because:

- there is no surface water or hydrogeological connection to the SAC;
- distance to site (no dust impacts).

Based on the foregoing I concur with the applicant to **screen out** this SAC for further assessment (Stage 2).

**Carrowmore Lake SPA (site code 004052)**
Carrowmore Lake SPA | National Parks & Wildlife Service (npws.ie)

| Special Conservation Interests |
|---|
| [A191] Sandwich Tern (Sterna sandvicensis) |

**This SPA is located c.14km west** of the proposed development site. No surface water connection or source-pathway-receptor connection exists between the SPA and the proposed development site.
There were no recordings of Sandwich tern over the course of the survey period. I note the applicant's AA Screening Report which states that Sandwich Terns can have a large foraging range (30-70km) and noted that is no habitat within the proposed development site to support the SCI as they are almost exclusively marine feeders.
**Potential significant effects**: The proposed development will not result in any direct effects on the SPA. There is no potential for indirect impacts due to distance to site and the proposed development site is considered unsuitable habitat for the SCI species.
Based on the foregoing I concur with the applicant to **screen out** this SPA for further assessment (Stage 2).

**Killala Bay/Moy Estuary SPA (site code 004036)**
Killala Bay/Moy Estuary SPA | National Parks & Wildlife Service (npws.ie)

| Special Conservation interests | |
|---|---|
| [A137] Ringed Plover (*Charadrius hiaticula*) | [A157] Bar-tailed Godwit (*Limosa lapponica*) |
| [A140] Golden plover (*Pluvialis apricaria*) | [A160] Curlew (*Numenius arquata*) |
| [A141 ]Grey Plover (*Pluvialis squatarola*) | [A162] Redshank (*Tringa totanus*) |
| [A144] Sanderling (*Calidris alba*) | Wetland and Waterbirds [A999] |
| [A149] Dunlin (*Calidris alpina*) | |

**This SPA is located c.14km northeast** of the proposed development site. A surface water pathway exists between the proposed development site and this SPA via the Kilfian South and Cloonaghmore rivers which flow south approx..24km downstream into the SPA.
**Potential significant effects**: The proposed development will not result in any direct effects on the SPA and there is no potential for the disturbance of SCI species within the SPA given the separation distance. There is no potential for dust effect or the introduction of invasive plant species due to distance from the proposed development site.
Ringed Plover and Golden plover were recorded on site during the bird surveys. Dunlin, Curlew and Redshank were recorded outside the proposed development boundary but proximate to it during the bird surveys. There were no recordings of Grey Plover, Sanderling and Bar-tailed Godwit.
The proposed development site is outside the foraging range of Golden plover (3-11km, SNH 2016) and Curlew (1-2km, SNH, 2016). Core foraging ranges have not been described for Ringed Plover, Dunlin or Redshank. Given the presence of these SCI species within or proximate to the development site there is potential for injury or mortality due to turbine collision during the operational phase for these potential SCI species. There is also potential loss of suitable foraging habitat and potential SCI species displacement.

The applicant screened in the site for further assessment due to potential degradation in water quality which could result in indirect effects of the SCI species within the SPA.I disagree with the applicant's reasoning behind screening in this SPA. I consider this SPA should be **screened in** for further assessment (Stage 2) having regard to the presence of Ringed Plover, Dunlin, Curlew and Redshank proximate to or within the proposed development site.

**Blacksod Bay/Broad Haven SPA (004037)**
https://www.npws.ie/protected-sites/spa/004037

| **Special Conservation interests** | |
|---|---|
| [A001] Red-throated Diver (*Gavia stellata*) | [A144] Sanderling (*Calidris alba*) |
| [A003] Great Northern Diver (*Gavia immer*) | [A149] Dunlin (*Calidris alpina*) |
| [A007] Slavonian Grebe (*Podiceps auritus*) | [A157] Bar-tailed Godwit (*Limosa lapponica*) |
| [A046]Light-bellied Brent Goose (*Branta bernicla hrota*) | [A160] Curlew (*Numenius arquata*) |
| [A065] Common Scoter (*Melanitta nigra*) | [A191] Sandwich Tern (*Sterna sandvicensis*) |
| [A069] Red-breasted Merganser (*Mergus serrator*) | [A466] Dunlin (*Calidris alpina schinzii*) |
| [A137] Ringed Plover (*Charadrius hiaticula*) | [A999] Wetland and Waterbirds |

**This SPA is located c.17km west** of the proposed development site. The development site is hydrologically connected to the protected site via the Owenmore River which flow approximately 30km downstream into the SPA.
**Potential significant effects**: The proposed development will not result in any direct effects on the SPA and there is no potential for the disturbance of SCI species within the SPA given the separation distance. There is no potential for dust effect or the introduction of invasive plant species due to distance from the proposed development site.
Of the thirteen SCI species listed above for this SPA, only the Ringed Plover was recorded on the proposed development site during the bird surveys. A further two species, Dunlin (Calidris alpina) and Curlew were recoded proximate to the proposed development site.
The proposed development site is outside the foraging range of Curlew (1-2km, SNH, 2016). There is therefore no potential for impacts on this SCI species. Core foraging ranges have not been described for Ringed Plover or Dunlin. Given the presence of these SCI species within or proximate to the development site there is potential for injury or mortality due to turbine collision during the operational phase for these potential SCI species. There is also potential loss of suitable foraging habitat and potential SCI species displacement.
The applicant screened in the site for further assessment due to potential degradation in water quality which could result in indirect effects of the SCI species within the SPA.I disagree with the applicant's reasoning behind screening in this SPA. I consider this SPA should be **screened in** for further assessment (Stage 2) having regard to the presence of Ringed Plover and Dunlin proximate to or within the proposed development site.

**Illanmaster SPA (004074**
https://www.npws.ie/protected-sites/spa/004074

| Special Conservation Interests |
|---|
| Storm Petrel (Hydrobates pelagicus) [A014] |

**This SPA is located c.22km northwest** of the proposed development site. The development site is not hydrologically connected to the protected site.
**Potential significant effects**: The proposed development will not result in any direct effects on the SPA. There is no potential for dust effect or the introduction of invasive plant species due to distance from the proposed development site. The applicant's AA Screening Report notes that There is potential that Storm petrel may be connected to the Proposed Development site via their large foraging range. However, Storm Petrel are exclusively marine feeders meaning they do not have to travel to or through the site due to the location of the SPA. It further notes there were no recordings of Storm petrel over the course of the survey period and there is no habitat within the Proposed Development site to support the SCI.
Based on the foregoing I concur with the applicant to **screen out** this SPA for further assessment (Stage 2).

**Overall Conclusion- Screening Determination**
In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of objective information provided by the applicant, I conclude that the proposed development could result in significant effect either individually or in-combination with other plans and projects on the protected birds and habitat of the following Natura 2000 sites in view of their conservation objectives of a number of qualifying interest features of those sites:

- Lough Dahybaun SAC (site code 002177)
- Owenduff/Nephin Complex SAC (site code 000534)
- Owenduff/Nephin Complex SPA (site code 004098)
- River Moy SAC (site code 002298);
- Lough Conn and Lough Cullin SPA (site code 004228);
- Killala Bay/Moy Estuary SPA (site code 004036); and
- Blacksod Bay/Broad Haven SPA (site code 004037).

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'.
No measures intended to avoid or reduce harmful effects on European sites were taken into account in reaching this conclusion.

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**Appendix 2**

**Technical Report, Blackstaff Ecology Ltd**

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**Appendix 3**

**Technical Note of Dr. Maeve Flynn, Inspectorate Ecologist, dated 26th November 2024**