Inspector's Report

ABP-315933-23

Development	Proposed development of 21 no. wind turbines and all associated works.
Location	Sheskin, Co. Mayo.
Planning Authority	Mayo County Council.
Applicant(s)	Sheskin South Renewables Power DAC.
Type of Application	Strategic Infrastructure, Section 37E.
Submissions	Mayo County Council, Department of Defence, Inland Fisheries Ireland, Transport Infrastructure Ireland, Northern and Western Regional Assembly, Irish Water, Department of Housing, Local Government and Heritage.
Public Submissions	Martin and Catherine Doherty.
Date of Oral Hearing	None.
Date of Site Inspection	24th July 2023.
Inspector	Deirdre MacGabhann.

Contents

1.0 Introduction

1.1. This application, under section 37E of the Planning and Development Act, 2000 (as amended) (P&D Act), is for 21 no. wind turbines and associated works in the townland of Sheskin, County Mayo.

1.2. Project Background

1.2.1. Under ABP-3105290-21 Sheskin South Renewables Power DAC requested pre-application consultations with the Board under Section 37B of the Planning and Development Act, 2000 (as amended) for the construction of 21 no. wind turbines with a maximum blade tip height of 200m, at the subject site. The status of the proposed development was confirmed by the Board in a letter to the applicant dated the 9th August 2022 that the development comprised strategic infrastructure within the meaning of section 37A of the P&D Act, and that an application for permission should be made directly to the Board.

1.2.2. The records of the pre-application meetings, copied to the applicants, also contained a list of Prescribed Bodies that copies of the application should be forwarded to. This application to the Board comprises the proposed windfarm and ancillary infrastructure subsequent to the pre-application process.

1.3. Site Location and Description

1.3.1. The c.1010ha subject site is situated within an existing commercial forestry plantation on upland bog, in the townland of Sheskin, County Mayo. The site lies immediately south east of Slieve Fyagh, c.7km to the north east of the village of Bangor Erris and c.4.5km to the north west of Bellacorrick. The Atlantic lies c. 14km to the north of the site. Elevation is between c.110mAOD in the southeast and c.295mAOD in the west.

1.3.2. Access to the site is via an existing forestry road situated to the south east of the site (Site Layout Plan, Sheet 2/2, Drawing no. 201119-05). The forestry road joins a local county road, the L52926, that runs along the eastern boundary of the site and which forms part of the Western Way, a long distance walking route. Approximately 2.5km to the south of the site the L52926 joins the N59 national road between Crossmolina and Bangor.

1.3.3. At the time of site inspection, the L52926 has been widened and upgraded, from the N59 extending beyond the site to the north of it, to facilitate construction of Sheskin Wind Farm (on-going) (Figure 2-3, EIAR). To the east of the site, and L52926, are wind turbines forming part of Oweninny and Bellacorrick wind farms (Figure 2-3 and Planning History). The existing wind turbines are visible in the immediate area of the site, in particular from the south and the minor roads to the north east of it. Views from the west and north west are largely screened by topography and vegetation.

1.3.4. Sheskin Lodge lies to the east of the wind farm site, west of the L52926/Western Way. It is in a derelict state and access to it is overgrown.

1.4. Documentation

1.4.1. The application documentation includes:

- An Environmental Impact Assessment Report (EIAR):
  - Volume 1 – Non Technical Summary and Main Report.
  - Volume 2 – Photomontage Booklet.
  - Volume 3a – Appendices 2-1 to 6-6.
  - Voume 3b – Appendices 7-1 to 14-2.
- Natura Impact Statement (NIS).
- Planning Drawings.
- Landowner consent letter (Coillte).

2.0 **Proposed Development**

2.1.1. The proposed windfarm development is described in detail in section 4 of the EIAR. In summary it comprises:

- **21 no. wind turbines**, with a total tip height of 200m above the top of foundation, hub height 115m and rotor diameter 170m. Foundation levels range from 124.5m OD (T21) to 235.5mOD (T8). The turbines are situated in the existing forestry plantation. Some of the forestry will be felled to accommodate the wind farm, with the application stating that c.117ha of commercial forestry will require replacement elsewhere in the State, subject to licence (Appendix 2-4, EIAR). It is stated in section 2.8.2.3 of the EIAR that the location of any replanting would be greater than 10km from the wind farm site and outside of the catchment within which the project is proposed. The proposed development will not commence until a felling and afforestation licence(s) are in place.
- Total **generating capacity of between 126MW and 189MW**, based on a minimum output of 6MW and maximum output of 9MW per turbine (enough to supply between c.92,000 households to c.138,000 households or 70% to 100% of the households in County Mayo, section 4.3.1.5 EIAR).
- Turbines are arranged around c.7.8km of existing **internal access roadways/tracks**, which require upgrading, and c.14.2km of **new access road** to be constructed (Site Layout Plan Sheet 1 of 2 and 2 of 2). Existing tracks will be widened, filled and overlaid as per the per the methodology set out in Appendix 4-2 'Peat and Spoil Management Plan'. New roads will be constructed by excavation and filling with finished capping layer (also set out in Appendix 4-2). Finished roads will have a width of 5.0m with wider sections in some locations, on bends and corners. Prior to the construction of access roads, movement monitoring posts will be installed in areas where peat depth >2m (section 4.2 and Appendix 4-2, EIAR).
- The EIAR states that the size of the **foundation** will depend on the final turbine supplier and a foundation area large enough to accommodate modern

turbine models has been assessed in the EIAR[1]. Formation of turbine foundations is described in section 4.3.1.3. Hardstanding areas to accommodate cranes during assembly and erection of turbine, offloading and storage of components and safe working area, are shown in the layout drawings (Appendix 4-1) and represent the maximum size required.

- All associated **underground electrical and communications cabling** (see section 4.3.6, EIAR). Each turbine will be connected to the onsite electricity 110kV substation and wind farm control buildings (not forming part of the planning application, section 4.3.5, EIAR) via an underground 33/66kV electricity cable and fibre optic cabling. The route of the cable ducts will follow the access track to each turbine location. A battery based energy storage system (BESS) will be located within the 110kV substation compound.
- **1 no. permanent meteorological mast**, 115m in height, and associated hardstanding. This structure is situated to the west of the site, south of T5.
- The upgrading of 2 no. existing **site entrances** and the provision of 1 no. **new site entrance** (Figure 4-1b and layout drawings in Appendix 4-1). These are situated to the south east, middle and north east of the site, off the L52926.
- It is stated that excavated peat from the construction phase (turbines, hardstanding, access roads etc.) will be either temporarily stockpiled locally at turbine hardstandings, transported immediately to one of two no. borrow pits to be located within the site or to one of the 12 no. designated peat placement areas (see Figure 4-1b and section 4.3.4.3, EIAR for construction methodology for peat placement areas). Estimated volume of peat, and spoil, to be excavated from the site is shown in Table 5-1, Appendix 4-2 '**Peat and Spoil Management Plan**'.
- The two **borrow pits** to be established (Figure 4-1b) will provide the majority of rock and hardcore material required during construction, with extraction by principally rock breaking and blasting if required. Usable rock may also be won from other infrastructure construction e.g. turbine bases (section 4.3.3.1, EIAR). Borrow pits will be reinstated with excavated material and subsoils and

[1] The EIAR refers to the horizontal and vertical extent of a turbine's foundation in Figure 4-2. This figure is not included in the EIAR.

post construction permanently secured (fenced) and appropriate health and safety signage erected.

- The provision and use of 4 no. **temporary construction compounds** (to include 540sqm of temporary site offices/staff facilities cabins). Location of compounds is shown in Figure 4-1b, EIAR and layout of the primary compound and remaining three compounds in Figures 4-12 to 4-15, EIAR. Temporary toilets located within staff portacabins will be used during construction with wastewater directed to a sealed storage tank, with off-site disposal. Once construction has ceased, all of the compounds except for the main compound, will be decommissioned (reinstated with excavated peat and spoil and reseeded or left to regenerate, section 4.3.9, EIAR). The main Compound no. 1 will be retained and used as an amenity car park.
- The undertaking of permanent **recreation and amenity works**, including marked trails, seating areas, viewing point, amenity car park and associated signage (section 4.6, EIAR, Figure 4-20 and Appendix 4-8, Recreational Development Report).
- Arrangements for **site drainage** are set out in section 4.7, EIAR and in Appendix 4-4 **Surface Water Management Plan**. Appendix A of 4-4 provides details on drainage layout. Measures include adherence to best practice measures for construction works and the active management of water on site during construction e.g. by use of interceptor drains upgradient of works, use of check dams to control flows, drainage swales, stilling ponds and siltbusters (mobile silt trap) etc. There will be no alteration of natural drainage features, no direct discharges to any natural water course with all drainage waters being dispersed as overland flows. A buffer zone of 50m around water courses has been used to inform the layout of the development. Where access tracks (existing and proposed) cross surface water feature, 12 no. clear span bottomless box culverts will be provided (section 4.9.4 EIAR).
- Associated works for **habitat enhancement** and **biodiversity management** within the wind farm site. This includes arrangements to enhance 24.1ha of peatland to the west of T8 (**Appendix 6-6 Biodiversity Enhancement and Management Plan).**

2.1.2. The permanent footprint of the development will measure c.24.2ha (section 1.4, EIAR). **Tree felling** will be required around the footprint of the development, with 117ha of forestry to be removed (Figure 4-16, EIAR). Felling will take place under licence from the Forest Service and replacement planting will be required at an alternative site (section 4.3.10.1).

2.1.3. **Access** to the site for HGVs and abnormal loads will be via an existing forestry access road at the southeastern corner of the site, off local road L52926. The two other existing access junctions, also located on the eastern side of the site will be used to provide access for general site traffic (e.g. construction staff and LGVs). Port of entry for large turbine components will be Galway Port. Delivery route is shown in Figures 4-18a to d. Accommodation works for the turbine delivery route, are not included in the application, and comprise:

- Road widening of L52926 (Figure 4-1a) (stated to be within the curtilage of the public road corridor, section 4.4.2.1 EIAR).
- Turbine storage area L52926 (Figure 4-19).
- Road widening at the junction of the N17 and N5 National primary roads in Ballyglass East, Co. Mayo.

2.1.4. An outline **Traffic Management Plan** for the delivery of turbine components is included in Appendix 14-2.

2.1.5. Site activities will be managed in accordance with a **Construction and Environmental Management Plan**, which will be updated to include the requirements of any planning conditions (Appendix 4-3, EIAR).

2.1.6. The development will be **constructed over c.18-24 months** at any stage after the bird breeding season (April to July inclusive), i.e. from August to the end of March so that construction activities are ongoing by the time of the next breeding season. Construction sequencing is set out in section 4.8.1 EIAR. Detailed construction methodology for different elements (e.g. forestry felling, turbine foundations, grid connection cable trench etc.) are set out in section 4.9 EIAR.

2.1.7. A **10-year planning permission** and **35-year operational life span**, from the date of commissioning, is being sought. At the end of the life span the wind farm may be retained and the operational life extended or turbines replaced with new ones,

subject to planning. In the absence of this, the site will be decommissioned in accordance with the **Decommissioning Plan** set out in Appendix 4-7, EIAR.

2.1.8. **Connection to the grid** will be by separate planning application and will include a 110kV on-site sub-station compound (Figure 4-1b) and a cable to connect the on-site sub-station to the existing Bellacorrick 110kV substation, situated c.5km south east of the intended on-site sub-station, in the townland of Bellacorrick. The grid connection route will be via underground cabling to be located in existing forestry tracks, local county roads and national secondary roads (c.6.9km in total). Cable route falls within the townlands of Sheskin, Kilsallagh, Tawnaghmore and Bellacorrick. The cable route will cross 3 bridges and 9 no. culverts (Appendix 4-6, EIAR). Where there is sufficient depth, the cable will be located in the bridge deck. Otherwise it will be installed by Horizontal Directional Drilling (HDD). Existing culverts will be crossed using open trenching with either an undercrossing or an overcrossing, depending on depth of culvert.

2.1.9. The proposed development includes provision of a **Community Benefit Fund**, with the potential to make over €7m available over the lifetime of the project, with the value of the fund directly proportional to installed capacity and/or energy produced at the site (section 1.5.10 and 4.5, EIAR). The applicant has actively engaged with the community during prior to the application being made to the Board and this process is ongoing (see Appendix 2-3, EIAR). It is stated that a minimum separation distance of 1.34km between residential dwellings and the proposed development has been achieved with project design.

2.2. Environmental Impact Assessment Report (EIAR)

2.2.1. The EIAR provides the legal and policy context for the development and information on the planning history of the site. It outlines alternatives considered and provides a description of the development and its likely effects on different environmental parameters. It considers the vulnerability of the project to major accidents and natural disasters and the interaction of effects. In section 17 a schedule of mitigation and monitoring measures is provided. The EIAR study area extends beyond the application site and includes different spatial extends depending on the environmental topic being referred to. The EIAR concludes that with the implementation of proposed mitigation measures which include the design of the

development to minimise its footprint and avoid sensitive locations, the proposed development would not give rise to significant environmental effects on any environmental parameter. The EIAR conclusions were not materially altered by the information contained in the applicant's response to submissions by prescribed bodies and the public. The EIAR has been uploaded to the EPA's EIA Portal under Portal ID 2023027.

2.3. Natura Impact Statement

2.3.1. Appendix 1 of the NIS comprises an Appropriate Assessment Screening Report. It identifies the potential for significant effects on the following European sites.

- Carrowmore Lake Complex SAC (000476).
- Slieve Fyagh Bog SAC (000542).
- Glenamoy Bog Complex SAC (000500).
- Bellacorrick Bog Complex SAC (001922).
- Owenduff/Nephin Complex SAC (00534).
- Owenduff/Nephin Complex SPA (004098).

2.3.2. The likely effects of the development on the qualifying interests of these sites are considered in the NIS. The NIS concludes that, (a) in the light of best scientific knowledge in the field, all aspects of the proposed project, by itself, or in combination with other plans or projects, which may affect the relevant European Sites, have been considered, (b) the NIS contains information which enables the Board to make its determination on the basis that all reasonable scientific doubt has been removed as to the effects of the development on the integrity of European sites, and (c) that Board is enabled to ascertain that the development will not adversely affect the integrity of any of the European sites concerned.

3.0 **Planning history**

3.1. Section 2.5 of the EIAR sets out the planning history of the proposed development site and surrounding area. It adopts a period for the purposes of the search of 2017-2023, on the basis that previous applications will have been either constructed or have lapsed (large scale developments which would potentially have a 10 year permission are also considered). The history is divided into four elements, all planning applications which overlap with or fall within the subject site, all non-wind energy development within 2km of the site, all wind energy development with 20km and all developments with 200m of the proposed cable route to grid connection (developments are shown in Figure 2-3).

Overlapping with Site

- PA ref. 03/1298 (PL16.206378). Permission refused by MCC and ABP for 31 nos. wind turbines (60m hub height, 80m blade diameter, with total height not exceeding 100m), 110kV sub-station at Barroosky, Glenamoy and Sheskin townlands. This site included the subject site and land to the north of it. Reason for refusal were premature pending preparation of Wind Energy Strategy for County Mayo, location of site in proximity to designated sites and risk of contamination of water quality and adverse effects on peatland environment and natural habitats.

Wind energy within 20km of site

- These are summarised in Table 2-3 of the EIAR and relative locations are shown in Figure 2-3.
- *Sheskin Wind Farm* (PA ref. 15/825) – Permission granted for 8 no. turbines in 2016, maximum height 150m on land to north east of subject site. Permission altered under PA ref. 19/457, to include changes to height of turbines (maximum height 176m). Grid connection refused by the PA ref. 20/834 and granted by the Board ABP311157, comprising 10.4km of 38kV underground cable from wind farm site to Bellacorrick 110kV substation. Development was under construction at time of site inspection.
- *Oweninny Wind Farm*:
    - Permission originally sought for 112 turbines to be developed in three phases under PL16.PA0029, with an overall tip height of 176m on land

to the east of the subject site. During the course of the appeal phase 3 was omitted and permission sought for phases 1 and 2 comprising 61 turbines. Permission was granted by the Board for the development in June 2016. The development was subsequently altered under ABP-307073 (construction of radial underground cables, omission of substation no. 2 and overhead line/underground connection from substation no. 2). The alterations were not considered to be material to the terms of the development permitted. Phase 1 and 2 of the development appeared to be operational at time of site inspection.

    - Phase 3 – Pre-application consultation with the Board, under ABP-309375, determined that the development of between 10 and 20 wind turbines, with a maximum height of 200m was strategic infrastructure (June 2022). Turbines to be located to the south east of Phase 1 and 2. Under ABP 316178, consequent to ABP309375, permission sought for Oweninny Phase 3 on land to the south east of the subject site for 18 no. wind turbines. Case yet to be determined.

- *Dooleg More Single wind turbine*, granted under PA ref. 20/467 on land to the south east of Bellacorrick.
- *Bunnahowen Wind Farm,* granted permission under PA ref. 18/873 to modify the existing permission granted under PA ref. 08/1997 for three 1MW wind turbines, located to the northwest of the site, at distance (>14km).
- *Kilsallagh Wind Farm,* pre-application consultation with the Board, under ABP-312282, for 13 no. wind turbines at Kilsallagh (Kilsallagh townland lies to the south of Tawnaghmore, south of the N59). NB this development was scoped out as there was little detail available on it (page 2-45, EIAR).
- *Corvoderry Wind Farm*, permission granted under PA ref. 11/838 for 10 wind turbines, with overall height of 100m. Permission expired on 14th October 2022. Site situated to the north east of Bellacorrick.
- *Glenora Wind Farm,* pre-application consultation with the Board under ABP310528 in respect of wind energy development at Glenora comprising 22 no. turbines with an overall height of c.189m. The Board concluded that the development did comprise strategic infrastructure (8th May 2023). Development is situated c.7km to the north east of the subject site.

Non wind development within 2km of turbines

- No new residential development. Small number of residential extensions between in the area up to 7km from the site (see section 2.5.3).

Applications in vicinity of grid connection

- PA ref. 22/502 – Permission granted for a hydrogen production plant on land to the north of Bellacorrick, and c.1.5km to the north of Bellacorrick sub-station. The grid connection for the hydrogen plant will be subject to a separate planning application. The EIAR states that the grid connection route for the hydrogen plant is within 200m of the grid connection route for the subject development.
- PA ref. 23/60028 – Application with Mayo County Council for proposed gas peaking plant to the north of Bellacorrick, south east of the subject site (not decided).
- PA ref. 23/612 – Permission granted in August 2023 for synchronous condenser at ESB power station Bellacorrick.

3.2. In addition to the foregoing, I note that under ABP311862, Bord na Móna, in November 2021, sought leave to apply for substitute consent for peat extraction on lands to the east of the subject site and L52926. The case was due to be decided by March 2022.

4.0 Legislative and Policy Context

4.1. The legislative and policy context for the proposed development is set out in section 1.5 and Chapter 2 of the EIAR (sections 2.2 to 2.4). A summary of the key legal requirements and policy documents are set out below.

4.2. **International Policy**

- Kyoto Principle – Operationalises the United Nations Framework Convention on Climate Change (UNFCCC) and commits industrialised countries/economies to limit and reduce GHG emissions in accordance with agreed targets.
- COP21 Paris Agreement, COP25 Madrid, COP26 Glasgow, COP27 Sharm-el-Sheik – Conference of Parties to UNFCCC, to evaluate the implementation of the Convention and negotiate new commitments. The most recent COP27 reiterated the agreement to work towards a limit for global warming of well below 2ºC.
- European Green Deal – Introduced by the European Commission and provides a roadmap for Europe to becoming climate-neutral by 2050 and achieving a 55% cut in carbon emissions by 2030 (compared to 1990 levels).
- European Climate Law 2021 – Puts into law the objectives of the European Green Deal and sets out targets for reducing greenhouse gas emissions in Member States.
- REPowerEU – 2022 Communication from the European Commission to the European Parliament etc. to make Europe independent from Russian fossil fuels.

4.3. **National Policy**

National Planning Framework Plan, 2018-2040

4.3.1. The NPF is the government's high level strategic plan for shaping the future growth and development of the country to 2040. National strategic outcomes include transitioning to a competitive, low carbon and climate resilient society and environmentally sustainable economy, to include renewable-focused energy generation and on-shore wind energy, and the strengthening of rural economies and communities. National Policy Objective 23 facilitates the development of the rural

economy, including through supporting energy industries, while noting the importance of maintaining and protecting the natural landscape and build heritage which are vital to tourism. National Policy Objective 55 promotes renewable energy generation at appropriate locations to meet national objectives towards achieving a low carbon economy by 2050.

National Development Plan, 2021-2030

4.3.2. The NPF was published alongside the NDP which provides a 10 year investment plan to supporting the implementation of the NPF. In Chapter 13 the document includes Strategic Investment Priorities for transitioning to a climate neutral and climate resilient society. Priorities include the Renewable Electricity Support Scheme auctions to deliver competitive levels of onshore wind energy.

Climate Action Plan, 2023

4.3.3. The Climate Action Plan 2023 (CAP23) is the second annual update to Ireland's Climate Action Plan 2019. This plan is the first to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emissions ceilings.

4.3.4. The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve GHG emissions by 2030 and reach net zero no later than 2050, as committed to in the Programme for Government (2020). In section 12.3.1 the Plan sets out measures to accelerate renewable electricity generation, including wind energy, to decarbonise the power sector.

Wind Energy Development Guidelines - Guidelines for PAs, June 2006.

4.3.5. The Guidelines provide advice to PAs for on-shore wind energy through the development plan process and in determining applications for planning permission. They provide consistency of approach throughout the country and state that whilst the development of renewable energy sources is supported, implementation must have regard for the environment notably including the conservation and sustainable use of biological diversity. Specific guidelines are provided on the environmental implications for wind energy and certain environmental topics, including design and siting, noise, shadow flicker and landscape effects. Recommendations are also

made in respect of conditions. The guidelines state that particular landscapes of very high sensitivity may not be appropriate for wind energy development.

Draft Wind Energy Development Guidelines, 2019

4.3.6. These draft Guidelines propose key amendments to the 2006 Guidelines in respect of noise, visual amenity, shadow flicker and community engagement. These include the application of more stringent noise limits in line with WHO noise standards together, a more robust noise monitoring system and reporting system and additional requirements in respect of shadow flicker, community consultation obligation, community dividend and grid connections. A minimum setback distance for visual amenity purposes of 4 times the tip height is also required subject to a mandatory minimum setback of 500m from sensitive receptors.

4.4. Regional Policy

Regional Spatial & Economic Strategy 2020-2032 for the Northern and Western Regional Assembly

4.4.1. This document seeks to support the delivery of the NPF and NDP. It seeks to facilitate the sustainable growth of the region, making use of the rich renewable energy resources including wind. Regional Policy Objectives (RPOs) 4.16 to 4.18 support the development of renewable energy in the region subject to environmental safeguards. In particular, RPO 4.16 states that '*The NWRA shall co-ordinate the identification of potential renewable energy sites of scale in collaboration with Local Authorities… such sites… will be based on numerous site selection criteria including environmental matters, and potential grid connections'*.

4.5. County Mayo Development Plan 2022-2028

4.5.1. The adopted Mayo County Development Plan (CDP) includes in Chapter 11 policies in respect of Climate Action and Renewable Energy. It sets out a strategic aim to transition to a low carbon and climate resilient county, with an emphasis on reduction in energy demand and GHG emissions, through a combination of measures to include maximising opportunities to become a national leader in renewable energy generation, whilst increasing the resilience of natural and cultural capital. Climate

action policies CAP 1, 4, 6 and 9 support climate adaption and mitigation measures including the use of renewable energy sources subject to no adverse effects on the environment and the integrity of Natura 2000 sites. Similarly, renewable energy policies support the development of renewable energy in the county subject to environmental safeguards (REP 1 and 7). REP 4 seeks to ensure that developers of large scale renewable energy projects carry out community consultation in accordance with best practice.

4.5.2. Volume 4 of the CDP comprises the Mayo Renewable Energy Strategy. The strategy document sets out the following vision for the development of renewable energy in the County.

> '*The renewable energy development vision for County Mayo is to harness the energy and economic potential of County Mayo presented by renewable technologies in order to provide benefits for both local communities and the global environment. In doing so, the elements of the natural, cultural (architectural and archaeological) and landscape heritage that define Mayo for local people and visitors alike will be protected. It is recognised, however, that change is an integral part of cultural heritage and that in order for communities and businesses to thrive Mayo needs new developments. Renewable energy projects will, therefore, be developed in ways that protect the integrity of environmentally designated sites; maximise local and regional benefits; and minimise or avoid negative impacts on the environment and society'*.

4.5.3. The overall strategy is supported by more detailed policy and policy objectives. These include protection of the natural and built environment, European sites, the promotion of economic and social benefits for the community and a plan led approach to renewable energy development. In this regard, the document sets out location within the county where wind energy developments are preferred or open for consideration (Map 8).

4.5.4. The majority of the subject site is zoned in Tier 2 (Open to consideration) lands in the Mayo Renewable Energy Strategy 2011-2020. Five no. turbines, on the eastern side of the development site lie outside of the designated area (Figure 2-2, EIAR), turbines T2, T5, T7, T8 and T12. The category Open to Consideration is described as '*areas which may be considered for wind farms or small clusters of wind turbines*

but where the visual impact on sensitive or vulnerable landscapes, listed highly scenic routes, scenic routes, scenic viewing points and scenic routes will be the principal consideration'. The document also states in section 6.4.1 that '*Any proposals for on-shore wind farm developments will be determined in accordance with the Wind Energy Development Guidelines (DoEHLG) 2006 or any subsequent guidelines and the requirements set out in Section 6.5'*. Section 6.5 of the Strategy document refers to environmental considerations and mitigation measures to minimise environmental impacts in respect of a range of environmental parameters that have been identified through the Strategic Environmental Assessment of the strategy.

4.5.5. Chapter 4 of the Plan sets out policies in respect of the natural environment. These generally afford protection not natural heritage, biodiversity, green and blue infrastructure and landscape character. The subject site falls within Landscape Policy Area 3 Uplands, Moors, Heath or Bog (Map 10.1) and largely within Landscape Character Unit E, North Mayo Mountain Moorland (based on the analysis carried out in the Landscape Appraisal of County Mayo – Appendix 4, CDP). Scenic routes and scenic routes with designated views, in the vicinity of the site are shown in Map 10.2 of the County Development Plan and Figure 13-5 of the EIAR.

4.5.6. Other policies of the Plan support the development of tourism within the county, afford protection to natural and built heritage and water quality and minimise flood risk.

Natural Heritage Designations

4.5.7. The subject site is situated within close proximity to a number of European and national sites of natural heritage interest. These are shown in Figures 6-2 and 6-3 of the EIAR and include the following European sites, which border the subject site and grid connection route, Glenamoy Bog Complex SAC/pNHA, Slieve Fyagh Bog SAC/pNHA, Carrowmore Bog Complex SAC/pNHA and Bellacorrick Bog Complex SAC/pNHA. Owenduff/Nephin Complex SPA and SAC lies to the south west of the site.

5.0 Submissions and Further Information

5.1. Mayo County Council

5.1.1. Mayo County Council's (MCC) submission to the Board, received on the 9th June 2023, sets out the PAs views on the development on the environment and the proper planning and sustainable development of the area. The report describes the proposed development, its location, the relevant policy context for it, the requirement for EIA, the planning history of the site, designated sites in the area of the site (SACs, SPAs, Ramsar sites, national heritage areas, nature reserves and national parks) and items of built heritage in the area of the site. The report provides an overview of the EIAR and sets out the following observations on the development:

- Appropriate assessment – The Board should satisfy itself that the NIS on the proposed windfarm and screening for AA adequately address the likely impact on Natura 2000 sites.
- EIAR – The EIAR complies with Schedule 6 to the Planning and Development Regulations, 2001, as amended (information to be contained in an EIAR).
- Internal reports - No objections raised by Road Design or Archaeology subject to conditions. Issues raised by Environment section in pre-application discussions have been addressed in the EIAR, NIS documents submitted and proposed mitigation measures.
- Development Plan - Proposed development is within an area where wind farms development is 'open for consideration' (Renewable Energy Strategy, MCC). Location of development is in principle acceptable.
- Planning history - Site is located in an area which has been substantially worked on in an industrial manner by Bord na Mona (exploitation of peat). Bog Rehabilitation Plan has improved land but site remains degrades. Given windfarms in immediate vicinity of site, use of land as a windfarm has been established and proposed use is acceptable.
- Residential amenity – No dwellings within 500m. 13 no. residential buildings (some derelict/unoccupied) within 10 rotor diameters (1,700m). Height and scale of turbines will be prominent from roads, houses and agricultural properties in the area. Local visual impact will be significant but limited to a small number of houses to the south and west.

- Shadow flicker – Refer to the absence of predicted effects on residential properties and to the inclusion of a standard condition which precludes the experience of shadow flicker at any property (as per draft Wind Energy Development Guidelines, 2006).
- Visual amenity – The proposal would have a visual impact from roads in the immediate vicinity and from residential properties therein, in locations where screening is not available or maintained. Direct effects on landscape character are highly localised, with impacts ranging from imperceptible to moderate significance.
- Road infrastructure – Subject to mitigation measures, proposed in the EIAR, the development will not have a significant impact on the road's infrastructure or traffic safety.
- Impact on the environment – Subject to mitigation measures, proposed in the EIAR, the development will not have a significant impact on the environment of the area.
- Conclusions and recommendations – MCC support development of renewable energy at the location. Recommendations:
    - R1 – Having regard to all of the existing and proposed wind energy projects, a dedicated access from the N59 should be explored for all projects at the location, to cater for construction and operational phases and provide undergrounding options for connection to national grid.
    - R2 – Concern regarding visual intrusion on landscape character of Céide Fields area (photomontage no. 8). Recommend further visual analysis.
    - R3 – Visual impact on landscape character of the area has not been adequately considered in terms of the elevated nature of turbines. Turbines should be located to reduce the potential impact on the landscape and character of the area.
    - R4 - No assessment of night time impact of red flashing warning lights. Consideration should be given to the potential impact of these cumulatively with other developments on the local population and light sensitive species.

- R5 – Recommend conditions in the event that the Board grant permission in respect of:
    - Road infrastructure: Pre and post construction survey of haul routes and bridges with damage arising to be repaired. Use of R312 Castlebar to Bellacorrick road as a haul road to be precluded (due to its poor condition). No installation of grid connection in N59 Sheskin to Bellacorrick (compromise structure of national road, undermine MCC ability to maintain/improve the road). Traffic management plan to be agreed with PA in advance of commencement. Permits required for abnormal loads. Road surface water drainage to be maintained. Cash deposit to cover road repair works.
    - Archaeology: Recommend archaeological monitoring under licence.
    - General conditions: Defines construction hours. Requires submission of decommissioning plan and protocol for assessing impact on telecommunications prior to commencement. All cabling to be laid underground.
    - Environmental: Costs of PA monitoring to be reimbursed by developer. Establishment of Environmental Monitoring Committee. Adherence to IFI best practice guidelines to protect fisheries habitat. Cessation of works if siltation arises and reporting on water pollution incidents to IFI. Prior to commencement applicant to agree management plan for construction works on site. Emergency Response Plan to be prepared, with IFI included as notifiable body. Measures to be put in place to prevent spread of invasive species. Water quality monitoring locations, parameters and schedules to be agreed with IFI. Use of poor tensile strength rock in road construction precluded. Schedule of work to show silt management and surface water management in place prior to ground works commencing. Emission limit of 25mg/l for suspended solids for discharges to watercourses. Monthly submission of water

quality monitoring results to PA. Appointment of environmental officer for period of earthworks and construction, with reporting to PA. Noise and dust controls. Storage of pollutants and fuel, provision of oil abatement kits. Waste management plan to be agreed with PA. No stream diversions, culvert alterations or replacements without consultation and agreement of IFI. Construction works to take place outside of the bird breeding/ nesting seasons, in first year of construction. Annual monitoring programme of birds in accordance with EIAR. Detailed conservation plan for rehabilitation of the site following completion of construction.

- Financial contributions: Require payment of a Development Contribution, Bond and annual contribution to a Community Fund.

5.2. **Prescribed Bodies**

5.2.1. The applicant circulated details of the application to the prescribed bodies set out in the attached footnote[2]. Responses were received from the following:

5.3. **Department of Defence**

5.3.1. Recognise the importance of renewable energy. Recommends conditions to be attached to any grant of permission in respect of obstacle lighting . Raises concerns regarding:

- The location of 5 of the 21 no. turbines outside of the area designated as Tier 2, on lands not designated in the Wind Strategy area of the Mayo CDP.
- The location of the wind farm, between 130m and 230m contours, within the landscape Protection Policy Area 3 (Uplands, moors, heath or bogs), has potential to have a negative effect on the visual amenity of the area.
- The location of the wind farm on the Western Way, a national way marked trial and walking route.

[2] An Chomhairle Ealaílon, Minister for Agriculture, Food and the Marine, Irish Water, Irish Aviation Authority, Inland Fisheries Ireland, Health Services Executive, Fáilte Ireland, Commission for Regulation of Utilities, An Taisce, Transport Infrastructure Ireland, The Heritage Council, Office of Public Works, Northern and Western Regional Assembly, National Parks and Wildlife Service, Minister for Housing, Local Government and Heritage, Minister for Culture, Heritage and the Gaeltacht (Development Applications Unit) and the Minister for Communications, Climate Action & Environment.

- Proximity of the development to a dense presence of European sites and the potential for effects of these and the ecology of the area in general.
- The impact on the local road network during construction.
- The potential impact of the development on upland blanket bog and peat stability.

5.4. **Inland Fisheries Ireland**

- Development site spans numerous tributaries of the Oweninny River which provides an important spawning and nursery habitat for sea trout, brown trout and salmon for the wider Owenmore River system (of high ecological status in River Basin Management Plan and a valuable salmon and sea trout fishery). Fish monitoring has shown that the catchment is under environmental pressure. Fishery closed for two years and salmon stocks recovered sufficiently to allow reopening. It is imperative that no activity or development is permitted in the catchment that may have a negative impact on Owenmore River system, aquatic habitat or water quality. The high ecological status of the river requires protection.
- Western boundary runs along a tributary of the Glencullin River (Good ecological status in River Basin Management Plan). It provides most of the salmonid spawning habitats for all salmon and sea trout in Carrowmore Lake. EIAR states that the closest works are 200m away and there is no surface water linkage. There must therefore be no discharge from the construction site or the site drainage into this area.
- Northern section of the site is within the Barroosky River Catchment, a tributary of the Glenamoy River. Barooksy River provides a salmon and trout spawning and nursery habitat for the Glenamoy River fishery. Glenamoy River is under environmental pressure and forms part of the Glenamoy Bog Complex SAC. The closest works within the site is within a different catchment area. There must therefore be no discharge from the construction site or the site drainage into this area.
- Recommend further information in respect of provision of:
    - Environmental Monitoring Committee (representatives).
    - Locations of surface water monitoring to be agreed with IFI.

- Culvert designs for water crossings to be agree with IFI in advance of construction.
- No discharge of silted water or pollutants to any surface watercourse.
- On site vehicle wash to be closed loop.
- Drainage from borrow pits and peat and spoil placement areas to be treated to prevent siltation of waters.
- Method statement for all works that may impact on surface waters to be agreed with IFI in advance. All instream works precluded between 1st October to 30th June.
- Training to contractor and machinery operators on geotechnical aspects of site. All works to stop where ground conditions unstable.
- Construction buffer zones to be marked out/taped off in advance of commencement.
- Geotechnical confirmatory ground investigations prior to construction with report to EMC. To include assessment of proposed silt pond locations, not included initial assessment.
- Details of explosives for use in borrow pits to be provided.
- Adequate drainage and surface water management system to be put place to ensure no siltation of surface waters (including for temporary roads and access tracks).
- Appropriate road construction materials.
- Treatment of wastewater.
- Amenity signage to include information on local biodiversity and the aquatic environment.
- Avoidance of wetland/bog holes and ponds during construction.
- Consideration to extending Rhododendron ponticum management plan to include its removal along watercourses, where the species is having a tunnelling effect.

5.5. Transport Infrastructure Ireland

- Section 2.5 of the Ministerial Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities' sets out policy that seeks to avoid the creation of additional access points from new developments or the generation of increased traffic from existing accesses to national roads. TII acknowledge

that access to all turbines is facilitated via the local road network (L52926) prior to access to the N59 national road.

- EIAR states that abnormal loads associated with wind farm construction will relate to size only, not weight. It is not clear if any abnormal weight loads are associated with construction of the sub-station (not included in application) and assessed in the EIAR. Any abnormally heavy loads will require a permit from the relevant local authority. A full assessment of structures on the proposed national road haul route should be undertaken to ensure that structures can accommodate the proposed loading.
- For abnormal loads, applicant to consult with relevant road management companies/local authorities to ensure strategic function of the national road network is maintained during deliveries and obtain necessary consents for any temporary works. Any necessary mitigation measures should be included in any decision to grant permission. Any damage to national roads to be rectified.
- Grid connection route includes 3.6km of the N59 with two national road bridge crossings, a number of national road culvert crossings and four proposed joint bays. Raises concerns for the future maintenance of the national road, network traffic flows during installation and has implications for any on-line upgrades. Alternative routes available, including the route across private lands proposed to Bellacorrick substation under ABP316178. Proposed cable route fails to address important policy considerations impacting on national roads.
- Greenways. Refers the Board to consultation with MCC for any such projects.

5.6. Northern and Western Regional Assembly

- Refers to the Board to relevant policy objectives of the Regional Spatial and Economic Strategy for the Northern and Western Region, including but not limited to section 1.5, Overarching Environmental Regional Policy Objectives.

5.7. Irish Water

- Carrowmore Lough Water Supply is located c.7km to the west of Sheskin Forest. It supplies c.3,900 people in Bangor Erris, Belmullet and surrounding

areas and provides treated drinking water to three public group water schemes.

- The Water Framework Directive requires the protection of waters used for the abstraction of drinking water.
- Windfarm construction has the potential to disturb/move large volumes of peat, with the potential to impact on quality of raw water and in turn the cost of treatment. All surface/ground water sources within proximity to the development to be protected from any possible pollution arising.
- Appropriate mitigation and monitoring measures to be included to prevent any adverse impacts on nearby water courses.
- Any proposals to build over/divert existing water or wastewater services to be in accordance with Irish Water requirements.
- Recommends conditions in any grant of permission to prevent deterioration of water quality, compliance with mitigation measures to protect Carrowmore Lake Water Supply, protection of groundwater, and development to comply with IW standards.

5.8. **Department of Housing, Local Government and Heritage (DAU)**

- All mitigation measures in relation to archaeology and cultural heritage to be implemented .
- Pre-development archaeological testing to be carried out by archaeologist.
- CEMP to include location of archaeological and cultural heritage constraints, any subsequent archaeological investigations and shall describe all likely archaeological impacts and mitigation measures.
- PA and DHLG&H to be furnished with a report describing all results of archaeological monitoring and any archaeological investigative work/excavation required.

5.9. **Observers/ Public Submissions**

5.9.1. There is one public submission on the proposed development, made by Martin and Catherine Doherty. It raises the following issues:

- Proximity of three turbines to observer's property, Sheskin Lodge, comprising two old lodges and a two storey derelict building, previously owned by

Jameson's and used as a base for shooting grouse and salmon fishing, situated in the quiet and tranquil area (in proximity toT21, T20 and T19).

- Visual impact of turbines on property and scenic area, with impacts on tourism (proximity to Sheskin Walkway and numerous tourist walks in area).
- Danger to local wildlife, fish and plants. Proximity to development to salmonid river. Impact on bats and birds (disturbance, habitat loss and collision) and deer.
- Risk of water contamination, with impacts on spawning habitat for Atlantic salmon and spring water.
- Impact on one of the oldest monkey puzzler trees.
- Adverse effects on health (decreased quality of life, annoyance, stress, sleep disturbance, headaches, anxiety, depression and cognitive dysfunction, anger, grief).
- Increase in traffic on local roads (construction, operation and maintenance).

Further Responses

5.10. In June 2023, the Board circulated the PA report and third party submissions in respect of the proposed development to the applicant. The applicant makes the following responses to the issues raised:

- Report by Mayo County Council. The applicant notes that the PA support the development and comment recommendation nos. 1 to 4 of the report.

  (1) *Single point of access to wind farms.* Proposed development will share the same access of the N59 with the permitted Sheskin Wind Farm (L52936). Acknowledges there are other existing and proposed wind farms at Bord na Mona's Oweninny complex, which use an existing entrance off the N59 c.4.3km to the south east of the site. Argue that it is not practical to use this as significant additional roads would be required due to the distance between the sites and the subject site and alternative access are separated by Oweninny River and Srahnakilly Local Road.

  (2) *Visual impact on Céide Fields.* This issue was addressed in the EIAR and due to topography, there is no theoretical visibility of the proposed turbines from Céide Fields (Figure, 13-1, EIAR and Appendix 12-2,

photowire located at one of the most elevated vantage points in the Céide Fields where public access is permitted).

(3) *Impact on landscape character*. Impact of the development on Landscape Character Units E (North Mayo Mountain Moorland) and F (North Mayo Bog Basin) have been fully considered in the EIAR (refers to specific sections). Impacts have been assessed as Moderate and Slight respectively and the landscape effect incorporates the visibility of the proposed turbines that results from their siting. Given the flat topography to the south and south east of the turbines (within LCU F) the location of the turbines where they are proposed (at elevations below 240m) does not in any case substantially alter the visibility of the turbines from within the LCU. This is demonstrated in VP4, 9, 10 and 11.

(4) *Other LCUs*. Effects of the development on LCU D, North Coast Plateau, LCUB North West Coastal Moorland and LCU C, have been considered in the EIAR with Slight (as represented by VP 8), Not Significant (VP 2 and 6) and Slight (VP 1, 3, 7) impacts respectively. The significance of landscape effects incorporates the visibility of the proposed turbines resulting for their siting.

(5) *Landscape Policy Areas*. The EIAR considers the effect of the development on Landscape Policy Area 3. The assessment indicates that the development is appropriately scaled and located to avoid, in so far as possible, adverse impacts of the development on this landscape policy area. It strikes the balance between sustainable development and protection of sensitive landscape features and taking all factors into account, the development will have no significant effects in relation to LPA 3 (section 13.7.3.1.1 of the EIAR).

(6) Consideration of potential impact of red flashing warning lights cumulatively with other development. A number of options exist to mitigate the effects of night time warning lights in the interest of residential visual amenity (see Technical Note attached to submission). These include options applied elsewhere in Europe e.g. dimming,

shielding and directional intensity, elimination of lightning and definition of Danger or Restricted Zone (would require extensive engagement with aviation stakeholders), cardinal or perimeter lighting and aircraft detection system (with automatic equipment on the aircraft turns on and off turbine lights).

- DHLG&H: Commends on each of the three recommendations made in respect of archaeology:

  (1) *All mitigation measures in relation to archaeology and cultural heritage to be implemented .* All mitigation measures set out in the EIAR will be implemented.

  (2) *Pre-development archaeological testing.* A detailed archaeological and cultural heritage impact assessment has been carried out. This indicated that there will be no significant direct effects on known archaeological or cultural assets. However, the potential for effects on unknown sites/artifacts will be mitigated by monitoring of all ground works during construction with additional resources for the preservation of features (by excavation or avoidance) as required. Once completed a report included archaeological impact, mitigation strategy and monitoring will be submitted to the relevant authority. Archaeological monitoring is therefore appropriate and sufficient for the development site rather than pre-development testing.

  (3) *CEMP to include location of archaeological and cultural heritage constraints, any subsequent archaeological investigations and shall describe all likely archaeological impacts and mitigation measures.* There are no known archaeological or cultural heritage constraints within the site of the development. Archaeological monitoring to be carried out (above).

  (4) *Report on archaeological monitoring*. Report to be compiled and submitted to relevant authorities.

- Department of Defence:

(1) *Requirement for lighting.* DOD lighting requirements will be adhered to. Technical note included in Appendix 2 of submission in respect of lighting options available for the development.

(2) *Spatial planning.* Development supported by regional, national and local planning policy. Comprehensive landscape and visual impact assessment carried out. PA supportive of the development at the location.

(3) *Mayo Renewable Energy Strategy.* Five of the proposed turbines are outside of Tier 2 – Open for Consideration (Mayo Renewable Energy Strategy, RES). However, RES states that the PA will consider renewable energy submitted through the planning system, irrespective of wind energy classifications identified in the strategy. The five turbines are all within c.315m of the OFC zone and lie within the viable area based on the physical and environmental constraints. PA considers the development acceptable at the location.

(4) *Landscape character.* The impact of the development on landscape Protection Policy Area 3 – Uplands, moors, heaths and bogs and on the visual amenity of the area has been fully considered in the EIAR and the Viewpoint Assessments (Appendix 13-3).

(5) *Natura 2000 sites* – Comprehensive assessment on flora and faun was carried out in the Biodiversity section of the EIAR and NIS. The NIS concludes that the development will not adversely affect the integrity of any European site.

(6) *General comments* – Road network – A pre and post condition survey will be carried out on the L52926 local road south of the site. A bond will be put in place prior to commencement to ensure reinstatement of the local authority road networks and roads will be reinstated to local authority specifications. Upland blanket bog and peat stability – There is no upland blanket bog within the site, there is peat under forestry. The Geotechnical and Peat Stability Assessment Report sets out a detailed assessment of peat stability at the site.

- IFI: The applicant comments on each of the observations and recommendations made by IFI for the protection of surface water receptors. It

refers to the assessments carried out for Biodiversity and Hydrology and Hydrogeology in the EIAR. It acknowledges that whilst there is potential for effects on Owenmore River system, with the implementation of mitigation measures there will be no adverse effects on the river system. The applicant also confirms that there will be no works within the catchment of the Glencullin River or Barroosky River catchment or discharge from the proposed drainage system to these. The applicant addresses each of IFIs requests for further information. In each instance, reference is made to where and how the matter is addressed in the application document and/or complied with. With regard to details of explosives to be used in borrow pits, the applicant states that if rock blasting is to be carried out it, a Rock Blasting Management Plan will be prepared and submitted to the EMC in advance. With regard to Rhododendron ponticum management, it is stated that (a) the Biodiversity Management and Enhancement Plan (Appendix 6-4, EIAR, section 2.3, BDMEP) sets out procedures for removal of this invasive species within the development site, including along watercourses, and (b) all Rhododendron ponticum that has been recorded within the site will be removed and this will ensure no tunnelling effect of light along watercourses during the lifetime of the development.

- TII:

(1) *Official Policy (access onto national roads).* No new access onto the national road will be created and no increase in traffic on non-public road accesses of the N52.

(2) *Road safety (abnormal loads – weight, haul route).* There will be no abnormal weight loads associated with the construction of the on-site sub-station. The applicant and appropriate road manager will be consulted prior to commencement of any temporary accommodation works along turbine delivery route. Temporary accommodation works to be subject to a Road Safety Audit, where appropriate, to comply with TII requirements. Applicant to carry out pre and post condition road survey where required and ensure that remediation works are to a satisfactory standard.

(3) *Road safety (structure of haul route).* No assessment of structures along the haul route is required as there are no abnormal heavy loads associated with the development.

(4) *Grid connection.* Should the wind farm be permitted the proposed substation and grid connection route will be subject to a separate planning application. It will be subject to more detailed design and the issues raised by TII will be individually addressed. Location of grid connection in public road, and the avoidance of peatlands, is consistent with EirGrid's 110kV Underground Cable Functional Specification Document (Reference CDS-HFS-01-001-R2). Detailed design of each TII bridge crossing will be undertaken in consultation with TII, local roads engineer and EirGrid, should any potential route be subject to a future planning application. Connection to Bellacorrick sub-station by private lands, as permitted for the 38kV grid connection for Sheskin Wind Farm, was not an option available to the applicant. The permitted Sheskin Wind Farm grid connection includes c.3.6km along the northern side of the N52. The design of the subject 110kV underground grid connection will factor this cable into consideration should a design be procured. A stop and go traffic management system will maintain two way traffic flow on the N59 during construction.

(5) *Greenways.* There are no known greenways within the vicinity of the development site.

- NWRA: No matters raised in respect of the application. The development is consistent with the policies and objectives of the RSES (RPO 4.16, 4.17, 4.18).

- IW:

(1) *Carrowmore Lough Water Supply, Groundwater sources, mitigation and monitoring.* Refers to the detailed assessment of the likely effects of the development on surface and groundwater carried out in the EIAR. Acknowledges that the nearest source of public water supply is Carrowmore Lough. States that the Lough receives surface water from rivers/streams that drain the northern and western slopes of Slieve Fyagh and is not there connected to or influenced by the proposed development. Notwithstanding

this mitigation measures and monitoring arrangements will ensure that there are no adverse impacts on surface or groundwater.

(2) *Movement of peat.* Refer to the Peat Stability Assessment Report, low risk of peat failure identified and proposed mitigation measures which ensure that no adverse effects on surface or groundwater quality will arise. Conclude that no additional treatment of raw water will be required.

(3) *Building over IW assets.* Laying of grid connection cable in the public road raises the risk of interaction with IW services. Construction Methodology states that all existing services along the underground cable route will be identified on site prior to commencement of construction. If IW services identified, applicant will consult with IW to determine requirement of excavation or relocation methods and to schedule suitable time to carry out such works. All works to be caried out in accordance with the specifications of the relevant utility provider.

(4) *Connection to public water and wastewater infrastructure.* The applicant proposes no connection to public water supply or wastewater infrastructure. Potable water to be brought to the site during construction and rainwater or a groundwater well will be required during operation. Wastewater will be removed from holding tank(s) site during construction and operation by licences contractor. Applicant will seek confirmation from IW that there is adequate capacity at the relevant WWTP for wastewater generated on site.

- <u>Public submissions (Catherine and Martin Doherty).</u>

(1) *Visual impact*. Sheskin Lodge is in a derelict state, has no public access to it and is surrounded by mature forestry, screening external views in any direction. The development will not be visible from the Lodge and have no direct effects on it. The effects of the development on the Western Way have been assessed in the EIAR (significant effect on the route within the development site, but moderate effect overall given length of route affect, location in forestry plantation and in proximity to other turbines).

(2) *Local Wildlife and Habitats*. The response refers to the assessment of the effects of the development on biodiversity, ornithology and fisheries habitat in

the EIAR and NIS and to the absence of adverse effects, with the implementation of mitigation measures.

(3) *Drinking water.* The response refers to the assessment of the effects of the development on surface water, groundwater and the hydrological/hydrogeological regime during construction and operation, as set out the EIAR, and the absence of adverse effects on water quality.

(4) *Human health.* The response refers to the assessment of the effects of the development on human health set out in the EIAR in terms of turbine safety, shadow flicker and residential amenity and the suite of mitigation measures to be implemented during construction and operation to protect human health. Certain relevant mitigation measures are summarised in the response.

6.0 Assessment

6.1. Principle

6.1.1. International, national, regional and local policies in respect of climate change and renewable energy clearly support the use of renewable energy to reduce greenhouse gas emissions and more recently, energy security.

6.1.2. The proposed development has been brought forward within this context. With the predicted output of between 126MW and 189MW, the proposed development will displace between c. 4,948,685 and 7,423,045 tonnes of carbon dioxide per annum (section 1.5.2, EIAR) and providing power to between 91,980 and 130,507 households every year. It will contribute towards Ireland's transition to a low carbon economy, associated climate change objectives and to reduce Ireland's dependence on imported fossil fuels for the production of electricity. Parties to the application do not raise any objections to the development on this ground and I am satisfied that the proposed development is, in principle, in accordance with the policy context for climate change and renewable energy. Compliance with environmental policies are considered below and in the EIA and AA sections of this report.

6.2. Issues Raised

6.3. Having inspected the subject site, examined the application details and all other documentation on file and having regard to relevant national guidance and local planning policies, I consider that the main issues raised in submissions are:

- Adequacy of AA.
- Access to the windfarm from the N59 (given multiple wind farm projects).
- Visual impact of the development on landscape character, Céide Fields and the visual amenity of the area.
- Impact of nocturnal lighting of development and with other wind farms (local population and light sensitive species).
- Location of 5 of the 21 turbines outside of the lands where wind farms are open for consideration.
- Proximity of development to European sites and the potential for effects on these and the ecology of the area.
- Impact on Western Way and tourism.

- Impact on local road network during construction.
- Impact of the development on upland blanket bog and peat stability.
- Impact on surface water bodies including Oweninny River, Glencullin River and Glenamoy River and fisheries habitat.
- Likelihood of abnormal weight loads and full assessment of structures along the haul route.
- Impact of cable route on national roads.
- Impact on public water supply.
- Impact on private property.
- Adverse effects on human health.
- Conditions to be attached to the permission, including in respect of construction management.

6.4. 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.

7.0 Planning Assessment

7.1. Location of Turbines

7.1.1. The Renewable Energy Strategy for County Mayo, that forms part of the current CDP, sets out preferred locations for wind energy development in the County. The proposed development, comprising 21 turbines, proposes 16 of the turbines within Tier 2 where turbines are 'open to consideration' (see Map 8). Five of the turbines, situated on the western side of the site (T2, T5, T7, T8 and T12) are within lands which are not identified in the Strategy document for wind energy.

7.1.2. Section 6.4.1 of the Renewable Energy Strategy for County Mayo, states that any proposals for on-shore wind farm developments will be determined in accordance with the Wind Energy Development Guidelines (DoEHLG) 2006 or any subsequent guidelines and the requirements set out in Section 6.5, environmental considerations and SEA mitigation measures. These include, under Landscape in section 6.5.14 '*Renewable energy developments shall avoid sensitive and vulnerable landscapes, listed highly scenic views, scenic views, scenic viewing points and scenic routes where detailed visual analysis demonstrates that the development will have an adverse affect on those landscapes'*.

7.1.3. The government's 2006 Wind Energy Guidelines refer to the requirement for development plans to achieve a reasonable balance between responding to overall Government policy on renewable energy and enabling wind energy resources of the area to be harnessed in a manner that is consistent with proper planning and sustainable development. It states that the assessment of individual wind energy development proposals needs to be conducted within the context of a "plan-led" approach, which involves identifying areas considered suitable or unsuitable for wind energy development. A similar approach is proposed in the draft Wind Energy Development Guidelines 2019.

7.1.4. Whilst 5 no. of the proposed wind turbines lie outside of any area designated for wind farm development in the Renewable Energy Strategy for County Mayo, the wind turbines directly adjoin an area in which wind turbines are open for consideration and fall within the same woodland environment and there is a reasonable argument for their inclusion in the development, despite their location outside of zoned lands, subject to an absence of significant environmental effects.

7.1.5. Notwithstanding this, as discussed in the EIA section of this report under Landscape, I have concerns that a number of the proposed turbines will be visible over Slieve Fyagh when viewed from the north west, including Scenic Routes and Scenic Routes with designated views, establishing a new and inappropriate precedent for the visibility of wind turbines from the west, over Slieve Fyagh, and detracting from defining landscape character (dominance of Slieve Fyagh, absence of human development). I am recommending therefore that Turbines T5, T7 and T8 are omitted from the proposed development to reduce the visibility and landscape effects of the development from the north west.

8.0 Environmental Impact Assessment

8.1. Statutory Provisions

8.1.1. The European Union Directive 2014/52/EU, amending Directive 2011/92/EU, on the assessment of the effects of certain public and private projects on the environment, requires Member States to ensure that a competent authority carries out an appraisal of the environmental impacts of certain types of projects, as listed in the Directive, prior to development consent being given for the project. The EIA Directive has been transposed into Irish law, with requirements now set out in the Planning and Development Act 2000 (P&D Act), as amended, and the Planning and Development Regulations, 2001 (the Regulations), also amended.

8.1.2. 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'*.

8.1.3. The proposed development with a total of 21 no. turbines with an estimated capacity of between 126MW and 189MW exceeds these thresholds and is therefore subject to mandatory EIA.

8.2. Compliance with Legislation

8.2.1. The likely environmental effects of the proposed development have been considered in the EIAR having regard to the factors set out in section 171A(b)(i)(I) to (IV) of the P&D Act, namely:

> (a) population and human health

(b) biodiversity, with particular attention to the species and habitats protected under Directive 92/43EEC and Directive 2009/147/EC
(c) land, soil, water, air and climate
(d) material assets, cultural heritage and the landscape
(e) the interaction between the factors referred to in (a) to (d).

8.2.2. These factors are considered in detail in Chapters 5 to 14 of the EIAR.

8.2.3. As per the requirements of Article 94 of the Regulations, the EIAR provides the information specified in paragraph 1 of schedule 6, and additional information specified in paragraph 2 that is relevant to the nature of the proposed development, its location and environmental features likely to be affected. It includes:

- A comprehensive description of the development, including layout, requirements for different components, access and transportation, community gain, recreation and amenity proposals, site drainage, construction phasing and timing, construction methodology, operation and decommissioning (Chapter 4).
- A description of reasonable alternatives – see further comments below (Chapter 3).
- A description of the baseline environment for relevant aspects of the environment and an outline of likely changes without the development, a description of the likely significant effects of the development (direct, indirect, temporal and cumulative) on the different environmental parameters, a description of forecasting methods used, sources used for the descriptions and assessment of impacts and measures to mitigate identified significant effects (topic Chapters 5 to 14). Section 2.8 of the EIAR sets out the overall approach to cumulative impact assessment and this is further addressed under each topic.
- A Non-Technical Summary of the information contained in the EIAR.
- A list of experts who contributed to the preparation of the EIAR together with relevant qualifications and the experience of each team member (section 1.8 and Table 1-3, EIAR and in some individual topic sections).

- The vulnerability of the proposed development to major accidents and/or disasters (Chapter 15).
- Interactions between impacts (Chapter 16).

8.2.4. Details of the applicant's scoping work and consultations are set out in section 2.6 of the EIAR. Appendix 2-3 provides a detailed report of the public consultation exercise that has been carried out and which is on-going.

8.2.5. I note that no technical difficulties were encountered in the preparation of the EIAR (Section 1.9) and I have not identified any areas where any significant impediments to the assessment are evident.

8.2.6. Having regard to the foregoing, I am satisfied that the scope and content of the EIAR complies with the requirements of article 94 of the Regulations, as amended and is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development, taking into account current knowledge and methods of assessment. I am also satisfied that the public have been informed in respect of the proposed development with adequate times afforded for submissions in accordance with the requirements of Article 6 of the Directive.

8.3. Consideration of Reasonable Alternatives

8.3.1. Paragraph 1(d) of Schedule 6 of the Regulations requires a description of reasonable alternative studied which are relevant to the development and its specific characteristics and the main reasons for the option chosen, taking into account effects on the environment. Paragraph 2(b) also refers to reasonable alternatives and gives examples in respect of project design, technology, location, size and scale.

8.3.2. Alternatives are considered in section 3 of the EIAR. These include:

- Do nothing - The opportunity to capture renewable energy at the location that would be lost with the 'do nothing' scenario against the limited environmental consequences of the proposed development set out in the EIAR (Table 1-3).
- Alternative sites – The applicant has taken a strategic approach to site selection (section 3.3.1, EIAR) that includes reference to a nationwide portfolio of potential wind farm sites, sensitive ecological sites, slope, tourism

assets, proximity of residential development and potential for grid connection and more locally the zoning of the site for wind energy development.

- Alternative technologies – The EIAR compares the proposed development to an alternative renewable energy source, solar (Table 3-2). Considers that land take would be considerably more (c.302ha) with potential for higher environmental effects on water environment (larger area to be felled with increased risk of silt laden runoff), land, soils and geology (greater volume of peat and spoil to be excavated), traffic and transport (construction), biodiversity and birds (habitat loss, glint and glare). Positive impacts would be reduced noise, visual effects and no potential for shadow flicker.
- Alternative turbine number/model – The EIAR considers the use of smaller turbines, but considers that this would necessitate a much larger number of turbines (c.59-76) to achieve the same output range, less efficient use of the wind resource available, greater land take and supporting infrastructure with consequential environmental effects (Table 3-3)
- Alternative layout/development design – This is considered in section 3.5 of the EIAR. Layout of the proposed development has been an iterative process with input from the range of technical specialists, detailed constraints mapping and appropriate buffer zones (Figures 3-1a to 3-1c), detailed site investigations and community engagement. An original layout of 16 turbines was revised to a layout of 21 no. turbines to maximise the potential wind resource of the site, in the context of identified constraints (Figure 3-2 and 3-3). Maximum turbine base elevation of 240mOD is maintained to reduce landscape and visual effects. The third phase of turbine layout was based on micro-siting having regard to local ground conditions and an increased setback to the Western Way walking route (Figure 3-4).
- Alternative road layout and ancillary structures (construction compounds, electricity substation, grid connection and borrow pits) – Two options are considered in respect of road layout, maximum use of existing roads vs new road network with the latter discounted given the potential for more significant environmental effects (Table 3-5). A larger number of smaller construction compounds was assessed against a single larger compound (Table 3-6) with

the larger number favoured on environmental grounds. Two locations were considered for the onsite substation, with the more southern option preferred given the reduced requirement for internal cabling and associated environmental effects (Table 3-7). An assessment of grid connection considered two existing substations within 25km of the site, Bellacorrick and Tawnaghmore, with Bellacorick favoured on grounds of proximity (5km vs 26.4km), absence of off road sections and watercourse crossings and proximity to fewer residential dwellings, with consequential reduced land take and risk of environmental effects (Table 3-8). Use of on site borrow pits or material from an offsite quarry are considered in section 3.5.4.4, with use of onsite borrow pits favoured, with reduced potential for traffic and transport/visual and nuisance effects off site and the benefits of the borrow pit for use as a peat repository area.

- Turbine delivery – Section 3.6 examines alternative options for turbine delivery, with wind turbine components being imported from overseas and transported overland to the site. Galway Harbour (option A) and Killybegs (option B) are considered as ports of entry with alternative routes compared (Figure 3-7). Both options require accommodation works and road widening along the L52926 and the junction between the N59 and L59526. Option A is preferred as it has less potential pinch points where widening may be required (with the potential for increase in habitat loss and greater traffic impacts with road widening works)
- Alternative mitigation measures – These are considered in section 3.6.3 with the key measures being mitigation by avoidance rather than encroaching into environmentally sensitive area. Where habitat loss occurs it has been mitigated by enhancement lands.

8.3.3. Having regard to the foregoing, I am satisfied that the applicant has provided a description of the alternatives considered and that these alternatives are reasonable in the context of development and its specific characteristics. I am also satisfied that the EIAR has set out the main reasons for the option chosen, taking into account the effects of alternatives on the environment.

8.4. Population and Human Health

8.4.1. Baseline. Chapter 5 of the EIAR deals with population and human health. It describes the baseline environment in terms of population, settlement patterns, economic activity, services and tourism. The site lies in a remote rural area with a declining and aging population.

8.4.2. Likely Significant Effects. The report refers to the potential of the Irish wind energy to create investment and jobs in the county including short term significant positive effects during construction (locally sourced construction workers and materials), influx of skilled people to area, rates to be paid to PA and proposed community benefit scheme.

8.4.3. In section 5.4.1.2, the EIAR refers to various reports which have considered tourist and public attitudes to wind farms, with the reports concluding that the development of wind energy does not have a detrimental impact on tourism and that the overall attitude towards wind farms in the country, including those in the local area of wind farms, is positive. It is considered that the development may have a limited short term negative impact on the amenity of the Western Way (portion of route closest to site is rarely used) but in the longer term will enhance it, with the provision of additional walking trails and cycle paths.

8.4.4. Similarly in section 5.7, the EIAR refers to reports on the impact of wind farms on property values with the studies carried out finding no evidence of a consistent effect on house prices (the studies did acknowledge the potential for individual home values going down in proximity to a wind farm).

8.4.5. Impacts on human health are considered in section 5.6. The EIAR refers to per reviewed research that concludes that there is no scientific evidence to positively link wind turbines and health effects. The report refers to the EPAs guidelines on the information to be contained in an EIAR and focuses on health issues and environmental hazards arising from the other environmental factors considered. It refers to the absence of significant effects in respect of emissions to air (noise and dust), emissions to land and water (hydrocarbons, silt), noise and vibration and flood risk, traffic, visual effects, proposed mitigation measures and the absence of likely significant effects on human health during construction, operation and

decommissioning (section 5.10). It also refers to the likely offsetting of carbon emissions associated with the project and the slight, positive effect on air quality.

8.4.6. An assessment of shadow flicker is set out in section 5.8. It adopts a conservative approach (100% sunshine during all daylight hours, absence of screening etc.) and concludes that of the 13 dwellings (occupied and derelict, see Figure 5-6) within 1.7km of the proposed development and with the application of the regional sunshine average, none will exceed the thresholds set out in the Department's guidelines on shadow flicker (30 hours/year or 30 minutes/day). However, mitigation measures are proposed in section 5.10.3.10 for properties H18 and H19[3] where flicker is predicted in the absence of the application of regional sunshine average. These include site specific measures, to be agreed with the householder, or standard turbine control measures. Cumulative shadow flicker is assessed in section 5.8.7. It includes existing and proposed wind farms whose 10 rotor diameter shadow flicker assessment area overlaps with the proposed development (Turbines 22-52, Oweninny Phase 2, Figure 5-6). It concludes that three properties H1, H2 and H3 will experience shadow flicker as a consequence of Phase 2 turbines (no. 38) but not from any of the proposed turbines, primarily due to the relative location of sensitive receptors to wind farm sites.

Cumulative effects on population and human health that arise from other existing or proposed development are considered in section 5.10.5 and addressed in the relevant topic sections of the EIAR in respect of noise, air and climate, traffic, telecommunications and visual impacts. These sections of the report draw the following conclusions:

- Noise – No potential for significant cumulative effects during construction with all noise below wind energy development guideline noise limits (this includes the operation of T18 in a lower noise mode in certain weather conditions). The report acknowledges that during operation, at some locations and under some wind conditions and for a certain proportion of the time, operational wind farm noise would be audible but well below wind energy development guidelines daytime and night time noise limits.

[3] NB section 5.10.3.10 of EIAR refers to H09 instead of H18 and H19 identified in Table 5-9, Shadow Flicker results.

- Air and Climate – Should the proposed development be constructed simultaneously with other wind farm/other development within 20km, there will be a short term, slight negative cumulative impact on air quality and climate due to vehicular and dust emissions. Once operational, long term moderate positive impact on air quality and climate.
- Traffic – Identifies the potential for negative, short term and slight to moderate traffic effects if any or all the 4 developments within 20km of the site are constructed simultaneously with the subject development. The applicant proposes the scheduling development to take account of other wind farms and developments under construction to minimise the potential for cumulative effects.
- Landscape and visual effects – Cumulative effects will occur in the basin of open upland landscape where the proposed development is sited adjacent to several existing, permitted and proposed wind farms. However, given the limited visibility of the turbines as a result of surrounding topography, cumulative landscape effects are considered to be not significant. Similarly, visual effects will occur locally, however with the location of the wind farm alongside existing/proposed wind farms, the limited number of receptors and topographical context for the site (which limits views) long moderate, cumulative visual effects are predicted.
- Telecommunications – The EIAR identifies positive effects for electrical supply with other existing, permitted and proposed wind farm development. No significant effects are predicted from works in proximity to the Corrib gas pipeline, subject to adherence to GNI guidelines. No significant cumulative effects on wells or public water supply are predicted. The potential for effects on telecoms and aviation will be mitigated by each individual operator with no potential for significant cumulative effects.

Assessment

8.4.7. Submissions raise concerns regarding the impact of the development on private property (including Monkey Puzzle tree), the scenic amenity of the area and on tourism (including the Western Way), drinking water quality (including well water)

and human health. The PA raise concerns regarding the cumulative effect obstacle warning lights on the local population.

8.4.8. The subject site lies in a remote rural area with dispersed population. The nearest settlement is Bellacorick village c.4.7km to the south east of the site and the nearest residential property is c.1,348m to the south west of T5. The Western Way trail is routed along the eastern boundary of the site.

8.4.9. Having regard to my inspection of the subject site, its remote location and orientation relative to residential properties, its location in an existing forestry plantation and subject to the implementation of all mitigation measures across the environmental topics with potential for adverse effects on population and human health (including those to address the potential for noise and shadow flicker), I am satisfied that the proposed development will not give rise to any significant direct, indirect or cumulative impacts on population (including property values) or human health during construction, operation or decommissioning.

8.4.10. Notably short term impacts on the local road infrastructure and construction noise and dust will arise, but with mitigation measures including the management of traffic, as proposed, impacts will not be significant. Long term landscape and visual effects will also 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 and separated from them by a combination of woodland, topography and orientation. Consequently, I do not consider that effects will be significant. As discussed in the Water section of this report, no significant adverse effects on drinking water quality (or ground/well water) will arise.

8.4.11. With regard to the potential for cumulative effects of red flashing warning lights with other developments, the applicant submits a Technical Note on meeting IAA safety requirements and reducing the intensity of lighting in the landscape and states that the various mitigation measures will be applied when the lighting scheme is agreed with IAA to reduce/elimination night time visual effects that might arise. Having regard to the rural, upland landscape in which the site is situated, the small number of inhabitants locally, in conjunction with the large number of wind turbines in the

area of the site, I consider this approach to be reasonable and can be addressed by condition (i.e. that cumulative lighting effects will be reasonably minimised).

8.4.12. With regard to Sheskin Lodge and the Western Way, this derelict structure is situated in woodland, to the east of the subject site, on the western side of the Western Way. The site of the Lodge and its woodland context will not be altered as a consequence of the development. The wider landscape and visual context for Sheskin Lodge and the Western Way will change as a consequence of the development, with the introduction of large scale wind turbines in proximity to the Lodge and the walking route. Cumulative visual and landscape effects will also arise with the existing wind farm development to the east of the subject site. Whilst these changes will be substantial, the landscape has already changed significantly with the permitted wind turbines to the east of the site, there remains a substantial woodland context for Sheskin Lodge which screens views of the proposed turbines from the property, only a relatively short section of the long distance Western Way is affected by the development (and other wind farms in the area of the site) and perceptions of wind energy development is subjective, with research indicating that it is mostly positively received. Having regard to the foregoing, I am satisfied therefore that the proposed development will not have a significant adverse effect on Sheskin Lodge or the Western Way. Further, with the provision of marked walking trails and cycle paths within the site, there is potential for the development to have a long term positive effect on local amenities/tourism infrastructure.

8.5. Biodiversity

Ecology

8.5.1. Chapter 6 of the EIAR deals with ecology. It sets out its methodological approach to the assessment having regard to legislation, industry guidelines and issues raised in the scoping exercise (Table 6-1).

8.5.2. Baseline: The baseline environment is analysed by reference to desk study and site survey which include multi-disciplinary walkover surveys, terrestrial fauna surveys, badger survey, otter survey, targeted Marsh Fritillary Survey, Bat Survey (Appendix 6-2), Fisheries Report (Appendix 6-3), Aquatic Baseline Report (Appendix 6-4) and invasive species survey.

8.5.3. The subject site lies alongside and within a wider context of designated European and nationally important sites (Figure 6-2 and 6-3 and Table 6-6). The boundary of European sites overlaps with national sites and the EIAR refers to conclusions of the effects of the development on European sites in its assessment of likely effects on biodiversity. 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 6-6). Habitats on site and along the grid connection route are indicated in Table 6-12 and Figure 6-5. Within the wind farm site these comprise mostly conifer plantation and recently felled woodland. Also present is lowland blanket bog, cutover bog dystrophic lakes, bog pools, eroding/upland rivers and wet grassland along with man-made buildings, artificial surfaces, spoil and bare ground.

8.5.4. Having regard to the desk and site surveys, key ecological receptors (KERs) are identified in Table 6-13. These include:

- Nationally designated sites and European sites,
- Aquatic habitats and related species (eroding/upland rivers, aquatic and fisheries species),
- Peatlands and associated habitat (lowland blanket bog, dystrophic lakes, with both conforming to EU Annex I habitats),
- Fauna - badger, otter and bats.
- Invasive species.

8.5.5. Likely Significant Effects. The EIAR considers the likely effect of the development on KERs with do nothing, during construction, operation and decommissioning, proposed mitigation measures. Cumulative impacts are also considered. In summary, predicted effects are:

- Do nothing: Commercial forestry to remain. Biodiversity of site likely to continue as is.
- Construction: Waterbodies. Development is designed to avoid large waterbodies and watercourses within the site boundary (all major infrastructure is >50m from any significant watercourse). Watercourse crossings will comprise clear span bridges or bottomless box culverts, with no instream works proposed, or therefore potential for direct effects or barrier to movement of aquatic species. Construction activity has potential to cause pollution of water bodies (run off of silt, nutrients, pollutants) and indirect, short term, reversible and moderate significant impact on aquatic receptors. Significant mitigation measures are proposed for water management including a detailed Surface Water Management Plan (Appendix 4-4), specific measures set out in Chapter 9, 'Water' and how measures will be implemented in the CEMP (Appendix 4-3). New watercourse crossings will be carried out in consultation with IFI and in accordance with best practice guidelines. Following the implementation of mitigation measures, no significant residual effects on aquatic habitats are predicted.
  Lowland Bog and Dystrophic Lakes. No loss of these habitats. Site is bordered by European sites designated for peatland habitats. The layout of the wind farm does not encroach on the adjoining sites. Peat Stability Report (Appendix 8-1) concludes that the site is low risk for peat failure, with no potential impacts on adjoining SACs. Habitat degradation from dust emissions on SACs is ruled out in Chapter 10 under Air and Climate, with mitigation measures. Identifies potential for reversible, slight (affects a small percentage of habitat type), indirect effects on two small areas of blanket bog that are located adjacent to sections of road to be upgraded (east T11 and to the south east of substation – see Figure 6-5) and the potential for habitat degradation from dust. Mitigation measures are provided in Chapter 10 (section 10.2.3.4.2, page 10-13, and section 3.6, CEMP). In addition, an area

of peatland will be enhanced in the northwest section of the site (24.1ha) through drain blocking and removal of encroaching conifers (Appendix 6-6, Biodiversity Management Plan). Following the implementation of mitigation measures, no significant residual effects on peatlands or dystrophic lakes are predicted.

Fauna. No adverse effects on faunal species recorded within the site but not included as KER given extensive undisturbed habitat that will remain. Loss of habitat would have a Permanent Negligible Negative impact on *badger* (loss of habitat) and a short term, significant effect during construction from disturbance. Mitigation measures include pre-construction survey, monitoring of any setts, no works in breeding season, exclusion as per NRA guidelines and exclusion fencing around the main sett to the south of the substation (outside of construction footprint). Following the implementation of mitigation measures, no significant residual effects on badger are predicted. For *otter*, development avoids significant watercourses and wetland habitat and no instream works to be carried out. Apart from potential trails, no evidence of otter during survey of water courses/crossings proximate to development. Low suitability of habitat and no potential for direct effects. Construction of watercourse crossings have potential for indirect short term, moderate (all major construction works >50m from any significant watercourse) negative effects (disturbance, water pollution). Mitigation measures include protection of water quality (see above), pre-commencement otter survey, application for derogation licence if required, no works within 150m of breeding holt etc. Following the implementation of mitigation measures, no significant residual effects on otter are predicted. Development site utilised by *bats* for foraging and commuting. No significant loss of habitat proposed or loss of bat roosts in/or close proximity to development area. Construction phase likely to result in a short term, imperceptible negative impact on local bat population (habitat loss, disturbance, direct mortality). Felling will increase linear habitat for bats and mitigation measures proposed in respect of noise and lighting (Appendix 6-2). Following the implementation of mitigation measures, no significant residual effects on bats are predicted.

Invasive species. Prior to commencement a Rhododendron pre-construction survey will be undertaken and mitigation measures for the treatment of this species and to prevent the introduction of other invasive species, are proposed (section 6.7.2.3.2). Following the implementation of mitigation measures, no significant residual effects with regard to invasive species are predicted.

- Operation: KERs for the operational phase of the development are potential effects on rivers, streams, open waterbodies and sensitive aquatic fauna species and bats species. Positive effects as a result of enhancement of the surrounding area are also predicted through the Biodiversity Management and Enhancement Plan (Appendix 6.6). This refers to the enhancement of 24.1ha of land to the north west of T8, to include removal of Rhodedendron and self-seeded conifers and blocking drains to increase water levels, to provide a net gain in peatland habitat. Mitigation measures include monitoring on efficacy of enhancements.

  Rivers and streams, open water bodies and sensitive aquatic faunal species. The increased hardstanding as a consequence of the development has potential to increase surface water runoff, cause erosion and/or pollution (e.g. from hydrocarbons from vehicles) and the deterioration of surface water with consequential effects on aquatic habitat and associated species. Impact is considered to be permanent, slight negative impact as all major infrastructure is >50m from any significant watercourse and small footprint of development. Mitigation measures include operational phase drainage of the site (as set out in the Surface Water Management Plan, Appendix 4.4) which retains interceptor drains, swales/road side drains, check dams and stilling ponds/settlement ponds as required and until the area naturally revegetates. Following the implementation of mitigation measures, no significant residual effects on water bodies or associated habitats or species are predicted.

  Bats. Potential Medium collision risk identified for three bat species Leisler's bat, Common pipistrelle and Soprano pipistrelle, with High seasonal risk for some, with potential for long term effect on the three species from collision risk. Magnitude of effect is considered to be Moderate, given no significant roosts found in immediate vicinity of turbines and median level of bat activity.

Mitigation measures include reducing the bat habitat in the area surrounding the turbines, with a buffer of at least 50m between the tip of the blade and any trees or other tall vegetation that could be used for foraging (Plate 6-1, Appendix 6-2), 'feathering' of turbine blades, lighting restrictions (including limited night time illumination and post construction monitoring of effects section 6.1.2, Appendix 6-2), at least 3 years post construction monitoring, curtailment programme (if required), for example during key activity periods or weather parameters if significant fatalities (see Appendix 6-2). Following the implementation of mitigation measures, no significant residual effects on bats are predicted.

- Decommissioning: No additional habitat loss predicted. Removal of turbines will involve similar operations to construction but without large scale earth moving or excavations. Works would have a similar impacts to construction but would be smaller in scale. Similar mitigation measures to prevent impacts on water quality, associated aquatic fauna and other terrestrial fauna as during construction to apply. Following the implementation of mitigation measures, no significant residual effects during decommissioning are predicted.

- Nationally important site: The EIAR refers to the conclusions of the NIS, as boundary and interests of national and European sites overlap, and states that following mitigation measures no significant residual effects on designated sites are predicted.
- Cumulative assessment: The proposed development considers the likely effects of the development in conjunction with relevant plans (policy documents) and projects in the area of the site, that could result in cumulative impacts on KERs. This includes a review of past, present and future plans and projects (projects are listed in Chapter 2 of the EIAR). Table 6-22 of the EIAR demonstrates that the development complies with the policy objectives of local, national and regional policy documents in respect of nature conservation, biodiversity, protected species and peatlands and therefore unlikely to give rise to adverse significant cumulative environmental impacts. Cumulative effects with other proposed or permitted development in the area of the site and wind farms within 20km of the site are considered in section

6.8.2. Given the location of the development in a forestry habitat of low ecological value, and absence of loss of any valuable habitats, the EIAR considers that the development will not give rise to significant cumulative effects as a result of land take (habitat loss). Given the predicted absence of significant residual ecological effects of the proposed development, it is stated that the development cannot contribute to any cumulative effect when considered in combination with other plans or projects.

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8.5.6. Parties to the application refer to the potential for effects on the ecology of the area, including the effect of nocturnal lighting on light sensitive species. Impacts on upland bog and peat stability are addressed in the Soil section of this report. Issues raised in respect of European sites are addressed in the AA section of this report. IFI in submissions recommend that consideration is given to extending Rhododendron ponticum management to include its removal along watercourses where it is having a tunnelling effect.

8.5.7. 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, the species of flora and fauna 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 the ecology of the site or surrounding area.

8.5.8. In coming to this conclusion I am mindful of the catchment wide approach taken in Fisheries Report and the Aquatic Baseline Report, which identify sensitive aquatic species e.g. Atlantic salmon and brown trout in the wider area of the site but not the site itself and the high water quality for the three large rivers into which the site discharges and pressures on these water bodies, which include upland afforestation. The presence of these species in the catchment and the high quality of water upon which they depend underlie the importance of the mitigation measures proposed to protect water quality. These are discussed further in the Water section of this report.

8.5.9. With regard to the impact on the impact on night time lighting on light sensitive species, this has expressly been considered in the EIAR with respect to bats in

section 6.1.2 of the Bat Report (Appendix 6.2). The Report refers to the potential for increased collision risk with aviation lighting. Significant effects are not anticipated however, in the course of monitoring the operational effects of the development, the Report states that site specific mitigation measures will be reviewed in the event of potential significant effects. I note that NatureScot publication 'Bats and onshore wind turbines – survey, assessment and mitigation' (2021) does not identify wind turbine lighting as a significant risk factor in assessing the risk of developments to bat species. In this context, I am satisfied that the issue has been addressed and mitigation measures are in place to ensure that there will be no adverse effects on bats as a consequence of aviation lighting.

8.5.10. The PA in their submission do not identify any particular species of concern with aeronautical lighting and given the relatively modest lighting to be provided, distance above the canopy and arrangements for comprehensive monitoring of ecological effects, I am satisfied that there is no potential for significant adverse effects on biodiversity from aeronautical lighting from the proposed wind farm itself or in combination with the existing, permitted or planned wind farms in the area of the site (potential effects on birds are discussed below).

8.5.11. IFI recommend that the applicant extend the Rhododendron ponticum management plan or Biodiversity Enhancement Management Plan to include removal along watercourses where the species is resulting in a tunnelling effect. In response to the submission, the applicant confirms that all Rhododendron ponticum that has been recorded at the site or that is identified in pre-construction surveys will be removed to ensure that there is no tunnelling effect during the lifetime of the project. This matter can therefore be addressed by condition.

Ornithology

8.5.12. Baseline. Chapter 7 of the EIAR considers the likely effect of the development on bird species. It summarises the conclusions of the Bird Impact Assessment Report contained in Appendix 7-1. The Impact Assessment is based on survey work that has been carried out since October 2019 and which continues and includes winter and summer bird surveys.

8.5.13. The BIA sets out details on the methodology for assessment. This includes reference to best practice guidelines and identification of Important Ecological

Features having regard to desk studies and extensive field survey which includes vantage point surveys and distribution and abundance surveys carried out over the period 2019 to 2022 and determination of those species occurring within the zone of influence of the development and upon which likely significant effects are anticipated.

8.5.14. In section 2.9 it provides a statement on limitations and difficulties encountered. These include limitations on survey work imposed by COVID, H&S issues with access to certain areas and changes to the boundary of the site, topography and forestry cover constraining vantage points, with a resultant 25% of the subject site not within the vantage point survey. As a consequence the limitations a precautionary approach has been taken to certain species and the frequency of transect surveys inside the site were increased (section 2.9.2, Appendix 7-1).

8.5.15. The description of the existing environment includes Special Protection Areas in the vicinity of the site and core foraging ranges from nest and roosts sites, as per the SNH guideline document '*Assessing Connectivity with Special Protection Areas'.* (SNH, 2016). SPAs and SACs (considered to be of importance to bird species) within 20km of the site are shown in Tables 12 and 13 and Figures 2 and 3 (Bird Report). Included in section 3.2.5 and Table 4 is data from Birdwatch Irelands Bird Sensitivity Mapping Tool for wind energy development. It shows the location of the site relative to nearby low sensitivity areas for dunlin, red grouse, medium sensitivity for dunlin and golden plover and within c.1km of an area of high sensitivity for dunlin, golden plover and red grouse (to the west of the site).

8.5.16. Based on desk study, survey of the site and surrounding area, Important Ecological Features (IEFs) are identified in Table 18 and screened in or out for further assessment on the basis of the site supporting/not supporting a population of the species. IEFs screening in for inclusion:

- Merlin,
- Hen harrier,
- Kestrel,
- Buzzard,
- Sparrowhawk,
- Woodcock,

- Red grouse,
- Golden plover,
- Ringed plover,
- Snipe,
- Dunlin,
- Goosander, and
- Passerines.

8.5.17. Sensitivity of the bird species, carried forward for assessment, to wind farm development range from very high sensitivity (merlin, golden plover and dunlin), to high (hen harrier), medium and low (remainder), Table 19.

8.5.18. Likely significant effects. The EIAR considers the likely effect of the development on Important Ecological Features with do nothing, during construction, operation and decommissioning, designated sites for birds, cumulative effects, mitigation and monitoring. In summary, these are:

- Do nothing: Commercial forestry to remain with cycle of clear felling and replanting. Diversity of birds to remain as is, with some increases in populations with clear felling and replanting (including hen harrier and kestrel).
- Construction: Habitat Loss – Habitat loss largely involves a commercial conifer plantation, an alien habitat and one that is not generally favoured by the bird species that may use the habitat (Table 20 indicates bird species of IEF that may utilise the site). Bird species associated with the habitat will still retain a presence of site. Overall effect of habitat, therefore, is not considered to be significant.

  Disturbance – Having regard to guideline distances associated with disturbance for different species (NatureScot Research and other species specific research, section 4.22), the location of the development relative to IEFs and their use of the subject site/surrounding area, the Bird Assessment Report concludes that the development will not have any significant adverse effects by way of disturbance on IEFs, with the exception of Sparrowhawk, Merlin, Kestrel, Red Grouse, Golden plover, Dunlin and Snipe. For these species, proximity to nesting habitat/breeding birds will have a potential Adverse Significant Effect of Short Term duration. Pre-construction surveys

are proposed for these species with mitigation measures to reduce the significance of potential impacts. Disturbance/destruction of active nests – Best practice measures to be followed to minimise disturbance of active nests by clearing the site outside of the bird nesting season and mitigation measures if ground needs to be cleared during the restricted period e.g. area surveyed in advance by ornithologist and restrictive working area provided. If unavoidable removal of nest in accordance with Wildlife Act.

- Operation: Displacement – No significant effects predicted on the following IEFs:
    - Hen Harrier - Limited use of the site/area by the bird species (occasional visitor).
    - Sparrowhawk – Woodland species, regular at the site, suitable habitat to remain, likely low sensitivity to displacement.
    - Merlin – Could breed locally, occasional visitor to site, likely low sensitivity to displacement, nests in trees or open bog and hunts close to ground. Species not likely to be displaced from suitable habitat (see also comments in AA section of report).
    - Kestrel – Regular occurrence on site and breeding in area, low sensitivity to displacement and weak avoidance of turbines.
    - Red grouse – Suitable habitat to west/south west of site (c.112m to closest turbine, four turbines within 200m). No evidence of avoidance, some evidence of positive effects.

  Slight adverse impact predicted for:
    - Golden plover, in breeding season, given documented decline in Slieve Fyagh SAC - Suitable habitat to west/south west of site (c.112m to closest turbine, four turbines within 200m). Closest breeding pair c.590m (T2). Significant avoidance of turbines within c.200m, but little evidence of population declines at wind farm sites. No significant effect on species in winter or during migration with birds landing on bog (birds highly mobile, settle for short periods).
    - Dunlin, in breeding season, given high conservation status of species and documented severe decline in Slieve Fyagh SAC - Suitable habitat to west/south west of site to support breeding dunlin (species not

expected in area in winter). Suitable habitat c.112m to closest turbine, four turbines within 200m, closest recorded breeding pair c.1km of turbine. Distribution of breeding Dunlin well beyond range for displacement, but conservative conclusion drawn for reasons stated.

- Snipe, in breeding season, given high conservation status and potential for disturbance - Suitable habitat to west/south west of site to support breeding dunlin (species not expected in area in winter). Three pairs identified c.870m from nearest turbine. Avoidance of habitat extends to 400m and reduction of breeding density within 500m. Closest turbine is c.112m to bog, four turbines within 200m of bog. Breeding territories >400m of turbines. No significant effects outside of the breeding season.

Barrier Effect of Turbines – Site is not situated at a location where migratory species pass through. The issue of barrier effects, therefore, does not arise.

Collision – Collision risk is considered to be low (Table 21) for those species whose flight path is likely to overlap with rotor blade sweep, with overall Long Term Slight Negative for Sparrowhawk (breeding on the site), Kestrel (high conservation status, breeds locally, known susceptibility of genus to collision), Snipe (high conservation status, wintering and breeding in area of the site) and Imperceptible for Merlin (not prone to collision, scarcity of species in area).

Impacts of Maintenance – Maintenance work by small crews of 2-3, and maintenance of access tracks, are not anticipated to have any impact on local bird populations (breeding or foraging behaviour) either in the site area or bog areas adjoining the site due to the minor nature of activities.

Hinterland sites – No connectivity with sites in the wider area (Table 4, Section 2.4.2.5, section 4.3.5 and Appendix 11) and limited potential for open canopy plantation to attract bird species associated with these sites (except Hen Harrier which is at most an occasional visitor to the site).

- Decommissioning – Considered to be similar to construction, but for shorter duration, in particular disturbance impacts to bird species present at time.

- Designated sites for Birds – No significant effects on the SCIs of any European sites. See AA section of this report.
- Cumulative effects – No significant residual effects predicted for subject development. Consequently, no cumulative effects predicted with other development in the area of the site (wind farms and hydrogen plant – section 4.6).

8.5.19. Mitigation and monitoring measures are set out in section 5 of the Birds Report. These include:

- Mitigation by design. The development has been designed to avoid open bog habitats within the site and the area of unplanted blanket bog in the north west sector (continuous with bog to west of site and could be used by waders and red grouse).
- Mitigation during construction/decommissioning. Provision of appropriate buffer zones around nesting sites of IEFs during construction works (section 5.2) between March to August (inclusive), clearance of trees and ground vegetation outside of breeding season (1st March to 31st August), prior survey by ornithologist of vegetation clearance and works restricted until young have fledged and/or removal of nest in the context of the Wildlife Acts.
- Mitigation during operation. During operation, areas around turbines will be managed to prevent the establishment of scrub (mowing/strimming) and increase the risk of small mammals etc. and hunting by kestrel in proximity to turbines.
- Pre-construction/construction phase monitoring - Monitoring surveys will be carried out during the breeding season, within 500m of the development site and with transects up to 1,000m for the edge of the forest (west). The survey work will provide information on restrictive zones during construction and will have a particular focus on locating territories for Merlin (due to difficulties associated with survey of breeding Merlin).
- Construction phase monitoring for breeding birds on-site. Survey of habitat to establish presence of breeding birds up to 10 days in advance of ground

clearance (during March to August), with restrictions in place if breeding birds found.

- Post construction monitoring. To include the site area and bog to the west and south west of the site to comprise flight activity surveys to determine if the presence of the turbines is causing avoidance (monthly in years 1, 2, 3, 5, 10 and 15), distribution and abundance surveys to monitor short term and long term effects on bird populations within the site and to the west of the site (transect survey of bog for same years above during April to July) and collision monitoring (corpse search at each turbine location by trained dog/handler – monthly basis years 1, 2, 3, and 5).

8.5.20. The birds report concludes:

- There are no predicted significant effects on birds from loss of habitat.
- The construction phase could result in disturbance of breeding birds within 500m of the works boundary, including the potential for significant short term adverse effects on species of conservation interest including red grouse, merlin, golden plover and snipe. With mitigation in place, comprising use of work restrictive zones around identified breeding sites, the development is not expected to have any significant residual impact on these species.
- During operation, birds may show some avoidance of suitable habitat as a result of the presence of turbines. For breeding golden plover, dunlin and snipe the effect is considered to be slight adverse. However, the report refers to evidence that golden plover may become habituated to operational wind farms. During operation, birds will be at some risk of collision with turbines, with kestrel and snipe as the species most at risk (long term slight negative effect). With mitigation in place e.g. management of areas around turbines, the risk will be minimised.
- Baseline surveys did not identify any regular migration routes or local movements of wetland bird species through the site and the development is not expected to have any residual effect on migrating species or bird populations associated with the sites in the hinterland.
- No expected residual effects on the Special Conservation Interests of SPAs (see section 6.6).

- No expected cumulative impacts in combination with land management, other wind farms or projects, proposed, existing or permitted in the area.

Assessment

8.5.21. Having regard to the foregoing, notably the detailed survey work that has been carried out both within the subject site, the wider site and hinterland sites, the lack of substantial connectivity to these sites, the substantial literature available and referred to on likely effects of wind farms on the different bird species, the nature of the subject site, which lies within an forestry plantation providing limited habitat to support the foraging and nesting habitats, the limited land take and proposed means to mitigate and monitor the effects of the development, I am satisfied that the proposed development will not give rise to significant direct, indirect or cumulative effects on bird species.

8.5.22. In coming to this conclusion, I am mindful that the subject site adjoins the upland bog area to the west and south west which is identified as important habitat for important bird species. For landscape reasons, addressed later in this report, I recommend that turbines T5, T7 and T8 be removed. This requirement would increase the area of undeveloped land between the subject site and the bog area to the west of it that forms part of Slieve Fyagh Bog SAC.

8.5.23. NatureScot information on the effect of aviation obstruction lighting on birds at wind turbines, communication towers and other structures provides mixed findings on the effect of aviation lighting on bird species, with effects more evident with migratory species. As stated, the site is not associated with any migratory route or local movement of wetland bird, mitigation measures include monitoring of effects on mortality from collisions and there is potential for alternative lighting arrangements to satisfy IAA requirements (see alternative lighting options in Appendix 2 of applicant's response to submissions). I am satisfied therefore that the arrangements in place are sufficient to prevent any significant adverse effects on bird species as a consequence of aviation lighting.

8.6. Land, Soil, Water, Air and Climate

Land and Soil

8.6.1. In submissions, concerns are raised regarding the impact of the proposed development on upland blanket bog and peat stability.

8.6.2. Chapter 8 of the EIAR deals with land, soils and geology. It sets out the assessment methodology, which has been prepared in the context of relevant sector specific guidance documents (section 8.1.3). Methodology includes desk study, baseline monitoring and site investigation work (walkover survey, 960 peat probes and 12. no. targeted trial pit investigations, geotechnical assessment of peat stability), development of conceptual model of soils on site, scoping and consultation and impact assessment.

8.6.3. The scoping exercise raised issues in respect of peat stability, peat stability monitoring programme and the effects of climate change. A Geotechnical and Peat Stability Assessment is included in Appendix 8-1 of the EIAR. It includes an assessment of intense rainfall and extreme dry events.

8.6.4. Baseline. The EIAR describes the site as one which comprises blanket peat underlain largely by Downpatrick Formation (bedded sandstone and siltstone) with some potential for 'sub-economic local scale construction purposes' (Figures 8.1, 8.2 and 8.4). A Geological Heritage Site (meandering river channel within an extensive area of Atlantic blanket bog) is located at Bellacorick c.4km to the east of the site. There are no karst features within 10km of the site, no known areas of soil contamination on site, licensed waste facilities on or within the environs of the site and no historic mines in the area.

8.6.5. The GSI identify the site as having low to high landslide susceptibility (Landslide Susceptibility Mapping, Figure 8-5), with the northern part of the site at higher risk. The EIAR states that there have been two recorded peat failures within site (undefined landslide in each case) and an additional failure <500m to the west of the site. Two other failures have been recorded c.3km to the west and south west of the development. The largest failure within the site occurred in 1988, with the failure on a concave slope in a period of wet weather, following dry resulting in cracking of peat surface, followed by saturation and consequential peat flow across a forestry road.

8.6.6. Site investigations describe the site as having peaty clay top soil with areas of soft to firm fibrous peat, overlying granular and cohesive glacial deposits, with shallow groundwater seepage at moderate ingress below peat deposits in trial pits. Peat depths recorded across the site ranged from 2.0m to 5.7m with an average depth of 2.1m (Table 6.1, Appendix 8-1). Groundwater was encountered at a number of the intrusive site investigation sites (Table 8-5) with the remainder dry during the investigation works.

8.6.7. The Peat Stability Assessment (Appendix 8-1) has been undertaken in accordance with the principles set out in Peat Landslide Hazard and Risk Assessment: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, 2017). It has regard to peat failures in the State (Shass Mountain, 2020 and Meenbog, 2020) and the lessons learnt from these. The report has informed the layout of the development (Figure 2.1, Appendix 8-1).

8.6.8. The report calculates the Factor of Safety (FoS) for undrained (short term - construction) and drained (long term - operation) conditions, with and without the effect of stockpiled peat (Tables 7-3 to 7-10). In particular, the assessment considers the change in groundwater level as a result of rainfall on the existing stability of the natural peat slopes. It includes a sensitivity analysis with varying water level in the peat slope, including the effects of intense rainfall and extreme dry events.

8.6.9. FoS is described as a measure of stability of a particular slope, which depends on the balance of forces between weight of the soil/peat working downslope (destabilising force) and the inherent strength of the peat/soil (shear resistance) to resist downslope weight (see Figure 2.2, Appendix 8-1). FoS is the ratio of the shear resistance over downslope destabilising forces. If the factor of safety is less than 1.0 then the slope is unstable and likely to fail. The acceptable range for FoS is typically 1.3 to 1.4 (Table 7-2, Appendix 8-1).

8.6.10. The report adopts a conservative approach in its assessment (section 7.1 and 7.2, Appendix 8-1) and concludes that the development has an acceptable margin of safety and is suitable for the proposed development i.e. it has a low risk of peat failure (Factor of Safety is >1.3). This includes for all aspects of construction and

operation of the development e.g. including roads, turbines, construction sites and borrow pits.

8.6.11. The Assessment includes specific control measures for construction work in peatlands (Appendix 8-1,section 8.1 and Appendix B). The report also includes provision of a construction buffer zone (Figure 4-2, Appendix 8-1), where development is excluded from areas of the site with an elevated or higher construction risk. The report considers that there is no risk to slope stability with the intended grid connection route as it will be placed in existing forestry tracks or the public road, with limited extent of lateral and vertical excavations.

8.6.12. Likely significant effects. Table 8-10 and 8-11 of the EIAR indicates the volume of peat, subsoil and bedrock to be *removed* from the site to facilitate different elements of the project. Table 8-12 indicates where these materials will be *placed*. Soils will be managed in accordance with the Peat and Spoil Management Plan set out in Appendix 4-2. The Peat Stability Assessment includes a assessment of safety with additional loading provided by additional peat in peat placement areas. Predicted impacts arising during different stages of the project are:

- Do nothing. Commercial forestry likely to continue, with eventual felling and replanting. Land, soils and geology will remain largely unaltered.
- Construction: Peat, subsoil and bedrock excavation – No net loss of peat, subsoils or bedrock (re used on site). Potential for negative, slight/moderate, direct, likely, permanent impact on peat, subsoil and bedrock due to relocation. Mitigation measures include placing turbines/infrastructure in areas with shallower peat, maximum use of existing road network, suitable drainage system to ensure continued hydrology of site (section 8.5.2.1) and careful management of soils. With mitigation measures, no significant effects on lands, soils, subsoils or bedrock predicted.

  Contamination of soil (leakages and spillages, alteration of peat/soil geochemistry) – Potential for negative, slight, direct, short term, unlikely impact on peat, subsoils and bedrock from accidental spillages of hydrocarbons, fuels etc. Mitigation measures (section 8.5.2.2) are standard good site practices, including emergency plan included in CEMP. Residual effects are not considered to be significant.

Erosion of exposed subsoils and peat during felling and construction – High likelihood of erosion of peat and spoil during excavation and landscaping works. Main impacts are assessed under the water environment (see below). Mitigation measures (section 8.5.2.3) include appropriate management of stored peat, prompt backfilling of excavated areas, no soil stripping/excavations in heavy rainfall events, drainage to limit runoff impacts during construction and use of brash mats during felling (to prevent compaction) all in accordance with Peat and Spoil Management Plan (Appendix 4-2). With the implementation of mitigation measures, no significant impacts on soils, subsoils or bedrock predicted.

Peat instability and failure – Pre-mitigation, negative, significant, direct, low probability permanent effect on peat and subsoils. With implementation of control measures (section 8.5.2.4) which include recommendations set out in Peat Stability Assessment (above), no significant effects on land, soils, subsoils or bedrock as a consequence of peat failure.

Proposed turbine delivery route accommodation works – Potential for negative, significant, direct, unlikely, permanent effect on peat and subsoils with accommodation works at junction of N59/L529926 and intersection of N17 and N5 (widening of junctions) and overnight storage areas alongside L529926 (c.200m x5m). With mitigation measures (section 8.5.2.5) in respect of peat and subsoil excavations, contamination and soil erosion no significant adverse effects on soils and subsoils predicted (small footprint of works and minimal disturbance to local geology).

- Operation: Risk of contamination from construction vehicles and operation of substation/turbines (accidental spills of hydrocarbons, oils) – Small scale, intermittent and unlikely to have a significant effect. Mitigation measures include appropriate storage of materials. Use of granular fill to maintain access tracks – Aggregate from local quarries, authorised for use in road and hardstand maintenance. Small scale, intermittent and unlikely to have a significant effect.
- Decommissioning: Similar to construction, but reduced in magnitude, with potential for reversing/reducing potential impacts of construction e.g.

rehabilitating construction areas such as turbine bases (covering hard surfaces with peatland vegetation etc. section 8.5.4). Similar mitigation measures to apply as construction. With these no significant impacts on soils and geology are anticipated.

- Cumulative: Due to localised nature of development works, to be kept within site boundary, no potential for significant cumulative effects in combination with other developments within 20km of site boundary (Figure 2-8).

8.6.13. Assessment.

8.6.14. Having regard to the detailed assessment carried out of soils and geology, notably including the Geotechnical and Peat Stability Assessment (Appendix 8-1) and Peat and Spoil Management Plan (Appendix 4-2), the location of the proposed infrastructure on site to avoid areas at greater risk of peat failure, the low risk of peat failure identified for construction and operation, including in extreme weather events, and subject to the detailed and full implementation of proposed mitigation measures to minimise the risk of peat failure, which include detailed ground investigations to confirm peat, mineral soil and bedrock conditions, use of experience geotechnical staff and contractors and maintenance of the hydrology of the area (NB see further considered under Water below), 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.

8.6.15. Water

8.6.16. Chapter 9 of the EIAR deals with hydrology and hydrogeology. It sets out the methodology adopted for the assessment of likely, with reference to relevant legislation and guidance, and in the context of issues raised in scoping and consultation (section 9.1.3.).

8.6.17. Baseline. The subject site is situated in a headwater sub-catchment of the Owenmore River[4], with the Sheskin River draining the southern part of Sheskin Forest, an unnamed stream draining the northern part of Sheskin Forest and local streams that drain southeast to Owenmore River (Figure 9-1 and 9-2). Sheskin River and the unnamed stream originate at higher elevation within Sheskin Forest,

[4] Defined by three WFD sub-catchments, Owenmore (Mayo)_SC_010, Owenmore (Mayo)_020_ and Owenmore (Mayou)_030.

being fed by runoff and originating as a serious of bog seeps/springs. The Sheskin River and unnamed stream merge before joining Oweninny River (at Shranakilly) and this River becomes the Owenmore River. The Owenmore River flows through Bangor Ellis and discharges at sea at Tullaghan Bay c. 30km from the subject site (distance of flow). An EPA monitoring point, RS33S030150, is situated on the Sheskin River upstream of the confluence with Oweninny River. The grid connection route also crosses the sub-catchment of a series of local streams which drain south from the southern boundary of the site. These flow directly into Owenmore River, at Tawnaghmore. The existing Forest is drained by a series of shallow drains (mostly <1m) cut into the peat and/or underlying soils.

8.6.18. The hydrology of the site is characterised by high runoff and low groundwater recharge rates (to bedrock). Baseline runoff is presented in Table 9-7 and estimated stream flows are considered in section 9.3.5.3. It is stated in the EIAR that the catchment is one in which 'flashy' flows are predicted (i.e. with runoff and streamflow responding quickly to rainfall events) with the modelled flows covering a wide range of values.

8.6.19. The development site is situated on lands outside of 1 in 100 year flood risk (Flood risk Zone C, low risk – section 9.3.6 and Appendix 9-1, Flood Risk Assessment).

8.6.20. Surface water quality is presented in section 9.3.7. with sampling points within the site and downstream of it shown in Figure 9-7 and EPA water quality monitoring data in Table 9-11 for WFD monitoring location RS33S030150. No significant water quality issues are present and the EPA sampling station indicates a low nutrient water body with low alkalinity, low hardness, low salinity and generally low BOD. Biological monitoring indicates consistently High Q ratings (Q4 to 5) at sampling locations on the Sheskin River, implying favourable High status biological conditions.

8.6.21. The underlying bedrock aquifer underlying the majority of the site is identified by GSI 'Pl', poorly productive bedrock aquifer, which is generally unproductive except for local zones. (A small portion of the site is designated Lm, locally important and generally moderately productive, see Figure 9-12). In both cases groundwater flow in bedrock is expected to be via fractures, with flow direction mimicking topography and discharging locally to many small streams. Recorded peat thickness varies across the site, overlying small pockets of glacial till and bedrock. The EIAR refers

to the ingress of water below peat is some trial holes and considers that conceptually, the shallow groundwater in bedrock is hydraulically connected with groundwater in subsoils, which includes movement of groundwater via the 'transition zone' at the top of rock. Baseline monitoring of water levels in 16 no. peat piezometers across the site indicate fluctuating water levels (Figures 9-13 and 9-14). Groundwater vulnerability ranges from high to extreme for a small area approximately central to the site (Figure 9-15).

8.6.22. There are no surface water or groundwater abstractions for public water supply within or hydraulically downgradient of the site. Nearest public water supply is Carrowmore Lough c.7km to the west of Sheskin Forest. It is not connected to the subject site, receiving water from rivers/streams that drain the northern and western slopes of Slieve Fyagh. The EIAR identifies the potential for dwellings in the vicinity of the site to have a private supply well. As groundwater flow is localised with short flow paths to nearby streams, impacts on any private well which are removed from the site, are considered to be implausible. (This conclusion is not unreasonable given the characteristics of flow in the groundwater body).

8.6.23. European sites considered to be hydrologically or hydrogeologically linked to the development site are indicated in Figure 9-16 and Table 9-12 (considered in the AA section of this report). Principal environmental receptors associated with the proposed development site are considered to be the local streams and Sheskin River that drain Sheskin Forest to Owenmore River (including the local streams that are crossed by the grid connection route). These are designated as High Status waterbodies under the WFD (2016-2021).

8.6.24. The EIAR refers to drainage planning and monitoring arrangements that are designed in to the project. These include a drainage system of new and upgraded drains and swales, interceptor drains, check dams, settlement ponds, silt bags, sedimats and controlled discharge at locations throughout the site at greenfield rates and with diffused flow across ground before entering streams. Hydrocarbon filters will be used in areas where there is a risk of contamination e.g. construction compounds. The drainage layout is contained in Appendix A of Appendix 4-4 (Surface Water Management Plan). Calculations of runoff rates are shown in Appendix 9-3, EIAR, based on the site divided into sub-catchments in Figure 9-17. Drainage infrastructure will be constructed at least 50m from streams. There will be

no direct discharge to water courses. Where the site is constrained and 50m buffer cannot be provided, additional attenuation ponds and double silt fencing will be applied. Culverts being upgraded/provided will be of sufficient size to accommodate peak flows in the water course and will enable mammals to pass.

8.6.25. Detailed arrangements for monitoring during construction are set out in the EIAR and Appendix 4-4 (Surface Water Management Plan) to include daily visual checks and measurement of field parameters (section 9.3.13) of local streams along with regular inspections of installed drainage systems. Remedial action in the event of effects includes ceasing activities and corrective action prior to work recommencing. Monthly sampling is also proposed in the wider area to monitor effects and changes in baseline conditions and potential cumulative effects.

8.6.26. Likely Significant Effects. Likely significant effects of the development and associated mitigation measures are set out in the EIAR for the different phases of the development (section 9.4). In summary, predicted impacts arising during each phase are:

- Do nothing – Forestry operations to continue, no change to drainage and no impact on High status. If forestry harvested and replanted a review of the existing drainage would be required before commencement to protect water quality.
- Construction phase: Clear felling – The potential effects of release of sediments, organic matter and nutrients into drains by machinery used to fell trees could give rise to pollution of on-site and downstream waters and the risk of indirect, negative, moderate, temporary, reversible and highly probable significant effects. Proposed mitigation measures include application of best practice construction methods (section 9.4.2.1), provision of minimum buffer zones recommended by the Forest Service (Forestry and Water Quality Guidelines, FS, DMNR, 2000), small felling areas, management of drains and sediment flow in the clear felling area and drain inspection and maintenance before, during and after felling. Surface water quality monitoring will also take upstream and downstream of felling activity. With the implementation of mitigation measures, residual effects are predicted to be indirect, negative,

slight, temporary and of low probability, with no potential for significant effects on surface water receptors.

Earthworks – Similar risks to watercourses are posed by earthworks. However, the scale of earthworks is considerably bigger than tree felling and in the absence of mitigation impacts are considered to be indirect, negative, significant, short term, reversible and high probability. Mitigation measures include set back of works from water courses (at least 50m), absence of work during or after storm events, source control methods, in-line controls and treatment systems for sediment arising in working areas. Similarly, run off from peat and spoil placement areas will be managed to control sediment laden runoff (silt fences, swales, straw bales and early revegetation, regular field inspections and surface water quality monitoring upstream and downstream of construction areas). With implementation of mitigation measures, residual effects are predicted to be indirect, negative, not significant, short term and low probability, with no potential for significant effects on water quality.

Culverts at stream crossings – The development includes 8 no. new stream crossings and 9 no. upgrades to existing crossings (Appendix A of Appendix 4-4), with the potential for the physical disturbance of banks and mobilisation of silt to waterbodies with water quality and morphological effects. Potential effects are direct, negative, moderate, short term, reversible and high probability. All works to be carried out in accordance with CEMP which incorporates best practice IFI Guidelines for construction works adjacent to watercourses. Mitigation measures include avoidance of in stream works, stream crossings to be bottomless box or clear span culverts, works in summer period (July to September) and section 50 application to OPW. Underground cabling routes in the site will follow existing/proposed roads and will be within the structure of the road and associated culverts. With mitigation residual effects are predicted to be direct, negative, not significant, short term and of low probability, with no potential for significant effects on surface water courses.

Grid connection installation – The grid connection, to be installed below ground in a dug trench in the local road from the site to the N59 and along the

N59 to Bellacorick substation. The route will cross two water bodies by horizontal directional drilling. Prior to mitigation there is a risk of direct, negative, slight, temporary, reversible and medium probability on waterbodies. Mitigation measures will be applied to the launch site and include bunding, silt fences, removal of accidental spills etc.) and relevant measures for earthworks and culverting. Trench work will include mitigation measures for earthworks, retention of spoil adjacent to trenches and prompt backfilling. With mitigation residual effects are predicted to be direct, negative, not significant, temporary and unlikely, with no potential for significant effects on surface water quality.

Hydraulic effects of drainage – Section 9.4.2.5 considers the likely impact of shallow interceptor drains upslope of infrastructure components and the risk of sediment mobilisation to water courses and the potential for draining the peat. It refers to a number of research papers and to the consensus view that effects on the drainage of peat are likely to be site specific, for example, dependent on nature of drains, depth, structure and permeability of peat and regional hydrological regime. The EIAR adopts a conservative estimate of 100m (i.e. upstream of drainage works) for potential effects during the operational phase of the development, due to the time period for such effects to arise. Potential effects during construction are considered to be indirect, negative, not significant, short term, reversible and medium probability. Mitigation measures include minimising development footprint, shallow interceptor drains, integration of drainage system with existing and supervision of construction. In addition, a network of up to 20 piezometers will be installed for monitoring water levels in peat along SAC boundaries, upslope of facilities that are closest to the SACs (T2 and T17), with monthly monitoring of standpipes. Six of the data loggers along the SACs will be equipped with automatic data loggers for continuous water measurement. Residual effects from construction (over 2 years) is considered to be indirect, negative, not significant, short term and low probability with no potential for significant hydrological or hydrogeological effects beyond those already experienced in Sheskin Forest.

Water quality effects of drainage – The EIAR considers the potential for drainage water to carry suspended matter, dissolved organic matter and nutrients and for excessive drainage of peat to also impact on the pH of surface water. Changes in water quality have the potential to affect downstream water bodies, stream morphology, aquatic habitat and biota and WFD status. Pre mitigation potential effects are considered to be indirect, negative, slight, temporary and of medium probability. Mitigation measures include the drainage controls referred to previously and extensive monitoring of streams upstream and downstream of site works. With mitigation, residual effects are considered to be indirect, negative, not significant, temporary and of low probability with no potential for significant effects.

Pumping – Pumping from open excavations (short term) and Borrow Pits (c.10 months), to facilitate working, has the potential to give rise to suspended solids in discharge waters. Extraction of water has the potential to give rise to hydrogeological effects (e.g. with alterations to groundwater and surface water flowpaths). In the absence of mitigation, impacts (on water quality) are predicted to be indirect, negative, not significant, temporary, reversible and medium probability. Given the modest volume of water likely to be pumped from excavations due to the generally low permeability characteristics of the till and bedrock groundwater flow system, quantitative hydrogeological effects from pumping are predicted to be direct, neutral, imperceptible, temporary and unlikely. Mitigation measures include minimising footprints for excavation works, use of upslope interceptor drains/berms of works areas, management of discharge waters through silt bags/settlement pond and managed discharge rates. With mitigation, no significant effects on water quality or hydrogeology (quantitative effects) are predicted.

Accidental spills and other releases – The potential for adverse effects on waterbodies will be mitigated by standard construction practices, as set out in the CEMP (Appendix 4-3) and Surface Water Management Plan (4-4), for example in respect of arrangements for refuelling, fuel storage, spill kits etc. With the implementation of these measures, residual effects will be indirect, negative, imperceptible, short term and unlikely, with no potential for significant effects on surface water or groundwater quality.

Release of cement based products – The potential for adverse effects on the aquatic environment at and downstream of any cement release will be mitigated by standard construction practices, for instance, where concrete is delivered in sealed delivery truck, no batching on site, use of pre cast elements, no washing out of trucks on site, chute cleaning to take place at lined washout ponds, appropriate management of use within the site. With mitigation residual effects on surface water quality are considered to be indirect, negative, imperceptible, short term and unlikely.

Wastewater management – The applicant intends to provide staff welfare facilities at each of the 4 no. construction compounds with regular collection and off site disposal of waste by permitted wastewater collector. No significant effects on local streams or groundwater bodies are therefore predicted.

Turbine delivery accommodation works – Construction activities at accommodation work sites may give rise to contaminated run off (e.g. siltation/accidental spills). Mitigation measures are proposed at these sites, as per the measures for earthworks and accidental spills (above). With the implementation of these measures no significant effects on nearby surface waters are predicted.

Public or private water supply – No adverse effects on public water supply are predicted, given the absence of such supplies in the area. Nearest downstream residential dwellings lie >1.3km from the nearest proposed turbine location. Groundwater flow in poorly productive bedrock aquifer is localised with short flow paths (hundreds of metres) to local streams. With the implementation of best practice mitigation measures in respect of pollution arising from accidental spills, siltation, wastewater management etc. no significant impacts on private supplies are predicted.

WFD Water Body Status – A WFD compliance assessment is presented in Appendix 9-4 of the EIAR. The subject site is hydraulically connected to Sheskin_010 and Owenmore (Mayo)_040 river sub-basins with High WFD status for the period 2016-2021 and was ‘not at risk’ of meeting WFD objectives (to protect/restore good status and to prevent deterioration). The

underlying bedrock aquifers (site and sub-basins) also met WFD Good status for the period 2016-2021 and was 'not at risk' for the same period. Mitigation measures are proposed to break the potential source-receptor linkages and allow for attenuation via the various best practice and proven measures described for the construction phase (summarised above and set out in Appendix 9-4, Table 1). The appointed contractor will be legally required to adhere to the CEMP and extensive monitoring is proposed (section 9.3.1.3, also referred to above). With the implementation of these measures no significant effects on WFD status of the river sub-basins or underlying groundwater bodies are predicted to occur.

- Operation (35 years) – Maintenance works – During operation, maintenance of access roads, structures and the drainage system, will be undertaken in accordance with the mitigation measures for the control of accidental spills and in line with the surface water management plan (SWMP). This includes maintenance of interceptor drains, swales/road side drains and check dams which are retained and stilling ponds/settlement ponds until areas have become revegetated (section 3.2.3, SWMP, Appendix 4-4). With the implementation of these measures, and with on-going monitoring of water quality, no significant impacts are predicted from maintenance works.

  Hydraulic effects on blanket bog - Potential effects arise on upslope blanket bog, if the subject site is overly drained. The EIAR predicts that the hydraulic effect of the development on upslope bog is not likely to be significant, having regard to the modest area affected, 0.14% of designated bog, the 'wet' nature of blanket bog, the shallow nature of planned drains and the weight of evidence from literature. With mitigation measures, minimising development footprint, maintaining shallow drains and integration of the draining system into the existing network in the forest and monitoring with piezometers throughout operation and decommissioning, significant hydrological and hydrogeological effects are not predicted to occur.

  Water quality effects – With the implementation of mitigation measures, as set out in the SWMP and monitoring of surface water bodies, no significant effects on water quality are predicted.

Compaction of access track and hardstanding – The EIAR calculates that likely effect on compaction of access track and hardstanding, will give rise to a modest increase in run off from such areas and one which can be accommodated within the proposed settlement pond and surface water management system (see Appendix 9-3). Significant effects from surface water compaction are, therefore, not predicted to occur.

Water well installation and pumping – Staff welfare facilities will be provided at the two control buildings (in sub-station compound). The limited requirement for water for occasional toilet flushing will be sourced from rain water or a groundwater well adjacent to the substation. The well will be flush to the ground, covered and will include an in-well pump to direct water to a water tank in the roof space of the control building. Volume required is small i.e. $<5m^3$/day. The hydraulic impact of occasional pumping is predicted to be localised and not resulting in any significant effects on groundwater levels, peat water levels or natural groundwater baseflow to streams.

Wastewater management – Wastewater from toilet facilities in the control buildings will be removed from site by permitted waste contractor. The wastewater storage tank will be fitted with an automatic alarm system for notice of requirement for emptying. No significant impacts on surface or groundwater are, therefore, predicted.

WFD water body status – With the implementation of operational mitigation measures in respect of pollution control and surface water management, no significant effects on WFD water body status are predicted.

- Decommissioning – Potential effects arising from decommissioning are considered to be similar to construction, but at a reduced magnitude. In addition, some of the potential effects caused during construction may be reversed/reduced e.g. rehabilitation of turbine bases/hardstandings. Mitigation measures to avoid contamination by accidental spillages and compaction of soil by plant will be implemented as per construction phase. With the implementation of these measures, no significant effects on hydrology or hydrogeology are predicted.

- Cumulative effects – The EIAR, section 9.4.5, refers to developments within 20k of the subject site. These include wind farms and the proposed hydrogen plant at Bellacorick. ABO Sheskin (8 no. turbines) and Oweninny Phase 2 (32 no. turbines) (Figure 2-3 and 13-16) are relevant as they fall within the sub-catchment of Sheskin_010. Oweninny Phase 1, Oweninny Phase 3 and Bellacorrick wind farm can influence the Oweninny and Owenmore Rivers, but not Sheskin stream as they are situated in separate sub-catchments. ABO Sheskin is situated in an upland setting, north east of the subject site and it carries the same risks and potential effects of the subject site. Oweninny Phase 2, to the south east (and downstream of the subject site), is situated in bog that has been the subject of rehabilitation. Sheskin River is therefore identified as at risk from cumulative effects and downstream of this Owenmore River (deterioration in water quality). With mitigation measures in place to protect water quality, as outlined above for the subject development, and similar measures for ABO Sheskin, significant cumulative effects on the Sheskin River and Owenmore River are not predicted. However, to detect and distinguish between potential effects from the subject development from both ABO Sheskin and Oweninny Phase 2, additional monitoring points are proposed (see section 9.4.5).

  The proposed hydrogen plant is situated adjacent to Owenmore River, downstream of the confluence with Sheskin River, as such it does not interact hydrologically or hydrogeologically. End points of grid connection routes from both developments will be at roughly the same location near the former Bellacorick power station, but associated construction works do not cause any significant hydrological or hydrogeological cumulative effects.

  No cumulative effects are identified for groundwater.

Assessment.

8.6.27. In submissions, prescribed bodies raised concerns regarding the impact of the development on public water supplies, on important fisheries habitat, including Oweninny River, Owenmore River system, Glencullin River, Barroosky River, Glenamoy River Fishery and construction management.

8.6.28. The likely effects of the proposed development on the water environment are considered in depth in the EIAR. The applicant presents a good understanding of the water environment in which the proposed development is situated and identifies key risks, notably water pollution and peat movement as a consequence of the construction, operation and decommissioning of the development.

8.6.29. A precautionary approach is taken with regard to risk assessment and proposed monitoring and mitigation measures are both extensive and comprehensive. Absence of effects on the water environment, including the WFD water quality and risk status of downstream water bodies, is predicated on the full and careful implementation of these measures.

8.6.30. Having regard to the foregoing and subject to strict condition requiring 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. This includes any risk of any significant effect on ground water (wells) and public water supply, given the nature and pattern of limited flow paths in the underlying aquifer, distance of the Carrowmore Lough (IW public supply) from the subject site (c.7km to the west of Sheskin Forest) and source of water for the Lough.

8.6.31. 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.

Air and Climate

8.6.32. Chapters 10 and 11 of the EIAR address air and climate and noise (respectively).

Air

8.6.33. Chapter 10 sets out the methodology adopted for the assessment of likely effects on air with reference to air quality standards (Table 10-1 and 10-2) and background levels. The subject site lies in a rural area, with an air quality of 'Zone D', with typically low levels of background pollutants (Tables 10-3 to 10-7).

8.6.34. Likely significant Effects. Likely significant effects of the development and associated mitigation measures are set out in the EIAR for the different phases of the development (section 10.2.4). In summary, these are:

- Do Nothing – In the absence of the development, opportunities to reduce emissions of carbon dioxide, oxides of nitrogen and sulphur dioxide, due to the continued dependence of electricity derived from coal, with indirect, slight, negative impact on air quality nationally.
- Construction: Exhaust emissions – It is anticipated that exhaust emissions from plant, machinery and transport of workers, materials and structures to the site (e.g. NO_2, benzene and PM_{10}) will rise for the duration of construction work (wind farm and grid connection), with a consequential slight to moderate negative impact in terms of air quality. Mitigation measures are set out in section 10.2.4.2 and include standard construction practices for the operation and maintenance of construction vehicles and plant, use of borrow pits on site for materials and nearest licensed waste facility. With implementation of these, a short term slight negative effect is predicted with no significant direct or indirect effects on air quality.

  Dust emissions – Dust emissions from construction works are assessed in the context of NRA assessment criteria (Table 10-8) which has regard to the size of the development and distance from source for significance of effects. Turbines and other infrastructure are given a Major rating, haul route a Moderate rating and grid connection and transport to site, Minor rating.

  No significant effects are predicted for the construction of turbines, other infrastructure, haul route upgrades (for delivery of turbine components) due to size of operation, temporary nature of works, intervening vegetation and/or distance from nearest sensitive receptors.

  Mitigation measures are set out in section 10.2.4.3 and refer to standard good practices including use of wheel wash, dust suppression (under supervision of Ecological Clerk of Works), use of specified haul routes etc. With implementation of these, it is predicted that there will be no significant direct or indirect effects on air quality due to dust emissions during construction.

- Operational: Exhaust emissions – These will arise from occasional machinery and Light Goods Vehicles that will be required intermittently on site for maintenance. It is considered that these will give rise to a long term imperceptible negative impact. Mitigation measures include maintenance of any vehicles/plant brought to site in good operational order. With mitigation no residual significant environmental effects are predicted.

  Air quality and human health – By providing an alternative to electricity from coal, oil or gas fired power stations, the development will result in emission savings of carbon dioxide, oxides of nitrogen and sulphur dioxide, with a long term significant positive effect on air quality and human health (see below, under Climate).

- Decommissioning: Impacts of decommissioning are considered to be similar to construction, but with less impact. Mitigation measures for construction will be applied to decommissioning. With these no significant effects of decommission on air quality are predicted.

Climate

8.6.35. Baseline. The EIAR describes the climate and weather in the existing environment. In section 10.3.3. the EIAR calculates the net loss of CO_2 as a consequence of the development. The calculation is based on methodology development by the Scottish government (and others) and includes (a) assessment of peat loss (excavation or drainage) and consequential loss of carbon store against (b) CO_2 savings from the wind energy generation and carbon gains due to habitat improvement/site restoration. Appendix 10-1 of the EIAR sets out core input data to the Scottish government's on-line carbon calculator. Table 10-13 of the EIAR indicates CO_2 losses from the proposed development (total 393,259 tonnes CO_2 equivalent). The calculation is conservative as it assumes that the development footprint comprises 'acid bog' whereas the habitat that will be impacted is predominantly commercial forestry. It is also calculated on the basis that habitats on site will not be restored upon decommissioning (and future operation of newer turbines may provide additional carbon neutral renewable energy). In section 10.3.3.3.2 the proposed development will save 212,087 tonnes of CO_2 per annum or 7,423,045 tonnes over the 35 year operational life. This figure is based on the wind turbine operating at

maximum capacity and excludes the CO_2 to be saved as a consequence of replacement forestry planting (NB if operating at minimum capacity, the wind farm would displace 4,948,685 tonnes of CO_2 over its lifetime).

8.6.36. Likely significant Effects. Likely significant effects of the development and associated mitigation measures are set out in the EIAR for the different phases of the development (section 10.3.4.2.1). In summary, predicted impacts arising during each phase are:

- Do nothing – If the development were not to proceed, there would be a lost opportunity to reduce greenhouse gas emissions such as CO_2, nitrogen oxides and sulphur dioxide from the atmosphere.
- Construction phase: Greenhouse gas emissions – The construction phase is predicted to give rise to slight, but insignificant greenhouse gas emissions (from vehicles and plant, transport to the site). Mitigation measures include good construction management practices in respect of vehicle/plant maintenance, use of specified haul roads, use of borrow pits and nearest Materials Recovery Facility etc. With the implementation of these measures, no residual significant impacts on climate as a result of greenhouse gas emissions are predicted.
- Operation: Greenhouse gas emissions - With the projected displacement of substantial CO_2 emissions over the lifetime of the project (above), it is stated that the development will have a long term moderate positive significant effect on climate.
- Decommissioning: Effects on air arising during decommissioning will be similar to construction, with less impact. Similar mitigation measures will apply and no significant effects are predicted.
- Cumulative effects (air and climate):
    - The EIAR refers to other wind farms/development which are proposed in the vicinity of the site. It is considered that if these are constructed at the same time there is potential for short term slight negative cumulative impacts on air quality and climate due to vehicular and dust emissions. Operational emissions of CO_2, oxides of nitrogen, sulphur

dioxide and dust will be minimal (from operation and maintenance vehicles on site) with no potential for significant operational effects on air and climate. The cumulative effect of the development with other wind energy installations, will be a cumulative, long term, positive impact on air quality and climate.

Assessment

8.6.37. 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 during construction and operation, 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.

8.6.38. In coming to this conclusion I am mindful that the construction of turbines, hardstandings, new access tracks etc. takes place within the existing forestry, providing a buffer between the development and adjoining sensitive habitats (see also AA section of this report). Further, dust emission from the use of haul roads would have limited geographical effect (Table 10-8) in the rural environment.

Noise

8.6.39. Chapter 11 of the EIAR considers noise effects of the development. It sets out the methodology adopted for the assessment which is based on standard industry guidelines, notably the Wind Energy Guidelines of 2006 supplemented by guidance in ETSU-R-97 and the IOA GPG where appropriate (see section 11.2). Appendix 11-1 and 11-2 set out the Construction Noise Report and Operational Noise Report respectively. The noise impact assessment is conservative with the assessment of likely overlap between tasks in the construction phase and assuming that all equipment is constantly operating at full power and is located at the closest point to each receptor (section 11.4.1). The assessment is based on the candidate turbine with a rotor diameter of 170m, serrated trailing edge blades and a hub height of 115m.

8.6.40. Baseline. Background noise monitoring was undertaken at three locations to the north, west and south of the site (Noise Monitoring Locations, NMLs shown in Figure

11-2). The locations were identified as indicative of the background noise environment for the 23 noise sensitive receptors (NSRs) within 2km of the subject site H1 to H23, Figure 11-2). Of these 23, seven NSRs were chosen as Noise Assessment Locations for the construction, operational noise assessment and cumulative impact assessment (CNAL01 to 07, Figure 11-1, construction, and NAL1 to 7, Figure 11-2, operation). NB Sheskin Lodge is scoped out as a noise sensitive receptor due its ruinous condition.

8.6.41. The subject site lies in rural area where existing background noise levels at NSRs are low (<30dB at low wind speeds), Table 11-3 and 11-4. The predominant noise sources in the area are wind induced noise, local watercourses and birdsong. At some receptors soundscape is affected by some distant road traffic noise.

8.6.42. Likely significant Effects. Likely significant effects of the development are set out in the EIAR for the different phases of the development. In summary, predicted impacts arising during each phase are:

- Construction – For all construction noise assessment locations (CNALs), and for all scenarios, predicted construction noise is less than the threshold level for day time, evenings, weekends and night time hours (Table 11-7).
- Blasting – Extent of blasting to be determined once intrusive site investigation tests completed. Blasting to be designed to ensure that vibration at nearest receptors would not exceed the guideline limits set out in BS 5228 and related standards (section 11.4.2.2).
- Operation – Tables 11-8 and 11-9 set out the total Wind Energy Development Guideline noise limit for daytime and night time hours, respectively, at each noise assessment location, for different wind speeds. The limits are based on the following criteria (see section 11.4.1.3):
    - 40 dB $L_{A90, 10min}$ for daytime period, and
    - 43 dB or background noise +5 dB, whichever is greater for night time (see section 11.4.1.3).

  Table 11-10 and 11-11 set out the likely cumulative noise likely to arise at each NAL for different wind speeds for day time and night time periods. Wind farms included in the assessment are Oweninny 1, ABO Sheskin Wind Farm

and Oweninny 2 (see Figures 2-3 and 11-3). The operational Bellacorrick Wind Farm is not considered as it is understood that it will be decommissioned as part of the construction of Oweninny 2 and 3. Corvoderry Wind Farm is not considered as the planning permission for it has expired. Oweninny 3 is not considered as it is at too early a stage to provide turbine locations and parameters. Further due to the separation distances between the closest turbines and NSRs (>5km) it is anticipated that noise emissions from Oweninny 3 would have a negligible impact at noise sensitive receptors located closest to the development.

The assessment indicates that the development can operate concurrently with the operational and permitted wind farms near to the NALs whilst meeting the total WEDG noise limits, with no significant noise effects.

In order to take into account the noise limit that has already been allocated to/or could potentially be allocated to other wind farms, Site Specific Noise Limits are proposed (see Appendix 11-2). In summary, the EIAR proposes that the full WEDG Noise Limit be allocated to the proposed development, as the cumulative predictions from other wind farm developments do not need a portion of the limit for NALs 1, 2, 6 and 7. However, for NALs 3, 4 and 5 apportionment was required in order to allow the proposed development and other wind farm developments to co-exist within the total WEDG Noise Limits (see Tables 11-12 and 11-13, EIAR). Without mitigation, at NAL 3 a minor exceedance of 0.1 dB was predicted during the daytime period at a windspeed of $5ms^{-1}$ and of 0.4 dB during the night time at wind speeds of 6-$9ms^{-1}$. Similar exceedances arise at property H02, with the potential for significant effect at two receptors H01 and H02. To meet Site Specific Noise Limits, Turbine 18 would have to operate in a lower noise mode for certain wind directions and wind speeds.

- Decommissioning – Scoped out of assessment as noise levels are unlikely to be greater than during construction.

8.6.43. Mitigation measures are set out in section 11.7 of the EIAR. These include good construction practices in section 11.7.1 and final wind turbine model selected to comply with noise limits set out in the EIAR and operation of T18 in a lower noise

mode for a limited range of wind speeds. Section 6.5.14 of Appendix 11-2 states that in the event that planning permission is granted for the development it would be appropriate to set noise limits equal to the Site Specific Noise Limits presented in Tables 6.88 and 6.99 (repeated in Tables 11-12 and 11-13, EIAR).

8.6.44. With the implementation of mitigation measures, the EIAR concludes that there will be no significant noise effects from construction or operation of the wind farm or cumulative effects during construction and operation.

Assessment

8.6.45. Having regard to the location of the proposed wind turbines in a rural area and largely removed from nearby residential development, the detailed noise assessment carried out for construction and operation of the development, the attention paid to cumulative impact assessment and to apportioning noise limits to ensure coexistence of wind farms within the Total WEDG Noise Limits and to the observed noise environment at the site which is influenced by the operation of Oweninny 2 and the construction of ABO Sheskin, I am satisfied that the subject development will not give rise to significant direct, indirect or cumulative effects, by way of noise, at nearby sensitive receptors.

8.6.46. I note that Bellacorick Wind Farm has been scoped out on the grounds that it will be decommissioned and replaced with Oweninny 3. This is not unreasonable given the distance of the wind farm from the subject development (c.5km) and the likely limited contribution the development (Bellacorick Wind Farm) would make to background noise (see 5.5, Appendix 11-12).

8.6.47. I note that Sheskin Lodge has not been identified as a noise sensitive receptor. Given the longstanding derelict state of this structure, I do not consider that such an approach is unreasonable. Further, any future development of the Lodge could not unreasonably take place in the context of its unique location within a substantial wind farm development and alongside a national walking route.

8.6.48. In their submission, IFI request that details of explosives to b e used in borrow pits be provided to the EMC. This can be addressed by condition.

8.7. Material Assets, Cultural Heritage and the Landscape

8.7.1. Chapter 12, 13 and 14 deal respectively with archaeology and cultural heritage, landscape and material assets. (Effects on tourism and amenity resources are considered in chapter 5 of the EIAR and in population and human health above).

Archaeology and Cultural Heritage.

8.7.2. Chapter 12 of the EIAR provides an assessment of the proposed development on archaeology, architecture and cultural heritage. It is based on desk top and field survey. Dense forestry is identified as a limitation associated with field work making access to certain areas difficult. Archaeological testing and monitoring at the construction stage is proposed, post clear-felling (section 12.2.3.1), to assess the site for the presence of sub-surface archaeological features.

8.7.3. Baseline. The existing environment in the area of the site includes:

- Céide Fields and North West Mayo Boglands – These sites which are on the World Heritage Tentative list due to their outstanding cultural heritage value. They lie at distance to the north west and north east of the site (Figure 12-2). Céide Fields comprises a Neolithic landscape consisting of megalithic burial monuments, dwelling house and enclosures within an integrated system of stone walls defining fields which are spread over c.12km^2 of north Mayo. Many of the features are preserved intact beneath blanket peat that is over 4m deep in places. The significance of the site is stated to lie in it being the most extensive Stone Age monument in the world and the oldest enclosed landscape in Europe (section 12.3.2.1). Céide Fields are identified in the Record of Monuments and Places (site no. MA006-032) and the zone of archaeological potential around the site is shown in Figures 12-3 and 12-4. No turbines will be visible from the Céide Fields or visitor centre (see Landscape below).
- National Monuments and Recorded Monuments – No NM within 10km of the nearest proposed turbine. Nine RM lie within 5km of nearest proposed turbine (Table 12-3, Figure 12-5).
- Excavation database – No features revealed in any excavations (section 12.3.2.4).

- Topographical files of the National Museum of Ireland - A small number of finds have been noted in the vicinity of the subject site (Figure 12-6). The EIAR states that the finds demonstrate, in general, the artefact bearing potential of bogs that could extend into the proposed development.
- Protected structures – Nearest are >16km from the subject site (Figure 12-7).
- NIAH structures – Two structures are listed in the NIAH within 5km of the nearest turbine, Sheskin Lodge (Reg. no. 31301901) immediately east of the site and the Catholic Church of Our Lady (31302701) at Tawnaghmore, c.2.5km to the south of the wind turbine site (Figure 12-8). Sheskin Lodge is described in section 12.3.3.2.1 of the EIAR. It is in private ownership and is located 767m to the south of T20 and c.921m to the north east of T21. It is associated with the family of Jameson whiskey and British writer Terence Hanbury White. The Lodge is described as a three bay single storey sporting lodge, now disused. The Catholic Church of Our Lady is situated c.2.3km to the nearest turbine (T18), adjacent to the junction of the local access road and N59 and therefore in proximity to the proposed grid connection cable route (Figure 12-11). It is located at the roadside c.40m to the east and north of the proposed grid connection cable route. As the route is confined to the road side, the structure will not be impacted.
- Cartographic evidence – 1st edition of the OS historic map (1829-41) shows largely open featureless landscape in area of the site. A stone bridge is located at the northern end of the proposed grid connection route (Figure 12-11). It is not a protected structure, NIAH or recorded monument. Cassini 6" map shows more enclosed fields in vicinity of T20 and to the south of T10 and T4.
- Haul route. Two areas along the delivery route require groundworks, junction of local road and N59 and at junction of Ballyglass East south of Charlestown and south of the N59 (Figure 12-12 and 12-13). Potential effects to sub-surface archaeology may arise.

8.7.4. Likely Significant Effects. Likely significant effects of the development and associated mitigation measures are set out in the EIAR for the different phases of the development. In summary, impacts are:

- Construction – Given the absence of resources in the footprint of the site or grid connection, no direct effects are predicted for UNESCO World Heritage Sties, National Monuments, Recorded Monuments or known archaeological

sites. However, it is stated 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. If archaeological features are uncovered the developer will be prepared to provide resources for the resolution of such features whether by preservation by record (excavation) or preservation in situ (avoidance), with the NMS informed of such findings to discuss how best to proceed. Subject to monitoring the EIAR concludes that there is no potential for significant effects on unrecorded sub-surface sites.

No protected structures will be directly affected by the development, as they are removed from the site. Similarly, there will be no direct effects on the two NIAH structures within the EIAR site boundary, Sheskin Lodge and Catholic Church of Our Lady. The grid connection cable will traverse the stone bridge located at the northern end of the proposed grid connection route by HDD with no potential for direct impacts on the bridge structure.

- Operation – Impacts by virtue of operation of the proposed wind farm will be largely through indirect effects of impacts on the setting of cultural heritage sites. Céide Fields – Zone of Theoretical Visibility and photomontages indicates that no turbines will be visible from Céide Fields, in particular from the visitor centre (Appendix 12.2). National Monuments and Protected Structures – None within 10km or 16km respectively of the nearest turbine. No National Monuments within the ZTV of the development or potential for setting of Protected Structures to be compromised. Recorded monuments – The potential for visual effects on recorded monuments within 5km of the nearest turbine is assessed in Table 12-5, with no significant effects for most and moderate effects for MA019-001 Crannog and MA027-003 Cist, on the basis of number of turbines visible (see Table 12-5 and Figure 12-5). NIAH – Potential for Significant effects on the setting of Sheskin Lodge, 0-1km from site, and Moderate effects on setting of Catholic Church of Our Lady, Tawnaghmore, 2-3km from site, with 19-21 turbines within ZVT of both structures. No mitigation measures are stated to be possible. However, in practice impacts likely to be less as screening will be provided by vegetation and buildings. Bridge at northern end of proposed grid connection –

Potentially 19-21 turbines to be seen from the location of the bridge. However the bridge is not subject to statutory protection and is of local cultural heritage significance. Potential for visual effect is considered to be not significant.

- Cumulative impacts: Potential cumulative impacts on sub-surface archaeology during construction. However, as all projects have been assessed through EIAR, all potential negative impacts will have been addressed. If the proposed mitigation measures are implemented, then cumulative direct impacts will not occur, regardless of other projects within 20km. Indirect impact on setting of archaeology and cultural heritage from proposed wind farm development in area of site and proposed hydrogen plant at Bellacorick (see Figure 12-14). No visibility of any of the proposed/permitted/constructed turbines from Céide Fields. No National Monuments within 10km of development or any proposed, permitted or operation turbines. Likely increase in adverse effects on the setting of RMPs and two NIAH structures, but these are not considered to be significant and comprise a worst case scenario.

Assessment

8.7.5. Public submissions in respect of the development raise concerns in respect of impact of the development on the setting of Sheskin Lodge. The DAU recommend conditions in respect of the implementation of archaeological mitigation measures, pre-development testing and reporting on archaeological/monitoring investigations. The PA raise concerns regarding the potential effect of the development on Céide Fields. In response to the submissions, the applicant argues that archaeological monitoring is more appropriate than pre-development testing and refers the Board to the EIAR which addresses impacts on Sheskin Lodge and Céide Fields and the absence of likely effects.

8.7.6. Having regard to the absence of known features of archaeological within the footprint of the development, the nature and pattern of archaeological heritage in the area of the site and the nature of the development site (with established forestry), I am satisfied that archaeological monitoring of groundworks is sufficient to prevent any significant adverse effects on archaeology, with NMS informed of any finds and means of proceeding agreed in advance with the Service.

8.7.7. With regard to Céide Fields, I am satisfied that the visual impact assessment has adequately demonstrated that the proposed wind farm, in conjunction with permitted and constructed developments, as evidenced by site inspection, are not visible from the Céide Fields visitor centre or from public roads in the area of the visitor centre. Views from the wider surveyed area (Figure 12-2) may be possible but these are all at significant distance from the wind farm site (and other wind farm development) and would not be dominant or detract from the setting of Céide Fields.

8.7.8. Sheskin Lodge is situated within a woodland setting that does not form part of the application site. It is situated c.900m from the nearest turbine and its immediate context would not therefore be affected by the development (direct impact). The proposed development will introduce a significant number of turbines to the wider forestry setting of the Lodge, with the potential for 19-21 turbines to be visible. However, substantial tracts of woodland remain and in practice visibility of turbines will be less. Notwithstanding this, the setting of the Lodge will be altered significantly, indirectly, as a result of the development and these effects will be in addition to the visual effects of existing, permitted and proposed wind turbines to the north east and south east of the Lodge. Whilst this outcome is not ideal, the Lodge is in a poor condition and appears to have been last occupied in 1939 and potential remains for its restoration in a changed and unique context alongside the wind farm development and Western Way.

8.7.9. With regard to the remaining impacts on built heritage, I am satisfied that the proposed development largely, by virtue of its distance from structures/features, minor nature of works (e.g. installation of cable in road corridor) and/or proposed construction methodology, the proposed development will not have any significant adverse direct or indirect effects on archaeology or cultural heritage.

8.7.10. Cumulative effects will arise in the area of the site, most notably affecting Sheskin Lodge (discussed above) and the Catholic Church of Our Lady at Tawnaghmore, by virtue of the large number of wind turbines in the area. However, the proposed development which is separated from the church by existing wind turbines will not result in a significant cumulative effect.

8.7.11. In summary, I am satisfied that the proposed development would not give rise to significant direct, indirect or cumulative effects on cultural heritage.

Landscape.

8.7.12. Chapter 13 of the EIAR deals with landscape. It assesses the landscape and visual effects of the development having regard to the baseline environment in terms of landscape character, value and sensitivity to change. The assessment uses theoretical visibility mapping, representative viewpoints and photomontages (EIAR, Volume 2, Photomontage Booklet). A detailed description of assessment methodology, which as regard to industry best practice guidelines, is given in Appendix 13-1. Mitigation measures include an iterative design process which has informed the layout of the wind farm and location of turbines (section 13.1.4). Notably this includes a tip height of 200m and a base elevation below 240m AOD to ensure that they are contained by the elevated landform encircling the site to the north and west (Slieve Fyagh).

8.7.13. Baseline. The baseline landscape and visual context for the development has been undertaken by desk survey and site visits which include on site screening analysis. *Visibility* of the proposed development is addressed in section 13.3. On the basis of a 'bald' topography, a zone of theoretical visibility for the proposed wind farm is indicated in Figure 13-1 (with the zoned divided into areas where different numbers of turbines will be visible). It is based on half blade height of wind turbines as points of reference i.e. only half a blade may be visible over the topography as opposed to seeing a whole turbine. The ZTV identifies the elevated topography largely to the north and west which precludes many views of the turbines and the relatively flat plains to the south and south east where there is no topographical screening and potential for longer range, and more expansive views (including from the northern extent of the Nephin Range, Figures 13-1 and 13-2). Results of a Route Screening Analysis, undertaken within 5km of the site, are set out in section 13.3.3 of the EIAR and in Figure 13-3. The exercise indicates that the majority of roads within 5km of the site have little or no screening, indicating that the ZTV will be a good indicator of visibility.

Landscape baseline is addressed in section 13.4 of the EIAR. It sets out relevant landscape policies from the Mayo County Development Plan 2022-2028 and Renewable Energy Strategy and refers to designated vulnerable features identified in the Landscape Appraisal for County Mayo. Scenic routes and scenic routes with designated views are shown in Table 13-2 and Figure 13-4. Sensitive

skylines/ridgelines, riverbanks or lakeshores are also shown in Figure 13-4 and Figure 13-5 shows these features in the context of the ZTV. These include, within 5km of the proposed development, Slieve Fyagh, Owenmore River and Carrowmore Lake. Landscape Policy Areas and Renewable Energy Strategy Designations are shown in Figure 13-6. The subject site lies in Landscape Policy Area 3 (LPA3), Uplands, Moors, Heath or Bogs, and 16 of the proposed turbines in Tier 2, wind energy open to consideration, and 5 outside of any designated area. Within LPA3 areas, wind farms are considered to 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'*.

Landscape Policy Areas 1 and 2 provide a wider context for the development and are identified in the EIAR as sensitive landscape receptors for landscape and visual impact assessment as they are likely to have visibility of the proposed development.

Landscape Character Units are shown in Figure 13-11. Having regard to the landscape designation of the site, its quality and condition and use as commercial forestry (Tabel 13-5), the landscape value of the site is considered to be Low. Similarly, given the heavily modified nature of the site, its remote location and presence of other wind farms, the susceptibility of the site to change is also considered to be low. The EIAR notes that 16 of the 21 turbines are located in an area in which wind turbines are designated to be 'Tier 2 - Open to Consideration' and the remaining 5, within 400m of the designation. The EIAR considers the development to be consistent with WEDG 2006 in terms of its location, spatial extent, spacing and layout, height and cumulative effects in its 'mountain moorland' setting (section 13.4.2.3).

Visual baseline – Key visual receptors identified in the EIAR include designated scenic routes and scenic views, settlements, recreational routes (including the Western Way), viewing points and transport routes (Figure 13-13, page 13-47). Visual receptors screened in for further assessment are summarised in Table 13-13 and corresponding viewpoints are identified for the location of photomontages (Figure 13-15).

Cumulative context – Wind farms in the vicinity of the site which have been included in the cumulative landscape and visual impact assessment are shown in Table 13-14 and Figure 13-16 i.e. these form part of the existing baseline environment. These include ABO Sheskin, Oweninny 1, 2 and 3, Bellacorick, Glenora and Bunnahowen.

Figure 13-7 provides a cumulative comparative ZTV for the existing, permitted and proposed wind farms. The assessment indicates overall relatively small additional areas to the west and north of the subject site that will now have visibility of turbines.

8.7.14. Likely Significant Effects. Likely significant effects of the development and associated mitigation measures are set out in the EIAR for the different phases of the development. In summary:

- Do nothing – It is stated in the EIAR that if the development were not to proceed, no changes would be made to current land use practice of commercial forestry, with consequential neutral landscape and visual impact.
- Construction: Landscape effects – Felling and earthworks to take place within forestry with limited and short term direct effects and no landscape effects on the wider study area. Visual effects – Short term, slight negative visual effects predicted to arise from building and erection of turbines. Ancillary project elements – Temporary, transient, localised and slight landscape effects as grid connection is installed (loss of roadside vegetation etc.). Mitigation measures include minimising excavation depths, reuse of subsoils and replacement of vegetation with like. Proposed roads, hardstand areas, anemometry mas and substation will take place in forestry with highly localised, negative, short term and slight to moderate landscape and visual effects.
- Operation: Landscape – Having regard to existing wind farms in the area of the site, topography, limited views of the proposed development and/or distance and the limited additional effect of the proposed development, the EIAR considers that the development will have no significant impact on *Landscape Policy Areas 1 to 3* Uplands, Moors, Heath or Bogs. For *vulnerable landscape features*, the EIAR predicts no significant effects on Slieve Fyagh ridgeline due to the less dramatic views of the ridgeline when viewed from the south (VP 9 and 10), location of the wind farm on the eastern

slopes of the mountain and absence of dominance of wind farm on the feature (VP1, 3 and 7). Impacts on Owenmore River will not be significant (Slight) given the direction of the wind farm away from the river, absence of impact on character or integrity of the river, the existing presence of turbines in the area and the likely limited additional effects of the proposed development (VP11 and VP13). Impact on Carrowmore Lough is considered to be Moderate given the presence of turbines in the view, at distance and screening provided by topography (VP 3). Impact of the development on the *landscape character of the site* is considered to be Moderate, highly localised and long term, based on the substantial change that will take place with the introduction of vertical structures in the landscape in a landscape of Low sensitivity. Impacts on *Landscape Character Areas* (E, F, D, B and C) are considered to range for Not Significant to Moderate (Table 13-15), with Moderate effects arising in LCU E, North Mayo Mountain Moorland. Effects are Moderate, not Significant, due to the elevation of the development within the LCU, framed and screened by surrounding topography, and the absence of significant effects on features within the LCU (ridgelines, scenic routes). *Cumulative landscape effects* are predicted to occur within LCU E only, with the character changing from one with occasional turbines to one with wind turbines. However, overall cumulative effects are not considered to be significant due to the limited visibility of the proposed turbines within the LCU due to topography. No cumulative effects on other LCUs are predicted (due to absence of change to landscape status).

Visual effects – The visual effect of the proposed development from 13 viewpoints (Figure 13-15 and Photomontage Booklet) is assessed in terms of sensitivity of visual receptors and magnitude of change (Tables 13-16 and 13-17). The EIAR considers that the landscape is capable of absorbing the development on the grounds that (a) it is located in an isolated area with limited number of residential dwellings and settlements located throughout the landscape and surrounding area, particularly to the south and south east where there is less screening by topography (b) it is sited on the eastern slopes of Slieve Fyagh, the crest of which is west of the development and provides substantial screening from the west, south west and north west, (c)

turbines are at a lower elevation (<240m AOD) than adjacent ridgelines, and (d) the development does not obscure the landscape views of the North Mayo coastline or impact on the scenic amenity attributed to the coast. In summary, Moderate residual impacts are predicted at 4 viewpoints, slight at 8 viewpoints and not significant at one viewpoint. Effects on visual receptors are considered in section 13.7.3.3.3 are:

- Designated scenic routes and views – Slight effects on scenic routes SR 1 (VP1) and SR5 (VP2), Moderate effects on SRDV 2 (VP3) and SR 3 (VP4) (Map 13-5).
- Settlements – Slight effect on town of Bangor Ellis (VP5) and Not Significant effect on Glenamoy (VP7).
- Recreational routes and tourist destinations – No Significant effects on the Wild Atlantic Way (distance, screening, and absence of visibility for much of WAW). From Slight to Significant effect, but overall Moderate effect on Western Way, with greater effects as the route is in proximity to the development site. However, effects as the route passes through the development site are offset by reduced naturalness of existing environment (forestry) and presence of existing turbines along the route. No significant effects on Moygownagh Loop Walk (distance, intervening/screening features, elevation). No Significant effect on Belmullet Cycle Route (absence of significant effect at viewpoints, screening elsewhere).
- Major transport routes – No Significant effect on N59, R314, R312 and R313 (absence of significant effect at viewpoints, screening elsewhere and/or increase in density of turbines but not of horizontal or vertical extent (R312)).
- Residential visual amenity – Development situated in a remote rural area at substantial distance from nearest sensitive residential receptor (> separation than required in WEDG 2006 and 2019), screening by local topography and views away from site, with no Significant visual effects likely to occur (VP11).
- Cumulative visual effects – The majority of the 8 existing, permitted or proposed wind farms in the area of the site lie to the east and south

east of it. The development will appear as part of one large wind farm from a number of orientations and locations, which is acceptable in the open and expansive landscape (VP12). The development will increase the density of development and from some locations its horizontal extent. Comparative ZTV (Figure 13-17) indicates increased cumulative visibility in a small number of areas to the west and north with no significant impacts identified (VP3, 7 and 8). Highly sensitive receptors to the west and north of the LVIA Study Area are unlikely to have substantial visibility of multiple wind farms and no Significant cumulative effects are anticipated, particularly along the coastline. Overall a Long Term, Moderate Cumulative Visual Effect is deemed to arise.

- Ancillary project elements and grid connection – The visual effects of the proposed substation, site access and hardstandings, meteorological mast, peat and spoil placement areas and grid connection are considered to be highly localised, long term, negative and of Slight Significance by virtue of their location in established forestry which will screen any long ranging views, flat nature of features (access roads/hard standings, peat placement areas, grid connection) and/or slender structure (met mast).

- Decommissioning – Landscape and visual effects of decommissioning are predicted to be similar to those occurring during construction, with short term effects arising during dismantling (e.g. cranes) with slight, negative visual effects. (Turbine foundations to remain and be covered in earth and re-seeded, Appendix 4-7).

Assessment

8.7.15. 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.

8.7.16. The subject site lies in an elevated upland landscape which includes existing wind farm development. The development site is largely framed by an arc of elevated

topography that extends from the south to the west and north of the development. The proposed development will add to existing wind farm development in the area, with direct and cumulative landscape. However, these effects will be generally confined to the immediate area of the site and to views of it and adjoining wind farms (existing, permitted and proposed) from the south and south east with an increase in density and intensity of development but with no significant change to landscape character, that has become established in the area of the site, or to landscape character in the wider area.

8.7.17. In terms of visual effects, I am also generally satisfied that the proposed development by virtue of the location of the development, relative 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.

8.7.18. Notwithstanding these general conclusions, I am concerned that the development would have a significant effect on the following:

- Slieve Fyagh and Carrowmore Lough. Both of these are identified as a vulnerable feature in the Landscape Appraisal for County Mayo. Slieve Fyagh is visible from a scenic route and scenic routes with designated views to the west and north west of the site, as depicted in VP1 and VP3, with VP3 taken from the shores of Carrowmore Lough. In VP1 proposed turbines 5, 7 and 8 will break the undeveloped, open and natural ridgeline of Slieve Fyagh. Similarly in VP3 turbines 7, 8 and 9 encroach onto the more elevated slopes of Slieve Fyagh. Notably, of these turbines 5, 7 and 8 also fall outside of the Tier 2 area 'Open to consideration' defined in the Renewable Energy Strategy for County Mayo.
- When viewed from the south west (N59) and Bangor Ellis, turbines 2, 17 and 18 break the skyline (VP5 and VP13) and are dominant in local views. Notably turbine 2 falls outside of the 'Open to consideration' T17 falls on the western boundary of the Tier 2 area.
- When viewed from Glenamoy (VP7) turbines also extend into an undeveloped vista.

8.7.19. To date, visibility of the wind farms in the area of the site is largely confined to the south and south east and from the west they are subservient to the defining landscape of peaks and ridgelines. The subject development threatens to establish new precedents for visibility of the wind farm (and therefore associated wind farms) from the west. If the Board are minded to grant permission for the development I would recommend that turbines with the greatest visual effects on Slieve Fyagh are omitted from the development, namely Turbine 5, 7 and 8. Whilst turbines 2, 17 and 18 will break the skyline in views from Bangor Ellis towards the site, impacts effect a very short stretch of the national road/scenic route. From VP7, whilst the turbines extend into an undeveloped mountain vista, turbines are grouped and seen at distance in a wider raised landscape which they do not dominate.

8.7.20. Submissions in respect of the development raise concerns in respect of impacts on Sheskin Lodge and Céide Fields. As stated above the proposed development will introduce turbines to the forestry plantation in which Sheskin Lodge is situated and change its landscape context. These changes will be significant however, the Lodge is not in use and is in a derelict state and the wider area is already substantially affected by the large scale wind farms which have been permitted in the wider area.

8.7.21. With regard to Céide Fields, having regard to the detailed LVIA carried out including the ZTV maps produced, and my inspection of the site, the distance of the subject development from Céide Fields and the significant topography that separates it from Céide Fields, I am satisfied that the development will not be visible from Céide Fields or detract from its landscape setting.

8.7.22. In summary, subject to the implementation of mitigation measures and with conditions which remove turbines 5, 7 and 8, I am satisfied that the proposed development would not give rise to significant direct, indirect or cumulative effects on the landscape of the site and surrounding area.

Material Assets.

8.7.23. Chapter 14 of the EIAR provides an assessment of the likely effect of the development on traffic and transport and other material assets (utilities, aviation and waste management). Traffic and transport effects include for the effects of abnormal sized loads, not abnormal weight loads as these will not form part of the development. The methodology adopted for assessment has regard to relevant

national and industry specific guidelines. The assessment also includes traffic impacts associated with the construction of the grid connection.

8.7.24. Traffic and transport

8.7.25. The EIAR describes the location of the site and the proposed turbine delivery route (TDR) for abnormal loads from the port of entry at Galway City (Figure 1-1b and Figures 14-1 and 2). The assessment assumes that concrete, general construction materials will be delivered from either the east or the west (Figure 14-1). All other wind turbine components will use the TDR for abnormal loads.

8.7.26. During construction the site will be accessed via the L52926 with location L21 used as the primary site entrance for HGVs and other abnormal loads (Figure 14-2d). Between the N59 and site entrance the L52926 will be upgraded to accommodate turbine components[5], general construction traffic and to improve safety for traffic accessing the road. Other site entrances will be used for staff cars, LGVs and HGVs (section 14.1.2.4, page 14-6, EIAR, Figure 4- 1a and layout drawings in Appendix 4-1).

8.7.27. Once operational the entrance to the site, L21, will be maintained for delivery of replacement turbine components, operational and maintenance staff and by the public using the site for recreational purposes.

8.7.28. Baseline. Existing background traffic flows are set out in section 14.1.3.1. Data is presented in terms of vehicles and PCUs (passenger car units). Count locations are shown in Figure 14-3 and average all day traffic flows (AADT) in Tables 14-1 and 14-2 by location (links 1 to 9). Future background traffic volumes are shown in Table 14-5 also by location (current flows and estimated year of opening flows). Estimated percentage of HGVs by flows is shown in Table 14-6.

8.7.29. Likely Significant Effects.

8.7.30. *Trip generation projections* for the development are based on data from other wind farm developments e.g. trips per quantum material, the number of turbines proposed and duration of construction works. Construction is estimated to last c.18-24 months and a conservative period of 18 months is used in the assessment. Trip generation during construction is provided for three phases of the development site preparation

[5] NB At the time of site inspection this road has been widened and upgraded.

and groundworks (Table 14-7), concrete pouring for each turbine (with 21 pouring days in total, one for each turbine, Table 14-8) and turbine component delivery and construction (Table 14-10). Once operational, the wind farm site will be unmanned and remotely monitored. Maintenance trips by wind farm operator and EirGrid will be two to three maintenance trips/week. Visitors are estimated at up to 20 cars per day.

8.7.31. Likely significant effects of the development for the different phases of the development are set out in section 14.1.10 of the EIAR. In summary, predicted impacts arising during each phase are:

- Do nothing – The EIAR predicts that with no development there would be no additional traffic on local/national roads or therefore any direct or indirect effect on roads and traffic.
- Construction – 21 days when *concrete foundations* are poured will result in an increase in traffic levels between +17% on the N59 between the site and Ballina, to +10.6% on the N59 to the east and west of the L52926 on the way to the site (Table 14-18). On the L52926 traffic flows will increase significantly by a factor of 4.3 (+332%). Impacts will be temporary, slight, negative impact on traffic using the surrounding road network.

  During the remaining 345 days for *site preparation and groundworks* when deliveries to the site will take place, the effect on the surrounding road network would be an increase of between +4.4% on the N59 between the site and Ballina and +2.7% on the N59 to the east of the L52926 (Table 14-17). On the L52926 approaching the site, traffic flows will almost double (+86%). Impacts will be temporary, slight, negative impact on traffic using the surrounding road network.

  During the 38 days when the various *component parts* of the wind turbines are delivered to the site using extended articulated HGVs, the effect on traffic will be moderate, given the size of vehicles, and result in a traffic volume of between 0% increase and +5.4% on the N59 between Crossmolina and Bangor-Ellis (Table 14-19). On the L52926 approaching the site, traffic flows will slightly more than double (+105.6%). The assessment assumes that large turbine components will be delivered during daytime hours and reflects the most conservative scenario.

In practice delivery will be during night time hours and impacts will be negative, temporary (over 38 nights) and will be slight.

When *small turbine components* are delivered to the site (over 21 days), traffic levels on the local road network will increase ranging from 0% to +2.1% on the N59 between Crossmolina and Bangor-Ellis (Table 14-20). On the L52926 approaching the site, traffic flows will increase by +41.5%. The effect during this period will be temporary and imperceptible to slight.

With regard to the effect of additional traffic on *road links (capacity),* of all of the links assessed on the delivery route (Tables 14-22 to 14-23) it was determined that the N58 between Ballylahan and Foxford is forecast to operate over link capacity (138%) by the year 2028 for the do nothing scenario. During construction of the proposed development, the most substantial impact will occur during the 21 days when cement is delivered for the construction of turbine foundations when traffic will increase on this link to 147%. This will reduce to 140% for the majority of the construction phase. Impacts of construction, by virtue of the relative increase in traffic, is considered to be negative, slight and temporary.

The *junction between the N59 and L52926* will operate within capacity for all of the construction period (at no other junctions is the threshold for assessment reached).

Approximately 90m of *cabling* from the wind farm site to Bellacorick sub-station will be constructed per day, and entail c.77 construction days with 15 no. two way HGV trips and 3 no. additional 2-way car/LGV trips to travel on the local road network. During construction of the grid connection there will be closures along a 1km stretch of the L52926 for up to 11 days. The short localised diversion will have a negative, slight, temporary effect.

- Operation - No significant impact predicted, operational flows are very small.
- Decommissioning – Traffic generation during decommissioning is predicted to be significantly less than during construction. Turbine components will be separated and removed from site but much of the materials brought to the site during construction will be left in situ (foundations and hardstandings, access roads, visitor car park and walkways).

- Cumulative effects – The EIAR states that there is potential for moderate but short term cumulative effects if the proposed development is constructed at the same time as the other permitted/proposed wind farms in the area of the site and the hydrogen plant at Bellacorick. Forestry on site will be curtailed during construction.

8.7.32. Mitigation. Mitigation measures (section 14.1.10.6) are proposed for each phase of the development. For construction these include:

- Managed delivery of abnormal sized loads by special transport.
- Implementation of Traffic Management Plan (Appendix 14-2) which includes a Traffic Management Co-ordinator, programme of deliveries to be submitted to County Council, liaison with relevant local authorities and TII, information to locals, pre and post construction survey where required by local authorities, implementation of temporary alterations to road network at critical locations, identification of delivery routes in agreement with County Council, night time delivery of large wind turbine components.
- The scheduling of the construction phase to take account of other wind farms and developments under construction in the area.

8.7.33. Residual impacts. With the application of mitigation measures the EIAR predicts a negative, temporary, imperceptible to slight impact on existing road users during the construction phase of the development, with the exception of the delivery of abnormal loads. These too will reduce from moderate to slight if undertaken at night. No significant effects are predicted at operation (imperceptible) and slight to imperceptible at decommissioning.

Assessment

8.7.34. TII raise concerns regarding the inclusion of abnormally heavy loads in the assessment (in respect of the sub-station) and the capacity of the road network to accommodate these loads. They also require consultation with the relevant road management company to obtain necessary consents, ensure that the strategic function of the national road network is maintained and that any damage to roads is repaired. The body also raise concerns regarding the location of the grid connection route along theN59 and implications for the future maintenance of the road, traffic flows during installation, any future upgrades and therefore compliance with policy

(protection of national road network). TII refer to alternative routes that may be available across private land. The PA raise similar issues and submit that a dedicated access from the N59 should be explored for all projects at the location, to cater for construction and operational phases. They also recommend that the use of the R312 is precluded (Castlebar to Bellacorick road) due to its poor condition.

8.7.35. Having regard to the following:

- The location of the development in a rural area, where there are relatively low levels of traffic,
- The detailed and conservative approach taken in the assessment of the likely effects of the development on road traffic and the predicted effects on road links and road junctions,
- My inspection of the site and the upgrade and widening that has taken place of the L52926,
- The proposed haul route which excludes the R312.
- The detailed measures to mitigate effects which include:
    - Appointment of Traffic Management Co-ordinator,
    - Provision of a Traffic Management Plan,
    - Liaison with local authorities in advance of delivery of turbine components,
    - Pre and post construction condition surveys,
    - Scheduling of construction to take account of other wind farm developments under construction.

8.7.36. I am satisfied that whilst the proposed development, whilst likely to give rise to a significant increase in traffic on the L52926, effects on the wider road network will be short term and not likely to result in significant adverse effects on the road network (capacity or condition).

8.7.37. With regard to the concerns raised by TII and the PA, I comment as follows:

- Impact on national road – As stated above, the applicant has demonstrated that capacity of the national road will not be significantly, adversely affected by the development. The proposed development will utilise an existing access onto the N59 which serves other permitted wind farm development (Sheskin wind farm) and the local road (L52926) serving the subject site and

permitted wind farm has already been upgraded. Whilst other wind farms are accessed of the N59, the point of access is some distance from the subject site and, as stated by the applicant significant additional roads would be required due to the distance between the sites and the subject site and alternative access road is separated by Oweninny River and Srahnakilly Local Road.

- Junction capacity - During construction (and to a lesser extent decommissioning) use of the existing access L52926 and junction with the N59 will increase significantly. However, such effects are short term with the development generating a very modest level of operational traffic.
- Abnormal loads – In response to the submission made the applicant has clarified that there will be no abnormally heavy loads associated with the construction of the development or associated on site substation (or therefore need for assessment of structures along the haul route). The applicant has also undertaken liaise with all relevant road authorities, carry out pre and post construction survey of haul routes as required and remedial works if necessary and has indicated that temporary accommodation works to be subject to a Road Safety Audit, where appropriate, to comply with TII requirements. All relevant permits will also be obtained in advance of construction.
- Grid connection in N59 – As indicated by the applicant, should the wind farm be permitted the proposed substation and grid connection route will be subject to a separate planning application which can address the detailed design issues raised by TII, and if necessary an alternative location subject to detailed assessment of likely cumulative effects with the wind farm, if permitted.

8.7.38. In summary, I am satisfied that the subject development would not give rise to significant direct, indirect or cumulative effects on roads or traffic in the area of the site or as a consequence of the turbine delivery route or grid connection.

Other material assets

8.7.39. Section 14.2 of the EIAR examines the likely effect of the development on built services (utilities, telecommunications and aviation) and waste.

8.7.40. Baseline. The Corrib gas pipeline runs west to east through the southern part of the subject site, turns south along the L52926 road, and then east into third party land (Figure 3-1b). There are no groundwater abstraction wells within the EIAR site boundary. The nearest public water supply is Crossmolina Eskeragh Ground Water Supply located 15km to the south east of the site[6]. The nearest groundwater private well is located at Bellacorick Power Station c.5km to the east. Two 38kV overhead lines are located 1.4km to the south of the development site. Both lines run east to west from Bellacorick 110kV substation to the Bangor Erris 38kV substation located 5km and 6km south east and southwest of the development site respectively. The lines traverse the L52926. The local rural supply provides electricity from the overhead lines to the receptors along the N59. The applicant consulted with telecommunication provides and aviation bodies (Table 14-26 and Appendix 2-1). Potential for interference to digital terrestrial services were identified by RTE Transmission Network (operating as 2rn) and the Department of Defence an IAA recommended appropriate illumination of structures, as constructed co-ordinates and prior notification of crane operations. The closest authorised municipal waste facility is located c.27km to the east of the site.

8.7.41. Likely Significant Effects. Likely significant effects of the development for the different phases of the development, along with mitigation measures, are set out in section 14.2.6 of the EIAR. In summary, these are:

- Do nothing – No change to existing built services, telecommunications and aviation operations in the area.
- Construction – Potential for damage to the gas pipeline during construction works. Mitigation measures include compliance with Gas Networks Ireland requirements including setback distances (Table 14-27). With the implementation of mitigation measures a short term slight negative impact on gas supply is predicted. Prior to construction works confirmatory surveys to be carried out along proposed grid connection route with subsequent consultation with service provider if services found and works to take place in accordance with requirements of service provider (e.g. turning off service and

[6] This is incorrect and as stated previously the nearest groundwater supply is Carrowmore Lough c.7km to the west of Sheskin Forest.

diversion of service if required). With the implementation of mitigation measures a short term slight imperceptible impact on water supply is predicted. Potential impacts on the two 38kV OHLs that traverse the L52926 will be mitigated by standard measures to prevent damage to the lines (section 14.2.6.2.3). The OHLs will be temporarily taken down during turbine delivery. With mitigation impacts are predicted to be temporary, slight, negative on local electricity supply. There are no predicted potential direct or indirect effects on telecommunications or aviation during construction from electromagnetic interference.

- Operation – Any maintenance works during operation in the area of the gas pipeline will require prior approval of GNI and will be carried out in accordance with appropriate health and safety measures. With this, it is considered that no significant direct or indirect effects on gas supply or health and safety from the operational phase of the development will arise. No interactions with water supply with significant effects are predicted during operation. Replacement of turbine components may impact on electricity infrastructure. However, with the application of mitigation measures (as per construction), no significant impacts are identified. The operation of the wind farm will provide a significant amount of renewable energy to the grid with a long term moderate positive impact on electricity supply. In the event of interference to telecommunications from electromagnetic interference, effects can be dealt with by use of divertor relay links out of line with the proposed development, with no significant effect on telecommunications. With the application of mitigation measures (lighting, provision of as built coordinates and prior notice of crane activity) no significant residual impacts on aviation are predicted (site is significantly removed from any airports).
- Decommissioning – No works are proposed near the pipeline route (upgraded roads to remain in place), all measures proposed during construction will be applied during decommissioning. With these no significant residual effects on gas, water supply or electricity will arise.
- Cumulative effects – The EIAR predicts significant positive cumulative effects on electricity supply with the commissioning of granted and proposed wind

farms. As the Corrib gas pipeline runs through the site boundary of Oweninny Phase 2 and 3 there is potential for cumulative effects on the pipeline. All works will be to GNI guidelines and therefore no significant effects on the infrastructure are predicted. There are no public water supplies or wells in the site boundaries of any of the proposed wind farm developments (section 2.8, EIAR), no significant cumulative impacts on water supply are predicted. Potential effects on telecommunications and aviation is the responsibility of each developer to ensure that developments will not interfere with TV or radio signals/aviation. As each project is designed and built to avoid impacts arising, no significant cumulative impacts are predicted.

Assessment

8.7.42. Irish Water raise concerns regarding the potential for effects of the Carrowmore Lough Water Supply, located c.7km to the west of Sheskin Forest, with the movement of large volumes of peat. IAA recommends conditions to be attached to any grant of permission in respect of obstacle lighting.

8.7.43. This issue has been addressed in the Water section of this report, the Water Supply is situated at distance from the development within a different sub-catchment. Further, for the reasons stated and subject to the full implementation of measures to mitigate effects on hydrology and surface water quality, I am satisfied that there is no likelihood of significant peat movement or adverse effects on water quality. IW also recommend that any proposals to build over/divert existing water or wastewater services to be in accordance with Irish Water requirements (protection of surface and groundwater, connection to IW infrastructure and compliance with IW standards). These matters can be addressed by condition.

8.7.44. I note that the applicant has indicated that IAA conditions in respect of obstacle lighting can be adhered to. I draw the Board's attention to Appendix 2 of the applicant's response to submissions. It sets out alternative means to meet IAA requirements. These matters have been considered in this report and I have concluded that it is reasonable that the applicant seek to agree arrangements for lighting with IAA which minimises visual effects. This matter can be addressed by condition.

8.7.45. With regard to impacts on other material assets, again having regard to the location of the development relative to these and subject to the adherence to proposed mitigation measures (which include liaison with the appropriate service providers), I am satisfied that no significant effects on other material assets will arise, directly, indirectly or in combination with other permitted or proposed development in the area of the site.

8.8. Risks Associated with Major Accidents and/or Disasters

8.8.1. Chapter 15 of the EIAR deals with the vulnerability of the project to major accidents and natural disasters and the potential of the project to cause major accidents or disasters, that pose a risk to the environment. The chapter has been compiled in accordance with national and European guidelines (including relevant guidelines for risk assessment). Classification of likelihood and consequence are set out in Tables 15-1 and 15-2 respectively and overall risk in Table 15-3. Potential hazards are identified and analysed in Table 15-4 based on the *HSEs Emergency Management Area 2 Management Team Major Emergency Plan*, May 2022, in relation to meteorological (extreme weather events, flooding, peat instability), transportation (collision), technology (gas pipeline on site, contamination) and civil hazards (loss of critical infrastructure gas, electricity, telecoms).

8.8.2. Likely Significant Effects. Likely significant effects arising from the possible risks of the proposed development are set out in the EIAR for the different phases of the development (section 15.4). In summary, these are:

- Do nothing – Opportunity lost to supply a significant amount of renewable energy.
- Construction – Risk assessment for each risk hazard identified for the construction phase is set out in Table 15-5, in respect of potential vulnerability to disasters and potential to cause accidents/disasters. These are assessed in Table 15-8 and the overall risk is summarised in Table 15-9. Risks with the highest risk score are peat stability, contamination and industrial accident e.g. gas explosion. However all risk scores are low risk scenarios.
- Operation – As per construction, risk assessment for each risk hazard identified during operation is set out in Table 15-6 and assessed in Table 15-

8. Risks with the highest risk score are contamination and industrial accident. However all risk scores are low risk scenarios.

- Decommissioning – Similar risks are identified for the decommissioning phase as construction. Risks with the highest risk score are contamination and industrial accident. However all risk scores are low risk scenarios.

8.8.3. Mitigation measures are referred to in section 15.4.2 and these are described as embedded, with the development designed and built in accordance with best practice measures set out in the EIAR which includes an CEMP and an Emergency Response Plan. No significant residual effects associated with the construction, operation and decommissioning of the development are therefore identified.

8.8.4. No cumulative impacts are predicted for the development in conjunction with projects identified for cumulative impact assessment, with mitigation measures in place.

8.8.5. <u>Assessment</u>

8.8.6. Having regard to the detailed and reasonable assessment carried out in the EIAR in respect of the vulnerability of the project to disaster and the potential to cause accidents and/ or disasters, identification and assessment of key risks in respect of peat stability during construction, contamination during construction, operation and decommissioning and industrial accident during construction, operation and decommissioning and the proposed mitigation measures in respect of these effects, I am satisfied that the proposed development is not likely to 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.

8.9. Interactions

8.9.1. Chapter 16 of the EIAR deals with interactions. Interactions are identified in tabular form in Table 16-1 and key interactions for each environmental receptor is summarised in section 16.2. I am satisfied that all key interactions have been identified and that these have been adequately assessed in the EIAR and addressed in this report.

8.10. Reasoned Conclusion

8.10.1. Having regard to the examination of environmental information set out above, to the EIAR and other information provided by the developer, and to the submissions from the planning authority, prescribed bodies and third in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

- Population and human health – Short term negative effects by way of noise, dust and traffic and short term positive impacts on the local economy during construction. Long term negative direct and cumulative effects on landscape character and visual impacts in the immediate area of the site and potential for adverse effects of noise, shadow flicker and night time illumination at a small number of properties. These impacts will be mitigated by a managed approach to construction as set out in CEMP, the modest area affected by landscape change, the active control of turbines during operation and implementation of the Recreational Management Plan.
- Biodiversity – Potential negative impacts on water quality during all phases of the development with the risk of significant effects on fisheries habitats, disturbance during all phases of the project and collision risk of mobile species during operation. These impacts will be mitigated by avoidance of water features and key habitats in the layout of the development, detailed management and monitoring of all phases of the development in accordance with project documentation, which includes Surface Water Management Plan, CEMP, Bird Impact Assessment Report, Bat Report and Biodiversity Management and Enhancement Plan (which includes treatment of invasive species).
- Land, soil, water, air and climate – Risk of water pollution, changes in hydrology during construction and operation with consequential risks to peat stability, short term localised effects on air quality and noise, long term positive effects on air quality and climate, with significant production of energy from a renewable source. Negative effects will be mitigated by management of surface water prior to, during and post construction work and on-going monitoring of water quality upstream and downstream of the development

site, monitoring of the effects of site drainage on peat stability and management of construction practices in line with the proposed CEMP and Surface Water Management Plan.

- Archaeology, cultural heritage, landscape and material assets – Potential direct impacts on unknown features of archaeology, indirect, cumulative effects on Western Way, the setting of Sheskin Lodge and Catholic Church of Our Lady at Tawnaghmore, cumulative landscape and visual effects in the area of the site and increased visibility of turbines over Slieve Fyagh and increased road traffic in the vicinity of the site and the potential for adverse effects on the integrity of the national roads (during construction). These impacts will be mitigated by archaeological monitoring of groundworks, the distance of the development from Sheskin Lodge and Our Lady's Church, intervening forestry and/or existing wind turbines, the topographical context for the site, omission of T5, T7 and T8, management of traffic in line with the proposed Traffic Management Plan, survey of affected roads prior to and post construction with remediation work as necessary.

8.10.2. I am, therefore, satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative effects on the environment.

9.0 Appropriate Assessment

9.1. Introduction

9.1.1. The requirements of Article 6(3) as related to appropriate assessment of a project under part XAB, sections 177U and 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section. The areas addressed in this section are as follows:

- Compliance with Article 6(3) of the EU Habitats Directive.
- Screening the need for appropriate assessment.
- The Natura Impact Statement and associated documents.
- Appropriate assessment of implications of the proposed development on the integrity each European site.

9.2. Compliance with Article 6(3) of the EU Habitats Directive

9.2.1. The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site before consent can be given. The proposed development is not directly connected to or necessary to the management of any European site and therefore is subject to the provisions of Article 6(3)

9.2.2. The proposed development is not directly connected with or necessary to the management of a European site but it is situated in close proximity to a network of sites in North Mayo with the potential for significant effects (Figure 3-1, NIS, Appendix 1).

9.3. Screening the need for Appropriate Assessment

Compliance with Article 6(3) of the Habitats Directive

9.3.1. The requirements of Article 6(3) of the Habitats Directive as related to screening the need for appropriate assessment of a project under part XAB, section 177U of the Planning and Development Act 2000 (as amended) are considered fully in this section.

Background to the Application

9.3.2. The applicant has submitted an Appropriate Assessment Screening Report in Appendix 1 of the NIS. It has been prepared having regard to national, Scottish and European guidelines, in particular having regard to the distances mobile species may travel beyond the boundary of Special Protection Areas[7]. The report considers:

- The location, nature and design of the proposed development,
- European sites in the area of the development,
- The qualifying interest/special conservation interest of these sites and the conservation objectives,
- Relevant scientific knowledge that is available in the form of desk study and field surveys carried out in 2020 and 2022, and
- Associated reports on the ecology, hydrology and peat stability of the site.

9.3.3. It identifies European sites likely to be in the zone of influence of the development using the source pathway target approach and, on a precautionary basis, identifies the potential for significant effects on the following European sites:

- Glenamoy Bog Complex SAC [000500].
- Slieve Fyagh Bog SAC [000542].
- Carrowmore Lake Complex SAC (site code 000476).
- Bellacorick Bog Complex SAC [001922].
- Owenduff/Nephin Complex SAC [000534].
- Owenduff/Nephin Complex SPA [001922].

9.3.4. Having reviewed the Screening Report, related documents and submissions, I am satisfied that the information presented in Screening Report allows for a complete

[7] Scottish Natural Heritage 'Assessing Connectivity with Special Protection Areas' 2016

examination and identification of any potential significant effects of the development, alone, or in combination with other plans and projects on European sites.

Screening for Appropriate Assessment – Test of Likely Significant Effects

9.3.5. The project is not directly connected with or necessary to the management of a European Site and therefore it needs to be determined if the development is likely to have significant effects on a European site(s). The proposed development is examined in relation to any possible interaction with European sites designated Special Conservation Areas (SAC) and Special Protection Areas (SPA) to assess whether it may give rise to significant effects on any European Site.

Brief Description of the Proposed Development

9.3.6. The applicant provides a description of the proposed development in section 3.0 of the NIS and in section 1.4 of the EIAR. It is also described in section 2.0 of this report. In summary it comprises the construction of 21 no. wind turbines and associated infrastructure including meteorological mast, associated underground electrical and communication cabling, upgrading or provision of existing tracks and roads and entrances, peat placement areas, borrow pits, arrangements for site drainage and construction compounds. Ancillary forestry felling will be required to enable the development. Permanent recreation and amenity works will be carried out to provide marked trails, seating areas, car parking and signage and habitat enhancement and biodiversity management works will be carried out within the site.

9.3.7. The development will be constructed in accordance with a Construction and Environmental Management Plan and Surface Water Management Plan. These documents contain standard construction practices and site specific measures.

9.3.8. The development site is described in Chapter 4 of the NIS and in Chapter 6 and 7 of the EIAR (Biodiversity and Ornithology) and related chapters in respect of land, soil, geology, hydrology, hydrogeology, air and climate).

9.3.9. The development site is dominated by plantation forestry (including areas of clear fell), comprising Lodgepole Pin and some Sitka spruce planted on Lowland Blanket Bog, particularly to the north west of the site (proposed for habitat restoration) where it is connected to the extensive peatlands of Slieve Fyagh Bog SAC. Some remnants of the habitat are found within the site in a degraded form. Waterbodies

within the development site include drainage ditches and small streams (upland eroding rivers) and these provide hydrological connectivity to downstream European sites (Figure 3-1, NIS). Other habitats within the site are dystrophic lakes, these lie to the south west of the site, bog pools, wet grassland, spoil and bare ground (Figure 6-6, EIAR). Habitats along the grid connection and site access roads comprise existing forestry tracks and the public road, with mixed margins that include felled woodland, scrub, lowland blanket bog, cutover bog and agricultural grassland. The grid connection will cross several watercourses draining from the site, with 9 culverts and 3 bridge crossings proposed for the underground cable.

9.3.10. In addition to the foregoing, there are other wind farm developments in place, permitted or proposed in the area of the site, a hydrogen plant an Bellacorrick and various policy documents that relate to the area of the site. These are summarised in sections 3 and 4 of this report.

9.3.11. Taking account of the characteristics of the proposed development in terms of its location and the scale of works, the following issues are considered for examination in terms of implications for likely significant effects on European sites:

- Habitat loss/fragmentation with effects on mobile species of conservation interest (in situ, ex situ), for all phases.
- Habitat degradation and disturbance of species as a consequence of proximity to construction sites/grid connection route e.g. dust, noise and human activity (construction).
- Uncontrolled discharge of polluted surface water from the site, for example, that is silted (including from peat slides) or contains, hydrocarbons or cement (construction, operation and decommissioning) with adverse effects on habitats and/or species of conservation interest in European sites (in situ and ex situ).
- Changes to hydrology within the site with adverse effects on peatland habitat in adjoining European sites (habitat degradation).

Submissions and Observations

9.3.12. Submissions in respect of the proposed development make the following comments in respect of AA and European sites.

- PA - State that the Board should satisfy itself that the NIS on the proposed windfarm and screening for AA adequately address the likely impact on Natura 2000 sites.
- IFI - Development has potential to impact on important fisheries habitat. Development spans numerous tributaries of the Owenmore River and the development adjoins/site lies partially within the catchment of the Glencullin River and Barroosky catchment (tributary of Glenamoy River and part of Glenamoy Bog Complex SAC). There should be no impact in the catchment that may have a negative impact on the Owenmore River system, aquatic habitats or water quality of the Owenmore River system or discharges into the Glencullin River or Barroosky catchment.
- DOD - Proximity of the development to a dense presence of European sites and the potential for effects of these.

European sites

9.3.13. The subject site directly adjoins the following European sites:

- Glenamoy Bog Complex SAC (site code 000500), to the north of the site.
- Slieve Fyagh Bog SAC (site code 000542) to the north west of the site.
- Carrowmore Lake Complex SAC (site code 000476) to the south of the site and west of the proposed access road and grid connection route.

9.3.14. Surface water bodies from the site drain to waterbodies within the following European sites and grid connection works would be carried out in the vicinity of the same sites:

- Bellacorrick Bog Complex SAC (site code 001922), to the east of the wind farm site and south of the proposed grid connection route.
- Owenduff/Nephin Complex SAC (site code 000534), to the south of the proposed grid connection route.
- Owenduff/Nephin Complex SPA (site code 004098), to the south of the proposed grid connection route.

9.3.15. In addition, the site lies in a wider area where there area which may be connected to the site by virtue of hydrology or mobile species. A summary of the European sites within a possible zone of influence of the proposed development is presented below

(see also Figure 3-1, NIS). Where a possible connection between the development and a European site has been identified, these sites are examined in more detail.

Table 1. Summary Table of European Sites within a possible zone of influence of the proposed development.

European Site (code)	List of QI/SCI	Distance from development (km)	Connections (SPR)	Considered further in screening (Y/N)
Glenamoy Bog Complex SAC	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Machairs (* in Ireland) [21A0] Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with Erica tetralix [4010] Juniperus communis formations on heaths or calcareous grasslands [5130] Blanket bogs (* if active bog) [7130] Transition mires and quaking bogs [7140] Depressions on peat substrates of the Rhynchosporion [7150] Salmo salar (Salmon) [1106] Petalophyllum ralfsii (Petalwort) [1395] Saxifraga hirculus (Marsh Saxifrage) [1528]	Adjoining. No direct effects. Development footprint is outside boundary of SAC. Red line boundary borders a watercourse in the SAC. However construction site is >300m from surface water body and there is no surface water connection to it. Given proximity, there is potential for indirect effects i.e. habitat degradation from drainage or hydrological changes (all phases). No effects likely from dust (development site is at least 180m from SAC, outside of distance for dust soiling and vegetation effects – Table 10-8, EIAR). No effects likely from disturbance (no mobile species, except salmon, effects addressed under above absence of surface water connection).	Yes.	Yes.

	Hamatocaulis vernicosus (Slender Green Feather-moss) [6216]			
Slieve Fyagh Bog SAC (000542).	Blanket bogs (* if active bog) [7130]	Adjoining. No direct effects. Development footprint is outside boundary of SAC. No surface water connection to SAC. Construction site is 215m from SAC. Given proximity, there is potential for indirect effects i.e. habitat degradation from drainage or hydrological changes (all phases). No effects likely from dust (development site is at least >200m from SAC, outside of distance for dust soiling and vegetation effects – Table 10-8, EIAR).	Yes	Yes
Carrowmore Lake Complex SAC (000476)	Blanket bogs (* if active bog) [7130] Depressions on peat substrates of the Rhynchosporion [7150] Saxifraga hirculus (Marsh Saxifrage) [1528] Hamatocaulis vernicosus (Slender Green Feather-moss) [6216]	Adjoining. No direct effects. Development footprint is outside boundary of SAC. Red line boundary includes a watercourse that flows into the SAC. Closest works to stream are 200m from it and there is no direct hydrological link to it. Given proximity, there is potential for indirect effects i.e. habitat degradation from drainage or hydrological		

		changes (all phases). Potential for habitat degradation from dust given proximity of proposed grid connection route and proximity of turbine T2 to SAC (c.25m).		
Bellacorrick Bog Complex SAC (site code 001922)	Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with Erica tetralix [4010] Blanket bogs (* if active bog) [7130] Depressions on peat substrates of the Rhynchosporion [7150] Alkaline fens [7230] Vertigo geyeri (Geyer's Whorl Snail) [1013] Saxifraga hirculus (Marsh Saxifrage) [1528]	SAC boundary is c.2km to the east of the wind farm site and immediately south of the N59 and includes the Owenmore River at Bellacorrick. Watercourses within the development site discharge into streams that flow through the SAC. The grid connection route (located within the N59) will cross tributaries of Owenmore River. Potential for water pollution of waterbodies within the SAC (but not identified as a QI) and for dust from construction of grid connection to impact on the QI habitats and supporting habitats of SAC (all phases).	Yes.	Yes.
Owenduff/Nephin Complex SAC (site code 000534)	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Natural dystrophic lakes and ponds [3160] Water courses of plain to montane	No direct effects. Development footprint and grid connection are outside of the SAC. Watercourses in the wind farm site discharge to the Owenmore River which flows in part within the SAC.	Yes	Yes.

	levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Northern Atlantic wet heaths with Erica tetralix [4010] Alpine and Boreal heaths [4060] Juniperus communis formations on heaths or calcareous grasslands [5130] Blanket bogs (* if active bog) [7130] Transition mires and quaking bogs [7140] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355] Saxifraga hirculus (Marsh Saxifrage) [1528] Hamatocaulis vernicosus (Slender Green Feather-moss) [6216]	The grid connection route also crosses tributaries of the Owenmore River. There is potential for adverse effects from the development on water quality (discharge of surface waters – all phases). Given proximity of grid connection route to SAC, potential for water pollution and for dust, with potential for effects on QI habitats and supporting species. Suitable habitat for SCIs within other smaller watercourses within and around the development site. Therefore potential for in situ and ex situ disturbance and displacement of QIs (construction, and decommissioning).		
Bellacorrick Iron Flush (site code 000466)	Saxifraga hirculus (Marsh Saxifrage) [1528]	c.5.5km to the east of the wind farm site. No direct effects. No pathway that connects development site to European site.	No.	No.
Lough Dahybaun SAC (site code 002177)	Najas flexilis (Slender Naiad) [1833]	c.3km upstream of grid connection works. No direct effects. No pathway that connects	No.	No.

		development site to European site.		
Mullet/Blacksod Bay Complex SAC (site code 000470)	Mudflats and sandflats not covered by seawater at low tide [1140] Large shallow inlets and bays [1160] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Atlantic decalcified fixed dunes (Calluno-Ulicetea) [2150] Machairs (* in Ireland) [21A0] Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] Alkaline fens [7230] Lutra lutra (Otter) [1355] Petalophyllum ralfsii (Petalwort) [1395]	No direct effects. c.18km to the west of the application site. No pathway that connects the development site to the European site.	No.	No.
Broadhaven Bay SAC (site code 000472)	Mudflats and sandflats not covered by	No direct effects.	No.	No.

	seawater at low tide [1140] Large shallow inlets and bays [1160] Reefs [1170] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Submerged or partially submerged sea caves [8330]	c.14km to the north west of the development site. No pathway that connects the development site to the European site.		
River Moy SAC (site code 002298)	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] Alkaline fens [7230] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	No direct effects. c.5.5km to the south east of the development site. No pathway that connects the development site to the European site.	No.	No.

	Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355]			
Owenduff/Nephin Complex SPA	Merlin (Falco columbarius) [A098] Golden Plover (Pluvialis apricaria) [A140]	No direct effects on supporting habitat in SPA. Development site in range of both species. Potential for displacement effects during all phases (in situ and ex situ). Potential also for collision risk (operation). With the proximity of the grid connection route to the SPA, there is potential for water pollution and dust to result in deterioration of supporting habitats of SCI.	Yes	Yes
Carrowmore Lake SPA (site code 004052)	Sandwich Tern (Sterna sandvicensis) [A191]	No direct effects, development site removed from SPA (c.7km to west of development site). Red line boundary includes a watercourse that flows into the SPA. Closest works to stream are 200m from it and there is no direct	No.	No.

		hydrological link to it. No suitable habitat on subject site for Sandwich Tern		
Blacksod/Broadhaven SPA (site code 004037)	Red-throated Diver (Gavia stellata) [A001] Great Northern Diver (Gavia immer) [A003] Slavonian Grebe (Podiceps auritus) [A007] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Common Scoter (Melanitta nigra) [A065] Red-breasted Merganser (Mergus serrator) [A069] Ringed Plover (Charadrius hiaticula) [A137] Sanderling (Calidris alba) [A144] Dunlin (Calidris alpina) [A149] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Sandwich Tern (Sterna sandvicensis) [A191] Dunlin (Calidris alpina schinzii) [A466] Wetland and Waterbirds [A999]	No direct effects, development site removed from SPA (c.12km to south west of development site). Hydrological connectivity via Owenmore River and Tullaghan Bay, however, over 30km of intervening river channel. No suitable habitat on site for SCIs except for Curlew. However, the site is outside of the maximum range of this species, maximum range 2km (SNH, 2016).	No.	No.

Illanmaster SPA (site code 004074)	Storm Petrel (Hydrobates pelagicus) [A014]	No direct effects, development site significantly removed from SPA (c.17km to north of development site). No hydrological connectivity. No suitable habitat on site for SCIs	No.	No.

9.3.16. Having regard to the foregoing, I am satisfied that there are elements of the proposed development, which alone and in combination with other development and plans in the area of the site (see above), may give rise to significant effects on European sites.

9.4. Screening Determination

9.4.1. The proposed development was considered in light of the requirements of Section 177U of the Planning and Development Act 2000 as amended. Having carried out Screening for Appropriate Assessment of the project, it has been concluded that the project individually (or in combination with other plans or projects) could have a significant effect on the following European Sites, in view of the site's Conservation Objectives, and Appropriate Assessment is therefore required.

- Carrowmore Lake Complex SAC (site code 000476).
- Slieve Fyagh Bog SAC [000542].
- Glenamoy Bog Complex SAC [000500].
- Bellacorick Bog Complex SAC [001922].
- Owenduff/Nephin Complex SAC [000534].
- Owenduff/Nephin Complex SPA [001922].

9.4.2. Other European sites in the wider area of the development site can be excluded on the grounds that the development would not be likely to give rise to significant effects on these due to distance, lack of connectivity, absence of suitable habitat on the application site for mobile SCI or the location of the site outside of the maximum range of for mobile SCI.

9.4.3. No measures designed or intended to avoid or reduce any harmful effects of the project on a European Site have been relied upon in this screening exercise.

9.5. The Natura Impact Statement

9.5.1. The applicant's 'Natura Impact Statement (NIS) Sheskin South Wind Farm' examines and assesses potential adverse effects of the proposed development on the European Sites identified in the Screening Report.

9.5.2. The NIS provides a summary of the conclusions of the screening report, a description of the proposed development and the characteristics of the receiving environment. The receiving environment is described by reference to desk study, scoping with relevant authorities and NGOs, consultation with NPWS and site. Survey work includes multi-disciplinary walk over surveys, dedicated habitat and vegetation composition surveys, terrestrial fauna surveys (otter, bird, bats) and survey of invasive species. The NIS was prepared in line with best practice guidance and survey work is carried out in accordance with relevant surveying guidelines and comprises seasonal data and data gathered over a number of years (Appendix 7-1 of the EIAR). The NIS concludes that in the light of best scientific knowledge in the field, and having regard to all aspects of the proposed development by itself and in combination with other plans and projects that all reasonable doubt has been removed as to the likelihood of adverse effects of the development on the integrity of relevant Natura 2000 sites.

9.5.3. Parties to the application have raised certain matters set out in paragraph 9.3.12 above.

9.5.4. Having reviewed the documents, submissions and consultations, I am satisfied that the information allows for a complete assessment of any adverse effects of the development, on the conservation objectives of the following European sites alone, or in combination with other plans and projects:

- Glenamoy Bog Complex SAC [000500].
- Slieve Fyagh Bog SAC [000542].
- Carrowmore Lake Complex SAC (site code 000476).
- Bellacorick Bog Complex SAC [001922].
- Owenduff/Nephin Complex SAC [000534].

- Owenduff/Nephin Complex SPA [001922].

9.6. Appropriate Assessment of Implications of the Proposed Development

9.6.1. 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.

9.7. European Sites.

9.7.1. The following sites are subject to Appropriate Assessment:

- Glenamoy Bog Complex SAC [000500]. Glenamoy Bog lies immediately north of the subject site and extends to the north Mayo coast. It is described by the NPWS as a large site 'situated in the extreme north-west of Co. Mayo, where the climate is wet oceanic, and gales from the Atlantic are frequent. This area is underlain by metamorphic rocks, comprising mainly schists and quartzites of Moinian age. From sea-level, the site reaches 379 m O.D. at Maumakeogh. The soils are predominantly peats, with underlying glacial tills usually only visible along water channels and roads. Four main river systems drain the site: the Glenamoy, the Muingnabo, the Belderg and the Glenglassra Rivers. One medium-sized lake, Lougherglass, occurs on the site'. . The Glenamoy River is described as 'predominantly a western, acidic, spate river which has a valuable late run of salmon (Salmo salar) in July, with good spawning habitats and good water quality'. The site is an SAC for its coastal and inland habitats and associated species. In the vicinity of the wind farm site, to the north and north east of the site boundary, is Blanket bog, potential natural dystrophic lakes and ponds and Marsh saxifrage.
- Slieve Fyagh Bog SAC [000542]. Slieve Fyagh Bog lies immediately west of the wind farm site. It is described by the NPWS as 'located about 6 km north-east of Bangor in Co. Mayo. It is bounded on the north by the Glenamoy River, on the east and west by forestry plantations, and on the south by the Glencullin River. Slieve Fyagh itself is a plateau of shales and sandstone

rocks, reaching an elevation of approximately 300 m.' The site is an SAC selected for its Blanket Bog (Active) habitat. Occurring within the SAC numerous lakes and blanket bog pools on flatter parts of the plateau and streams descending from the plateau to lower ground.

- Carrowmore Lake Complex SAC (site code 000476). This is a large site to the south west and directly adjoining the wind farm site and grid connection route. The site is described by the NPWS as 'located north and east of Bangor Erris, in Co. Mayo. There are two main parts to the site: Carrowmore Lake, a large, shallow oligotrophic/mesotrophic lake, and Largan More Bog, an impressive tract of blanket bog. From an altitude of 6 m at the lake, the site grades upwards in a general south-easterly direction, reaching 199 m on Largan More Bog'. The site is an SAC selected for the following habitats and species, Blanket Bogs (Active), Rhynchosporion Vegetation, Slender Green Feather-moss and Marsh Saxifrage. Three areas of blanket bog are incorporated into the site: Glenturk, Carrowmore (or Glencullin) and Largan More, with Largan More in closest proximity to the site. Bog pools are a feature of the bog surface and Rhynchosporion vegetation is well-represented along the margins of pools and in the wet, quaking flats between pool areas. Slender Green Feather-moss and Marsh Saxifrage are identified as occurring >1km to the south west of the subject site.
- Bellacorrick Bog Complex SAC [001922]. Bellacorrick Bog Complex SAC lies c.1km to the east of the wind farm site and south of the N59 in the vicinity of Bellacorrick. It is described 'as a large peatland site in Co. Mayo, situated on a low-lying undulating plain and consisting of two large areas separated by an area of forestry. The larger of the two areas extends from south of Bellacorick eastwards, south-eastwards and then north to Doobehy. The smaller area is situated 6 km south-east of Glenamoy and extends south to 3 km north of Bellacorick and east towards Doobehy'. It is identified as an SAC for Dystrophic Lakes, Wet heath, Blanket Bogs (Active), Rhynchosporion Vegetation, Alkaline Fens, Geyer's Whorl Snail and Marsh Saxifrage. To the east of the site is Blanket Bog and potential natural dystrophic lake and pond habitat.

- Owenduff/Nephin Complex SAC [000534]. This SAC lies to the south of the N59 and is an extensive site described as 'relatively intact blanket bog and mountains incorporates the catchment of the Owenduff River and much of the Nephin Beg Mountain range, and is situated in Co. Mayo. Lough Feeagh, which is located approximately 5 km northwest of Newport Town, lies in the south-east corner of the site. From here, the site extends northwards to the Owenmore River and almost to the town of Bangor Erris, and westwards to the townland of Ballycroy'. The site is an SAC for identified habitats and species including in the area of the site Blanket Bog and the potential for Atlantic salmon and Otter.
- Owenduff/Nephin Complex SPA [001922]. The SPA covers the same terrain as the SAC and is identified as a SPA of special conservation interest for Merlin and Golden Plover, with both species breeding within the site.

9.7.2. Tables 2 - 7 below summarise for each European site the Qualifying Interest (QI) of the site, Conservation Objectives, potential adverse effects, mitigation measures proposed by the applicant, in-combination effects and an overall conclusion in respect of the effect of the development on the integrity of the site. I have also examined the attributes and targets for each QI, the Natura 2000 data forms and supporting documents as relevant available on the NPWS website. Attributes and targets for each European sites are set out in full in the NIS in section 6, Tables 6-1 to 6-25.

9.8. Aspects of the Proposed Development.

9.8.1. The proposed is described in Section 2 of this report. The main aspects of the proposed development that could adversely affect the conservation objectives of European sites are:

- Habitat loss/fragmentation with effects on mobile species of conservation interest (in situ, ex situ) (all phases).
- Habitat degradation, disturbance and displacement of species as a consequence of proximity to construction sites/grid connection route e.g. dust, noise (in situ and ex situ) (construction and decommissioning).

- *In situ* and *ex situ* disturbance, displacement and/or mortality via collision with operational turbines of mobile species of SCI during operation. (NB No potential for barrier effects as site not located on a migration route for any SCI – see section 4.3.2 of Birds Report).
- Uncontrolled discharge of polluted surface water from the site, for example, that is silted (including from peat slides) or contains, hydrocarbons or cement (construction, operation and decommissioning) with adverse effects on habitats and/or species of conservation interest in European sites (in situ and ex situ) (all phases).
- Changes to hydrology within the site with adverse effects on peatland habitat in adjoining European sites (habitat degradation) (all phases).

9.8.2. In combination effects may arise from other plans and projects, existing or proposed, in the area of the site, including other wind farm development situated within 20km of the site (section 7, NIS).

Table 2 Appropriate Assessment Summary Matrix. Glenamoy Bog Complex SAC [000500].

Glenamoy Bog Complex SAC, Site Code 000500.

Key issues that could give rise to significant effects –

- No direct effects. Footprint outside of designated site.
- Red line boundary borders watercourse located in SAC. Closest proposed works are in a separate catchment, over 300m away and no surface water connection exists.
- Potential for indirect effects of habitat degradation during construction, operation and decommissioning, due to changes in drainage and hydrology from surface water management, compaction of soil and increase in impermeable surfaces.
- Site specific threats, pressures and activities with potential to effect the SAC (Table 4-10, NIS) include 'roads, motorways' and 'forestry clearance', which are associated with the proposed development.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objectives Targets and Attributes (in full in Tables 6-4 to 6-10 NIS)**	**Potential Adverse Effects**	**Mitigation Measures (section 5.2 NIS)**	**In-combination effects**	**Can adverse effects on integrity be excluded**
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Machairs (* in Ireland) [21A0] Petalophyllum ralfsii (Petalwort) [1395] Hamatocaulis vernicosus (Slender	To maintain/restore favourable conservation condition by reference to defined attributes and targets.	No potential for effects, no surface water connection and distance from development site (Maps 3 and 5 SSCOs).	N/A	N/A	Yes.

Green Feather-moss) [6216]					
Natural dystrophic lakes and ponds [3160]	To maintain favourable conservation condition by reference to defined attributes and targets. Proximate to northern boundary of subject site (Map 4 SSCOs).	Indirect effects during construction, operation and decommissioning arising from changes to hydrology/drainage. Key risk for this SAC is the interceptor drains between T12 and T13, within 200m of the SAC (Proposed Drainage Layout, Sheet 1 of 8).	**Mitigation by design.** Avoidance of watercourses (50+m), minimum footprint for development, shallow interceptor drains and integration with existing forestry system (existing system not causing drainage of peat). Peat Stability Assessment Report identifies low risk of peat failure (Appendix 8-1, EIAR). **Construction** <u>Hydrology/drainage:</u> Surface water management system to manage and control flows on site during **construction** with maintenance of	Policy environment supports wind energy development with protection to European sites. The development avoids peatland habitats and biodiversity plan provides for the creation of improved/new peatland habitat. Future development of forestry (to replace lost forestry) requires Technical Approval and consideration of EIA and AA. Replacement forestry will comply with environmental legislation. Any replacement forestry to be >10km from subject site and outside of any hydrological pathways of connectivity. Other wind farm development within 20km (Table 7-2 NIS). No adverse effects identified from subject development and	Yes.

			hydrological function of water courses on site and in wider catchment (see Appendix 4-1, 4-4 EIAR and Appendix A of 4-4). Pollution Adherence to details set out in CEMP for site set up, pollution prevention and hydrocarbon management to ensure no adverse effects on water quality during construction, including minimising waters arising on site, adequate treatment of any water arising, arrangements for refuelling, keyhole felling, peat placement in accordance with Peat Stability Assessment Report (Appendix 8-1,	therefore no potential for cumulative effects.	

			EIAR) and dust management (Appendix 2 – NIS). No instream works for wind farm access roads. Adherence to relevant guideline documents for construction works (IFI, SNH, OPW). Daily monitoring of excavations, continuous turbidity monitors at locations around wind farm site with daily visual inspections and field chemistry monitoring. <u>Dust</u> Mitigation measures set out in section 3.6 CEMP and include standard means to limit dust emissions e.g. watering of roads, cleaning of		

			local roads, misting of dusty activities. **Operation** <u>Hydrology/drainage and pollution</u> Maintenance of some interceptor drains, swales/road side drains, check dams and stilling/settlement ponds during operation to intercept and manage flows on site. Installation of 20 no. piezometers for monitoring water levels in peat along SAC boundaries, upslope of facilities that are closest to the SAC. Standpipes to be monitored manually on a monthly basis and 6 no. to have automatic data loggers for continuous		

			monitoring. Quarterly review of data to assess whether effects detected. **Decommissioning** plan to be agreed with local authorities in advance. All below ground works to remain in place.		
Northern Atlantic wet heaths with Erica tetralix [4010]	To restore favourable conservation condition by reference to defined attributes and targets. Not mapped (potential to occur in proximity to development site). Covers c.6% of the SAC (approx. 723ha).	As above.	As above.	As above.	Yes.
Juniperus communis formations on heaths or calcareous grasslands [5130]	To maintain favourable conservation condition by reference to defined attributes and targets. Not surveyed in detail (potential to occur in	As above.	As above.	As above.	Yes.

	proximity to development site). Research notes juniper as being fairly widespread throughout blanket bog habitat.				
Blanket bogs (* if active bog) [7130]	To restore favourable conservation condition by reference to defined attributes and targets. Habitat not mapped but estimated to be c.6749ha, covering 52% of the SAC.	As above.	As above.	As above.	Yes.
Transition mires and quaking bogs [7140]	To restore favourable conservation condition by reference to defined attributes and targets. Not mapped. The habitat is documented to occur where bog vegetation and base-rich flushes mere and at the interface between pools/lakes and adjacent bog. Potential to occur in proximity to development	As above.	As above.	As above.	Yes.

	site. Potential to occur in proximity to development site.				
Depressions on peat substrates of the Rhynchosporion [7150]	To restore favourable conservation condition by reference to defined attributes and targets. Not mapped. Habitat confined to relatively small areas but is best represented around pool margins and in wet hollows in the SAC.	As above.	As above.	As above.	Yes.
Salmo salar (Salmon) [1106]	To restore favourable conservation condition by reference to defined attributes and targets. IFI identify Barroosky River providing a salmon spawning and nursery habitat for the Glenamoy River fishery Potential for water pollution to impact on habitat.	As above.	As above.	As above.	Yes.

Saxifraga hirculus (Marsh Saxifrage) [1528]	To restore favourable conservation condition by reference to defined attributes and targets. Proximate to northern boundary of subject site (Map 6 SSCOs).	As above, species requires maintenance of hydrological regime.	As above.	As above.	Yes.
Overall conclusion: Integrity Test. Following the implementation of mitigation, the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.					

Table 3 Appropriate Assessment Summary Matrix. Slieve Fyagh Bog SAC [000542].

Slieve Fyagh Bog SAC [000542].

Key issues that could give rise to significant effects –

- No direct effects. Footprint outside of designated site.
- No surface water connection and closest works are 215m away.
- Potential for indirect effects of habitat degradation during construction, operation and decommissioning, due to changes in drainage and hydrology from surface water management, compaction of soil and increase in impermeable surfaces.
- Site specific threats, pressures and activities with potential to effect the SAC (Table 4-8, NIS) include 'roads, motorways', which are associated with the development.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objectives Targets and Attributes (in full in Table 6-3 NIS)**	**Potential Adverse Effects**	**Mitigation Measures (section 5.2 NIS)**	**In-combination effects**	**Can adverse effects on integrity be excluded**
Blanket bogs (* if active bog) [7130]	To restore favourable conservation condition by reference to defined attributes and targets. Habitat not mapped. Extends to c.1700ha.	Indirect effects construction, operation and decommissioning with changes to hydrology/drainage. Key risk for this SAC the interceptor drains between T3/T4 and T5/met mast, within	As per Table 2 (mitigation by design, for construction, operation and decommissioning).	As per Table 2	Yes.

		100m of the SAC (section 9.4.3.2, EIAR and Proposed Drainage Layout Sheet 4 and 5).			
Overall conclusion: Integrity Test. Following the implementation of mitigation, the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.					

Table 4 Appropriate Assessment Summary Matrix . Carrowmore Lake Complex SAC [000476].

Carrowmore Lake Complex SAC, Site Code 000476.

Key issues that could give rise to significant effects –

- No direct effects. Footprint outside of designated site. Red line boundary includes a watercourse that flows into SAC. Closest works are 200m from stream and no surface water linkage to the stream.
- Potential for indirect effects of habitat degradation during construction, operation and decommissioning, due to (a) changes in drainage and hydrology from surface water management, compaction of soil and increase in impermeable surfaces, (b) deterioration in water quality due to the release of suspended solids and hydrocarbons and (c) dust pollution (construction and decommissioning) given the proximity of turbine T2 and the grid connection route to designated site.
- Site specific threats, pressures and activities with potential to effect the SAC (Table 4-6, NIS) include 'roads, motorways', which are associated with the development.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objectives Targets and Attributes (in full in Tables 6-1 to 6-2, NIS)**	**Potential Adverse Effects**	**Mitigation Measures (section 5.2 NIS)**	**In-combination effects**	**Can adverse effects on integrity be excluded**
Saxifraga hirculus (Marsh Saxifrage) [1528] Hamatocaulis vernicosus (Slender	To maintain favourable conservation condition by reference to defined attributes and targets.	No potential for effects, no surface water connection and distance from	N/A	N/A	Yes.

Green Feather-moss) [6216]		development site (Map 4 and 3 SSCOs).			
Blanket bogs (* if active bog) [7130]	To restore favourable conservation condition by reference to defined attributes and targets. Habitat not mapped. Extends to c.2285ha.	No surface water connection to European site. Potential for indirect effects construction, operation and decommissioning from: (a) changes to hydrology/drainage e.g. if peat is excessively drained. Key risk of this SAC is upslope of turbines T2 and T17 within/approaching 100m of SAC, by virtue of interceptor drains (section 9.4.3.2, EIAR and Drainage Plan, Sheet 7). (b) deterioration in water quality (all	As per Table 2 (mitigation by design, for construction, operation and decommissioning). (No instream works for grid connection).	As per Table 2.	Yes.

		phases, from surface water drainage), (c) dust given proximity of turbine T2 and the grid connection route to designated site (construction & decommissioning).			
Depressions on peat substrates of the Rhynchosporion [7150]	To restore favourable conservation condition by reference to defined attributes and targets. Habitat not mapped. Scattered throughout blanket bog.	As above.	As above.	As above.	Yes.
Overall conclusion: Integrity Test. Following the implementation of mitigation, the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.					

Table 5 Appropriate Assessment Summary Matrix . Bellacorick Bog Complex SAC [001922].

Bellacorick Bog Complex SAC, Site Code 001922.

Key issues that could give rise to significant effects –

- No direct effects. Footprint outside of designated site.
- Sheskin Stream which drains the subject site flows through the northern part of the SAC, upstream of its confluence with Owenmore River.
- Owenmore River flows along northern boundary of SAC, to south of N59 (southern part of SAC). All works required for grid connection to be carried out within the N59 road corridor with no direct effects on SAC. Proposed grid connection crosses tributaries of the River (no instream works). River not designated as a QI.
- Potential for indirect effects of habitat degradation during construction, operation and decommissioning, due to (a) changes in drainage and hydrology arising from surface water management, compaction of soil and increase in impermeable surfaces, (b) deterioration in water quality due to the release of suspended solids and hydrocarbons and (c) dust pollution given the proximity of the grid connection route to designated site.
- Site specific threats, pressures and activities with potential to effect the SAC (Table 4-11, NIS) include 'roads, motorways', which are associated with the development.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objectives Targets and Attributes (in full in Table 6-11 to 6-15, NIS)**	**Potential Adverse Effects**	**Mitigation Measures (section 5.2 NIS)**	**In-combination effects**	**Can adverse effects on integrity be excluded**
Natural dystrophic lakes and ponds [3160]	To maintain the favourable conservation condition	Potential for adverse effects on habitat from changes to hydrology and water pollution.	As per Table 2 (mitigation by design, for construction,	As per Table 2.	Yes.

	by reference to defined attributes and targets. Lakes and ponds shown in Map 3 SSCOs. Habitat likely to occur in most pools and lakes.	dust (including grid connection works).	operation and decommissioning). (No instream works for grid connection).		
Northern Atlantic wet heaths with Erica tetralix [4010]	To restore the favourable conservation condition by reference to defined attributes and targets. Not mapped but estimated to be c.187ha covering 2% of SAC. Potential to occur in vicinity of grid connection.	Potential for adverse effects on habitat from changes to hydrology and water pollution.	As above.	As above.	Yes.
Blanket bogs (* if active bog) [7130]	To restore the favourable conservation condition by reference to defined attributes and targets.	Potential for adverse effects on habitat from changes to hydrology and water pollution.	As above.	As above.	Yes.

	No mapped but estimated to be c.6286ha covering 66% of SAC. Potential to occur in vicinity of grid connection.				
Depressions on peat substrates of the Rhynchosporion [7150]	To restore the favourable conservation condition by reference to defined attributes and targets. Not mapped, total area is unknown. The habitat occurs in locations supporting pools and wet quaking areas. Potential to occur in vicinity of grid connection.	Potential for adverse effects on habitat from changes to hydrology and water pollution.	As above.	As above.	Yes.
Alkaline fens [7230]	To restore the favourable conservation condition	Potential for adverse effects on habitat from changes to hydrology and water pollution.	As above.	As above.	Yes.

	by reference to defined attributes and targets. Not mapped. Occurs throughout SAC but is most well developed along eastern margin. Potential to occur in vicinity of grid connection.				
Vertigo geyeri (Geyer's Whorl Snail) [1013]	To maintain the favourable conservation condition by reference to defined attributes and targets.	No potential for effects given location of species in SAC relative to site, significantly removed from subject site and upstream of it (Map 4 SSCOs).	As above (wider protection of water quality in SAC).	As above.	Yes.
Saxifraga hirculus (Marsh Saxifrage) [1528]	To maintain the favourable conservation condition by reference to defined attributes and targets. Occurs in 5 no. flushes. Not mapped on account of presence of	Worst case scenario, potential for adverse effects on species from changes to hydrology and water pollution.	As above.	As above.	Yes.

	sensitive associated species. Is restricted to mineral flushes in blanked bog where rising groundwater forms small streams and seepage areas suitable for the species.				
Overall conclusion: Integrity Test. Following the implementation of mitigation, the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.					

Table 6 Appropriate Assessment Summary Matrix . Owenduff/Nephin Complex SAC [000534].

Owenduff/Nephin Complex SAC [000534]. Large area of relatively intact blanket bog (one of best examples in the country) and mountains. Incorporates the catchment of the Owenduff River and much of Nephin Beg Mountain Range. Lies to the south of the subject site and south of the N59 National road.

Key issues that could give rise to significant effects –

- No direct effects. Footprint outside of designated site.
- Downstream surface water connectivity (c.10km) with SAC via watercourse that flow from the site into the Owenmore River.
- Potential for indirect effects arising from (a) deterioration in water quality due to the release of suspended solids and hydrocarbons with impacts on QI species (including salmon), (b) dust pollution given the proximity of the grid connection route to designated site.
- In addition, there is suitable habitat for QI species in other smaller watercourses within the site and noise from construction works along the grid connection route may carry to the SAC. There is potential therefore for *in* and *ex situ* disturbance and displacement of QI species during construction and decommissioning (otter)].
- Site specific threats, pressures and activities with potential to effect the SAC (Table 4-14, NIS) include 'roads, motorways', which are associated with the development.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objectives Targets and Attributes (in full in Table 6-16 to 6-24, NIS)**	**Potential Adverse Effects**	**Mitigation Measures (section 5.2 NIS)**	**In-combination effects**	**Can adverse effects on integrity be excluded**
Oligotrophic waters containing very few minerals of sandy	To maintain or restore the favourable conservation condition	No potential for effects given absence of downstream water	N/A	N/A	Yes

plains (Littorelletalia uniflorae) [3110] Natural dystrophic lakes and ponds [3160] Saxifraga hirculus (Marsh Saxifrage) [1528] Hamatocaulis vernicosus (Slender Green Feather-moss) [6216]	by reference to defined attributes and targets.	connection to these features and distance to closest records of habitats and species to the development site (Maps 3, 4 and 5 SSCOs).			
Alpine and Boreal heaths [4060]	To restore the favourable conservation condition by reference to defined attributes and targets. Not mapped but qualifying habitat is estimated to be c.1,150ha, or c.4% of SAC. Habitat occurs on summits and ridges and above 400-500mm	Unlikely to be affected given location proximity of works to lowland habitat only within the SAC.	N/A	N/A	Yes

	where it forms a mosaic with bare rocks.				
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	To maintain the favourable conservation condition by reference to defined attributes and targets. Owenduff/Nephin Complex SAC was selected for highly oligotrophic, base poor rivers with limited aquatic vegetation. Main rivers in the SAC are the Owenduff and its tributaries to the south, and parts of the Owenmore and tributaries to the north east.	Potential for adverse effects on habitat from water pollution from (a) upstream construction, operation, decommissioning works and (b) dust from grid connection works.	As per Table 2 (mitigation by design, for construction, operation and decommissioning). (No instream works for grid connection).	As per Table 2.	Yes
Northern Atlantic wet heaths with Erica tetralix [4010]	To restore the favourable conservation condition	Potential for adverse effects on habitat from dust along connection works.	As above.	As above.	Yes

	by reference to defined attributes and targets. Habitat not mapped but qualifying habitat is estimated to be c.4,524ha, or 17% of the SAC. Occurs in mosaic blanket bog within the SAC.				
Juniperus communis formations on heaths or calcareous grasslands [5130]	To maintain the favourable conservation condition by reference to defined attributes and targets.	Potential for adverse effects on habitat from dust along connection works.	As above.	As above.	Yes
Blanket bogs (* if active bog) [7130]	To restore the favourable conservation condition by reference to defined attributes and targets.	Potential for adverse effects on habitat from dust along connection works.	As above.	As above.	Yes
Transition mires and quaking bogs [7140]	To restore the favourable conservation condition	Potential for adverse effects on habitat from	As above.	As above.	Yes

	by reference to defined attributes and targets.	dust along connection works.			
Salmo salar (Salmon) [1106]	To restore the favourable conservation condition by reference to defined attributes and targets. Salmon distribution in the SAC is not mapped.	Potential for adverse effects on habitat from water pollution from upstream construction, operation, decommissioning works.	No instream works or alterations to river morphology. Best practice environmental controls, mitigation measures and monitoring in section 5.2 NIS, 4.7 EIAR and CEMP to prevent pollution.	As above.	Yes
Lutra lutra (Otter) [1355]	To maintain the favourable conservation condition by reference to defined attributes and targets. Terrestrial habitat is c.840.63ha along river banks/lake shoreline; freshwater (river) habitat is c.382.65km and freshwater habitat (lake) at c.540.66ha.	Presence of suitable habitat within and immediately surrounding development site (including grid connection works in proximity to SAC). Species is crepuscular (active at night times) and evidence shows no significant effects from	Works to take place in daylight hours. From precautionary perspective, turbines located 50m + from mapped watercourses. Minor culvert upgrades proposed, watercourse crossings have no instream works. Pre-construction survey to ensure no otter	As above.	Yes

		human disturbance (including recreation). Evidence of otter trails along several watercourses but no breeding, resting or foraging sites within construction area/ grid connection route. Habitat suitability within EIAR site boundary poor (small, high energy upland nature of watercourses). Potential for barrier effects (watercourse crossings). Potential for adverse effects on habitat from water pollution from upstream construction, operation, decommissioning works.	taken up residence in/near works area. If holt encountered, it will be subject to exclusion procedures as per TII/NRA guidelines in consultation with NPWS. No works to be undertaken within 150m of any holt where breeding females/cubs present. No wheeled/tracked vehicles within 20m of active but non breeding holts. Water quality to be protected during construction, operation and decommissioning by design (distance from water courses), mitigation and monitoring measures in in section 5.2 NIS, 4.7		

			EIAR and CEMP to prevent pollution.		

Overall conclusion: Integrity Test.

Following the implementation of mitigation, the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Table 7 Appropriate Assessment Summary Matrix . Owenduff/Nephin Complex SPA [004098].

Owenduff/Nephin Complex SPA [004098].

Key issues that could give rise to significant effects –

- No direct effects. Footprint outside of designated site.
- Development is within range of both SCI species.
- Due to the close proximity of the development to the SPA there is also potential for *in* situ and *ex situ* disturbance and displacement of SCI species during construction, operation and decommissioning and for collision risk during operation.
- Site specific threats, pressures and activities with potential to effect the SAC (Table 4-16, NIS) include 'roads, motorways', which are associated with the development.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objectives Targets and Attributes (in full in Table 6-25, NIS)**	**Potential Adverse Effects**	**Mitigation Measures (section 5.2 NIS)**	**In-combination effects**	**Can adverse effects on integrity be excluded**
Merlin (Falco columbarius) [A098]	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA.	Bog and conifer plantation habitats in study area (development site plus 500m) are suitable to support Merlin. No breeding observed but species recorded on site. NIS acknowledges potential of species to breed locally. Medium sensitivity to	Mitigation by design (to avoid bog habitat). Pre construction/ decommissioning surveys in all suitable breeding habitat before and/during construction (up to	The development avoids peatland habitats and biodiversity plan provides for the creation of improved/new peatland habitat. Other wind farm development within 20km (Table 7-2 NIS).	Yes

		disturbance with 300-500m buffer zone recommended by NatureScot for breeding birds. For disturbance from forestry operations, distance range is 200m to 400m. If Merlin breed on site in the future, potential for <u>construction</u> of development disturb breeding birds within a distance of up to 500m. No potential for impacts on birds passing through site in winter/ migration as the birds are highly mobile and have a large hunting range. <u>Operation</u> – Merlin occasional visitor to development site but may breed locally. No data to show displacement by wind farms. Nests in trees or open bog and hunts close to ground. Considered view in NIS,	1km for Merlin territories). Buffer zone appropriate to species around expected location of nest until breeding cycle complete. Control of vegetation at turbine locations (operation). Post construction bird monitoring to ensure no adverse effects on bird species (to include site area and bogs to west and south west). To include flight activity surveys, distribution and abundance surveys and collision searches.	No adverse effects identified from subject development no potential therefore for cumulative effects.	

		species will not be displaced from suitable habitat in vicinity of turbines. No potential for significance disturbance with maintenance of wind farm (use of access tracks, small crews infrequent trips). Collision rate is very low (Table 5-1), species not prone to collision risk (flight low to ground, below rotor). NIS estimates 0.06 bird collisions over lifetime of project. **Decommissioning** – Similar effects to construction but shorter duration.			
Golden Plover (Pluvialis apricaria) [A140]	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA.	Blanket bog to west and southwest of site provides habitat suitable for breeding. During 2022 moorland survey, c. two to three pairs identified within 1km to west of site boundary (bog to south and	As above, with preconstruction survey up to 500m of development area and up to 1km of bogs to west of site from edge of forest.	As above.	Yes.

		southwest of site not surveyed). Closest pair c.590m from Turbine 2. Birds on passage may land on bog habitat. Construction will take place within 100m of open bog land which provides suitable breeding habitat. Forestry to remain in place between work area and open bog. Adjoining bog rises in places above wind farm and works will be highly visible to birds. Construction likely to have a potential disturbance effect on breeding birds up to 500m of construction area. Recent decline in population in on bogs within Slieve Fyagh SAC and potential for significant adverse short term impact. No potential for impacts on birds passing through site in			

		winter/ migration (highly mobile, settle for short periods). Operation – Blanket bog to west and southwest of site potentially support breeding Golden Plover. Birds on passage or in winter may also land on bog habitat, but no evidence of birds regularly doing this. Birds also highly mobile and settle for short periods. Research indicates significant avoidance of turbines to a distance of 200m, but little evidence of population decline at wind farm sites and evidence of habituation to wind farms. Closest turbine to bog is 112m and four turbines within 200m. Closest turbine to breeding pair is c.590m (T2). Potential			

		for slight adverse effect of displacement. No potential for significance disturbance with maintenance of wind farm (use of access tracks, small crews infrequent trips). Not identified as susceptible to collision risk (flight path does not overlap with rotor sweep). **Decommissioning** – Similar effects to construction but shorter duration.			
Overall conclusion: Integrity Test. Following the implementation of mitigation, the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.					

9.9. Integrity Test

9.9.1. 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 8-1 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 comprehensive measures put forward to minimise the potential for effects arising from changes in drainage and hydrology, notably the proposals to maintain the hydrological function of water courses on site and in wider catchment and to monitor effects on adjoining peatland,
- 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 CEMP,
- 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,

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

- Glenamoy Bog Complex SAC [000500].
- Slieve Fyagh Bog SAC [000542].
- Carrowmore Lake Complex SAC (site code 000476).
- Bellacorick Bog Complex SAC [001922].
- Owenduff/Nephin Complex SAC [000534].
- Owenduff/Nephin Complex SPA [001922].

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

9.10. Appropriate Assessment Conclusion

9.10.1. The proposed 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:

- Glenamoy Bog Complex SAC [000500].
- Slieve Fyagh Bog SAC [000542].
- Carrowmore Lake Complex SAC (site code 000476).
- Bellacorick Bog Complex SAC [001922].
- Owenduff/Nephin Complex SAC [000534].
- Owenduff/Nephin Complex SPA [001922].

9.10.2. 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.

9.10.3. Following an Appropriate Assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of 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 and there is no reasonable doubt as to the absence of adverse effects.

10.0 **Recommendation**

10.1. I recommend that permission for the development be granted subject to conditions.

11.0 **Reasons and Considerations**

(a) National policy with regard to the development of alternative and indigenous energy sources and the minimisation of emissions from greenhouse gases

(b) the provisions of the Wind Energy Development Guidelines – Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government in June 2006,

(c) the policies set out in the Regional Spatial and Economic Strategy of the Northern and Western Region 2020,

(d) the policies of the planning authority Mayo County Development Plan 2022,

(e) the character of the landscape in the area of the site,

(g) the pattern of the existing and permitted development in the area,

(h) The distance between the turbines and surrounding dwellings and other sensitive receptors from the proposed development,

(i) The environmental impact assessment report submitted,

(j) The Natura Impact Statement submitted,

(k) The submissions and observations made in connection with the planning application,

(l) The report of the Inspector.

Environmental Impact Assessment

The Board completed an environmental impact assessment of the proposed development taking into account:

- The nature, scale and extent of the proposed development,
- The environmental impact assessment report and associated documentation submitted in support of the application,

- The submissions from the Planning Authority, prescribed bodies and observers, and
- The Inspector's report.

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment.

The Board agreed with the examination, set out in the Inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the application.

The Board considered, and agreed with the Inspectors reasoned conclusions, that the main significant direct and indirect effects of the proposed development on the environment are as follows:

- Population and human health – Short term negative effects by way of noise, dust and traffic and short term positive impacts on the local economy during construction. Long term negative direct and cumulative effects on landscape character and visual impacts in the immediate area of the site and potential for adverse effects of noise, shadow flicker and night time illumination at a small number of properties. These impacts will be mitigated by a managed approach to construction as set out in CEMP, the modest area affected by landscape change, the active control of turbines during operation and implementation of the Recreational Management Plan.
- Biodiversity – Potential negative impacts on water quality during all phases of the development with the risk of significant effects on fisheries habitats, disturbance during all phases of the project and collision risk of mobile species during operation. These impacts will be mitigated by avoidance of water features and key habitats in the layout of the development, detailed management and monitoring of all phases of the development in accordance with project documentation, which includes Surface Water Management Plan, CEMP, Bird Impact Assessment Report, Bat Report and Biodiversity

Management and Enhancement Plan (which includes treatment of invasive species).

- Land, soil, water, air and climate – Risk of water pollution, changes in hydrology during construction and operation with consequential risks to peat stability, short term localised effects on air quality and noise, long term positive effects on air quality and climate, with significant production of energy from a renewable source. Negative effects will be mitigated by management of surface water prior to, during and post construction work and on-going monitoring of water quality upstream and downstream of the development site, monitoring of the effects of site drainage on peat stability and management of construction practices in line with the proposed CEMP and Surface Water Management Plan.
- Archaeology, cultural heritage, landscape and material assets – Potential direct impacts on unknown features of archaeology, indirect, cumulative effects on Western Way, the setting of Sheskin Lodge and Catholic Church of Our Lady at Tawnaghmore, cumulative landscape and visual effects in the area of the site and increased visibility of turbines over Slieve Fyagh and increased road traffic in the vicinity of the site and the potential for adverse effects on the integrity of the national roads (during construction). These impacts will be mitigated by archaeological monitoring of groundworks, the distance of the development from Sheskin Lodge and Our Lady's Church, intervening forestry and/or existing wind turbines, the topographical context for the site, omission of T5, T7 and T8, management of traffic in line with the proposed Traffic Management Plan, survey of affected roads prior to and post construction with remediation work as necessary.

Appropriate Assessment - Stage 1

The Board considered the Screening Report for Appropriate Assessment, the Natura Impact Statement and all the other relevant submissions and carried out both an appropriate assessment screening exercise and an appropriate assessment in relation to the potential effects of the proposed development on designated European Sites. The Board agreed with and adopted the screening assessment and conclusion carried out in the Inspector's report that the following European sites in

respect of which the proposed development has the potential to have a significant effect are:

- Glenamoy Bog Complex SAC [000500].
- Slieve Fyagh Bog SAC [000542].
- Carrowmore Lake Complex SAC (site code 000476).
- Bellacorick Bog Complex SAC [001922].
- Owenduff/Nephin Complex SAC [000534].
- Owenduff/Nephin Complex SPA [001922].

Appropriate Assessment – Stage 2

The Board considered the Natura Impact Statement and associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file, and the Inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development for the European sites for which potential to have a significant effect had been identified, in view of the site's conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

i. the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,

ii. the mitigation measures which are included as part of the current proposal, and

iii. the conservation objectives for the European Site.

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 aforementioned European Site, 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 sites' Conservation Objectives.

Proper Planning and Sustainable Development

It is considered that, subject to compliance with the conditions set out below, the proposed development would be in accordance with the National Planning Framework, the Regional Spatial and Economic Strategy of the Northern and Western Region 2020 and the provisions of the Mayo County Development Plan 2022-2028. It would:

- make a positive contribution to Ireland's national strategic policy on renewable energy and its move to a low energy carbon future,
- not have an adverse impact on the landscape,
- not seriously injure the residential or visual amenities of the area,
- not adversely affect the natural heritage,
- not adversely impact the road network in the area, and
- be acceptable in terms of traffic safety and convenience.

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

12.0 Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the planning application, 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.

   Reason: In the interest or clarity.

2. Prior to the commencement of development, revised details shall be submitted to the planning authority in respect of the layout of the development excluding wind turbine generators nos. 5, 7 and 8.

Reason: In the interest of visual amenity.

3. 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. 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.

   Reason: In the interest of the protection of the environment, water quality and fisheries habitat.

4. 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 in full.

   Reason: In the interest of clarity and the protection of the environment during the construction, operational phases and decommissioning of the proposed development.

5. The mitigation measures contained in the Natura Impact Statement submitted with the planning application shall be implemented in full.

   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.

6. The period during which the proposed development hereby permitted may be constructed shall be 10 years from the date of this order.

   Reason: In the interest of clarity.

7. The permission shall be for a period of 35 years from the date of the first commissioning of the wind farm.

   Reason: To enable the planning authority to review the operation of the wind farm in light of the circumstances then prevailing.

8. The turbines shall be 200 metres in height with a hub height of 115 metres and a rotor diameter of 170 metres in accordance with the turbine option assessed in the environmental impact assessment report and the Natura Impact Statement together with the other application documentation.

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

9. The developer shall ensure that all mitigation and contingency measures set out in the Peat and Spoil Management Plan in Appendix 4-2 of the EIAR is implemented in full and monitored throughout the lifecycle of the construction works and throughout the operational phase.

Reason: In the interest of the protection of the environment.

10. (i) The developer shall ensure that all mitigation and contingency measures set out in the Surface Water Management Plan in Appendix 4-4 of the EIAR shall be implemented in full and monitored throughout the lifecycle of the construction works and throughout the operational phase.

(ii) The locations of surface water monitoring shall be agreed with IFI prior to construction works commencing.

(iii) The design and method statement for the construction of new or upgrade watercourse crossings shall be agreed within IFI in advance of construction works commencing.

(iv) 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, Glencullin River, Barroosky 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.

(v) 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.

(vi) The on-site vehicle wash shall be closed loop with no discharge of waters to surface waters.

(vii) The construction buffer zones identified in the Geotechnical and Peat Stability Report, at higher risk, shall be marked out/taped off prior to construction works commencing on site.

(viii) Geotechnical confirmatory ground investigations shall be carried out prior to commencement of construction and the results reported to the EMC before works commence on site.

(ix) Details of any explosives to be used in borrow pits and their management shall be provided to the planning authority and EMC in advance.

(x) The proposed amenity signage shall include information on local biodiversity including the aquatic environment.

(xi) The Biodiversity Enhancement Management Plan shall include that Rhododendron ponticum identified during survey of invasive species and in pre-construction surveys, shall be removed from alongside watercourses to prevent a tunnelling effect for the lifetime of the development.

Reason: In the interest of the protection of the environment and water quality.

11. 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.

Reason: To protect the amenities of nearby residential properties.

12. 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:

(a) Between the hours of 0700 and 2300:

(i) the greater of 5dB(A) $L_{90, 10min}$ above background noise levels or 45 dB(A) $L_{90, 10min}$ at standardized 10-meter height above ground level at wind speeds of 7m/s or greater.

(ii) 40 dB(A) $L_{90, 10min}$ a= at all other standardised 10-metre height above ground level wind speed.

(b) 43 dB(A) $L_{90, 10min,}$ at all other times.

Prior to the commencement of development, the developer shall submit to and agree in writing with the planning authority a noise compliance monitoring program for the subject development, including any mitigation measures such as the de-rating of particular turbines to accord with the above limits and to comply with the Site Specific Noise Limits presented in the EIAR. All noise measurements shall be carried out in accordance with ISO Recommendation R1996 “Assessment of Noise with Respect to Community Response” as amended by ISO Recommendation R 1996-1. the results of the initial noise compliance monitoring shall be submitted to and agreed in writing with the planning authority within six months of the commissioning of the wind farm.

Reason: in the interests of residential amenity.

13. Appropriate software shall be employed on each of the turbines 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.

Reason: In the interest of residential amenity.

14. The developer shall comply with the following design requirements:

(a) The wind turbines, including masts and blades shall be finished externally in a light grey colour.
(b) Cables within the proposed development shall be placed underground.
(c) The wind turbines shall be geared to ensure that the blades rotate in the same direction.

(d) No advertising material shall be placed on or otherwise affixed to any structure on the site without a prior grant of planning permission.

Reason: In the interest of visual amenity.

15. Details of the materials, colours and textures of all external finishes of the proposed substation building and enclosed fencing shall be submitted to and agreed in writing with the planning authority prior to the commencement of development.

Reason: In the interest of visual amenity.

16. 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).

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

17. 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 following the commissioning of the wind farm and copies of the report shall be submitted to the planning authority.

Reason: To ensure the appropriate monitoring of the use of the site by bat species.

18. Prior to the commencement of development, the community gain proposal shall be submitted to the planning authority for written agreement. In default of agreement, the matter shall be referred to An Bord Pleanála for determination.

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

19. 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 commissioning of the turbines and following consultation with relevant authorities.

    Reason: In the interest of protecting telecommunication signals and residential amenity.

20. Details of aeronautical requirements 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 in WGS-84 format and the wind monitoring masts.

    Reason: In the interest of air traffic safety.

21. The developer shall comply with the requirements of Irish Water with regard to diversion of infrastructure within the site and connections to the public network.

    Reason: In the interest of public health.

22. Prior to any development taking place the developer shall submit the following to Transport Infrastructure Ireland in the case of national roads and the planning authority in relation to other roads:

(a) Road safety audits relating to junction works proposed on the national road network.
(b) Details of all signage, crash barriers, poles etc. to be removed on the national and local road network to facilitate the abnormal loads to be delivered on site.

Reason: In the interest of traffic safety.

23. (a) Prior to the commencement of development, a traffic management plan for the construction phase shall be submitted to and agreed in writing with the planning authority. The traffic plan shall incorporate the following:

(i) Details of the road network/haulage routes and the vehicle types to be used to transport materials and turbine parts to and from the site and a schedule of control measures for abnormal delivery loads.
(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.
(iii) Detailed arrangements whereby any construction damage which arises shall be made good and completed to the satisfaction of the planning authority.
(iv) Detailed arrangements for 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.

(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 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.

(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.

(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.

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.

24. The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the developer shall:

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

(b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.

The assessment shall address the following issues:

(i) the nature and location of archaeological material on the site, and

(ii) the impact of the proposed development on such archaeological material.

A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.

25. 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 the planning authority within three months of decommissioning or cessation of operation.

Reason: To ensure a satisfactory reinstatement of the site upon cessation of the project.

26. Details of the construction and environmental management plan 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.

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

27. 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 EMC shall be advised of details of any complaint.

Reason: In the interest of orderly development.

28. 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 provision and satisfactory completion of roads, footpaths, watermains, drains, open space and other services required in connection with the development, coupled with an agreement empowering the local authority to apply such security or part thereof to the satisfactory completion of any part of the development. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

Reason: To ensure the satisfactory completion of the development.

29. 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.

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

Deirdre MacGabhann

Planning Inspector

24th October 2023