Inspector's Report

ABP-306303-20

Development	Decommissioning and removal of 25 x wind turbines and construction of 13 x turbines and all associated works, upgrade of existing 110kV grid connection & widening of junctions.
Location	Keadew Upper, Cullinoboy & Clogher, County Donegal.
Planning Authority	Donegal County Council
Applicant(s)	Scottish Power Renewables (UK) Ltd
Type of Application	Strategic Infrastructure, Section 37E.
Submissions	Donegal County Council Irish Aviation Authority Geological Survey of Ireland Northern Ireland Office
Date of Site Inspection:	30th June – 2nd July 2020
Date of Oral Hearing completion:	N/A
Inspector:	Karla Mc Bride

Table of Contents

1.0 INTRODUCTION

1.1 Introduction

This is an application to replace the existing 25 x turbine Barnesmore Windfarm with a new 13 x turbine windfarm and associated works in the townlands of Keadew Upper, Cullinoboy and Clogher in County Donegal.

1.2 Project Background

Scottish Power Renewables (UK) Limited requested pre-application consultations with the Board under Section 37B of the Planning and Development Act, 2000 (as amended) for the removal of 25 x existing wind turbines at Barnesmore Windfarm and their replacement with up to 13 x new turbines with a combined output in excess of 50MW (ABP-304023-19). Two pre-application meeting took place on 26th June 2019 and 24th July 2019. The prospective applicant requested closure of the process by letter received on 2nd August 2019 and the Board, in a letter dated 20th September 2019, determined that consultations were closed. 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 comprises the proposed decommissioning and replacement of an existing windfarm.

1.3 Site and location

The windfarm site is located within Barnesmore Bog in the SE corner of County Donegal, to the NE of Donegal Town and SW of Ballybofey. The site is located on the W side of the N15 (Donegal to Derry road), E of the NI Border with County Tyrone, and NE of Barnesmore village. The surrounding area is sparsely populated with a small cluster of houses at Barnesmore village and to the W along the N15.

The upland rural area is mainly characterised by a mix of blanket bog and heathland with several upland lakes, and some small forested and turf cutting areas. The c.997ha site slopes up from c.300mOD to c.398mOD. The site is traversed by a network of drains and streams that drain into the Derg/Glendergen Rivers to the SE and ultimately Lough Foyle, and the Lowerymore River to the W which discharges to Lough Eske and ultimately Donegal Bay. Vehicular access is off the N15 to the W via

Barnesmore Village and then along local roads and an internal track that provides access to the existing Barnesmore windfarm.

The windfarm site lies completely within the Barnesmore Bog NHA which was designated after the existing windfarm became operational. The site is not covered by any sensitive European site designations although there are several sites in the wider area including the Croaghonagh Bog SAC to the N, the River Foyle & Tributaries SAC and Killeter Forest, Bogs and Lakes ASSI to the E, the Lough Eske & Ardnamona Woods SAC to the W, and the Dunragh Loughs/Pettigo Plateau SAC and Lough Derg SPA to the S. The NE corner of the site abuts a section of the Killeter Forest ASSI in County Tyrone. The Lowerymore River which flows parallel to the N15 supports Freshwater Pearl Mussel, and it drains into Lough Eske to the SW which forms part of the Lough Eske & Ardnamona Wood SAC. The lands also lie to the SE of a Non-Designated Special Protection Area for Hen Harrier.

The site does not contain any Recorded Monuments or features of archaeological, historic or architectural interest although there are several features of heritage interest in the surrounding area and along the road network including some historic stone bridges. The nearest Recorded Monuments are located along the NE site boundary with County Tyrone (possible crannogs within Loughnaweelagh). There are several walking and cycling routes in the area including the Ulster Way and the Northwest Cycle Trail, and Barnesmore Gap to the W along the N15 is located within a designated area of Especially High Scenic Amenity. There are several other permitted and operational windfarms in the wider area in both Counties Donegal and Tyrone which are located within a 20km radius of the site.

Photographs and maps on file describe the site and location in detail.

1.4 Pre-Application Consultation

ABP-304023-19: The Board's Notice to the applicants under Section 37B (4) (a) of the Planning and Development Act 2000 (as amended) confirmed that the proposed development would constitute strategic infrastructure. The records of the pre-application meetings were copied to the applicants.

1.5 Planning history

1.5.1 Application site:

***PL.05.098236*:** The Board granted planning permission in 1996 for a 25 x turbine windfarm, transformer compound, single-storey switch room & service roads. The c.60m high turbines each had a generating capacity of c.600kW. No restriction on the lifespan of the windfarm.

1.5.2 Adjacent site to N:

ABP 05.PA0040: The Board refused planning permission for a 49-x turbine windfarm, 2 x met masts, 2 x substations & associated works at two interconnected sites at Meenbog and other townlands, County Donegal for 1 reason related to proximity to areas of high scenic amenity and inadequate bird surveys.

ABP-300460-17: The Board granted planning permission for a 19-x turbine windfarm, 2 x met masts, 2 x substations & associated works at Meenbog and other townlands County Donegal, on part of the above lands. The turbines would be 156.5m high with a generating capacity in excess of 50MW.

1.5.3 Surrounding area:

Reg. Ref. 11/20064: Permission granted for the Clogher 110kV Substation.

PL05E.248796: Permission refused for 110kV Substation and underground cabling to connect the Dromnahough & Lenalea windfarms to the existing Clogher Substation. Refused for 2 reasons related to adverse impacts on European sites (River Finn SAC & Lough Eske & Ardnamona Woods SAC) and local road network.

1.5.4 Wider area:

Donegal County Council and the Board have granted planning permission for several windfarm developments within a 20km radius of the appeal site, ranging in size from c.3 to c.25 turbines. Permission has also been refused for several other windfarm developments within this radius. The situation is similar in NI.

2.0 PROPOSED DEVELOPMENT

2.0 Documentation

The application documentation includes the following:

- Planning Report
- Planning Drawings & Photomontages
- Environmental Impact Assessment Report
- Natura Impact Statement
- Residential Visual Amenity Assessment
- Pre-Application Community Consultation Report

The EIAR was supported by Technical Appendices which included:

- Appendix 2.1: Outline CEMP
- Appendix 2.3: Outline Surface Water Management Plan
- Appendix 6.2: Reptile Survey Results
- Appendix 6.5: Freshwater Pearl Mussel Survey
- Appendix 6.7: Draft Habitat Management Plan
- Appendix 7.1-5: Bird surveys & analysis
- Appendix 8.3: Peat & Slope Stability Risk Assessment
- Appendix 9.2-6: Surface Water surveys & analysis
- Appendix 9.7: Groundwater database
- Appendix 10.1-5: Noise & Wind surveys & analysis
- Appendix 12.2: Shadow Flicker Assessment
- Appendix 13.1: Cultural Assets
- Appendix 15.1: Summary of Mitigation Measures

2.2 Development Description

The proposed development would comprise the decommissioning and removal of an existing windfarm and construction of a new windfarm, including:

- Decommission & remove 25 existing wind turbines (60m high)
- Construct 13 wind turbines (180m high)
- Total generating capacity in excess of 75MW
- 1 x permanent meteorological mast (30m high)
- Upgrade existing 110kV electrical sub-station
- Expand compound to include associated buildings & car parking
- Upgrade existing 110kV grid connection to Clogher substation:
    - New Cable Interface Tower under existing 110kV overhead line;
    - Underground cable connection from new tower to substation;
    - Removal of hard tee-connection with existing overhead 110kV; Associated retirement & termination works
    - Internal underground cabling.
    - Undergrounding of 1.15km section of existing overhead 110kv
- 1 x 15MW Energy Storage Facility & associated plant & equipment
- Upgrade existing access roads & provide new access roads.
- Upgrade existing local roads & junctions
- Site drainage network, and
- All site development & ancillary works.

2.3 Environmental Impact Assessment Report (EIAR)

The EIAR described the site and other windfarms in the area; stated that the proposal would comply with national and local planning and energy policy; considered alternatives; and provided a detailed project description.

The main body of the EIAR described the receiving environment; outlined the study methodologies; assessed the potential impacts on the receiving environment under the usual range of headings; proposed mitigation measures for the removal, construction, operational and decommissioning phases; identified residual impacts

and interactions and assessed cumulative impacts; and had regard to the risk of major accidents and natural disasters.

The EIAR was informed by a visual impact analysis, several technical appendices and a Non-Technical Summary was provided.

The EIAR concluded that environmental impacts will be minimal post mitigation; that the main identified risks which relate to visual amenity, birds, water quality and aquatic ecology will be managed by mitigation measures; the proposed development would comply with climate change, renewable energy and planning policy; that it would not adversely affect amenities (residential, visual or heritage) or give rise to a traffic hazard; and that it would be in accordance with the proper planning and sustainable development of the area.

2.5 Natura Impact Statement

A Stage 1 AA screening exercise was carried out for the proposed windfarm and grid connection and a Stage 2 Natural Impact Statement was prepared.

2.5.1 Stage 1 AA Screening Report

The AA Screening exercise described the site location and the characteristics of the proposed development, and it identified the European sites within the Likely Zone of Influence of the project. It assessed the likely effects on several European sites within a 15km radius of the windfarm site. The report described the individual elements of the project with potential to give rise to effects on these European sites and it described any likely direct, indirect or secondary effects on the European sites along with in-combination effects, and it assessed the significance of any effects. This exercise concluded that the proposed windfarm and cable connection to the Clogher substation could have likely significant effects, either alone or in-combination with other plans or projects, on the Qualifying Interests and Conservation Objectives of 5 European Sites, and that progression to a Stage 2 Natura Impact Statement was considered necessary for those sites.

2.5.2 The Natura Impact Statement Report

The NIS summarised the background to the report and described the AA methodology. It described the proposed development and the baseline ecology of the site and it assessed the likely significant effects on 5 European sites which were screened in after the Stage 1 AA exercise. It identified the potential for direct and indirect effects on these European sites and proposed a range of mitigation measures which are contained in the EIAR. It assessed the potential for cumulative effects in combination with other plans and projects. The NIS was informed by the Stage 1 AA Screening Report, several ecological surveys and an outline Construction & Environmental Management Plan and relevant EIAR Chapters. The NIS concluded that, on the basis of objective scientific information, that the proposed development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site. The NIS was expanded but not altered by way of the applicants response submission to concerns raised by NPWS.

3.0 LEGISLATIVE & POLICY CONTEXT

3.1 National Policy

3.1.1 National Planning Framework Plan, 2018-2040

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

3.1.2 Climate Action Plan, 2019

This Plan seeks to realise a 30% reduction in greenhouse gas emissions and increase reliance on renewables from 30% to 70% thereby adding 12GW of renewable energy capacity by 2030 whilst phasing out fossil fuels. Section 7 deals with Electricity and it states that up to 8.2GW of the renewable energy target (70% & 12GW) could be met by on-shore wind capacity. Section 11 deals with Agriculture, Forestry and Land Use which it identifies as a source of carbon emissions and as having the potential to sequester carbon. Subsection 11.3 identifies a range of measures to deliver targets for a reduction in greenhouse gas emissions, including the better management of peatlands which cover 21% of our land area. Subsection 11.3.6 states that peatlands represent 64% of our total soil organic carbon stock, which equates to the largest carbon store in the Irish landscape. It states that this store is vulnerable to drainage for forestry, grazing and extraction and it sets out several measures to manage this carbon sink, including compliance with the measures outline in the following documents.

3.1.3 National Raised Bog SAC Management Plan, 2017-2022.

This Plan identifies the importance of undrained raised bogs as a carbon store, it notes that 53 raised bog sites have been designated as SACs, and it sets out a series of protection and restoration measures which could enhance their carbon sequestration capacity in the future.

3.1.4 National Peatlands Strategy, 2015

This document sets out a national strategy for the sustainable management of peatlands and section 5.3 deals with Peatlands and Climate Change. It describes the role of natural undrained peatlands as carbon stores and it references the EPA report *Carbon Reserve -The Potential of Restored Irish Peatlands for Carbon Uptake and Storage 2007-2013* in terms of how peatland management might be used to enhance carbon sequestration and reduce emissions. It provides advice in relation to the management of non-designated peatlands to halt carbon loss and recommends restoration measures to stabilise eroding surfaces, re-establish peatland vegetation and encourage waterlogged conditions to enable peat formation.

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

The Guidelines advise that a reasonable balance must be achieved between meeting Government Policy on renewable energy and the proper planning and sustainable development of an area and it provides advice in relation to the information that should be submitted with planning applications. The impacts on residential amenity, the environment, nature conservation, birds and the landscape should be addressed. It states that particular landscapes of very high sensitivity may not be appropriate for wind energy development.

3.1.5 Draft Wind Energy Development Guidelines, 2019

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

3.1.6 National Landscape Strategy for Ireland, 2015-2025

This document seeks to integrate landscape into our approach to sustainable development, carry out an evidence-based identification and description of landscape character, provide for an integrated policy framework to protect and manage the landscape and to avoid conflicting policy objectives.

3.2 Regional Policy

3.2.1 Regional Spatial & Economic Strategy for the North West Region, 2022

This document seeks to support the delivery of the programme for change set out in Project Ireland 2040, the National Planning Framework (NPF) and the National Development Plan 2018-27 (NDP), and to ensure coordination between the City & County Development Plans and Local Enterprise & Community Plans. It seeks to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the sustainable expansion of the transmission network. The Regional Authority seeks to ensure that future strategies and plans for the development of renewable energy, and associated infrastructure, will promote the development of renewable energy resources in a sustainable manner.

3.3 Other policy documents

- EU Energy Directives and Roadmaps, and associated national targets for renewable energy by sector.
- National Renewable Energy Action Plan 2010
- Strategy for Renewable Energy 2012-2020
- EU Guidance (2013) Wind Energy Developments and Natura 2000 Sites.
- Ireland's Transition to a Low Carbon Energy Future, DCENR, 2015-2030
- Renewable Energy Policy and Development Framework. DCENR, 2016
- Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure, DCENR, 2012
- EU Directives on Flooding and the Water Framework Directive.
- The Planning System and Flood Risk Management, 2009.

3.4 Local Planning Policy (County Donegal Development Plan 2018-2024)

3.4.1 Renewable energy & windfarms

Policies & objectives:

Policy CS-O-17: seeks to promote sustainable development, including measures to reduce energy demand & greenhouse gas emissions and adapt to climate change.
Policy ED-O-9 seeks to maximise the appropriate development of renewable energy
Policies E-P-1/9/10 seek the development of grid connections; compliance with the Wind Energy Guidelines; and to facilitate the development of renewable energy.
Policy E-P-12 *seeks to consider the development of appropriate new wind energy developments in areas identified in Map 8.2.1 which has been deleted* (see below).
Objective E-O-1 seeks to develop a sustainably diverse renewable energy portfolio.
Objective E-O-2 seeks to facilitate the strengthening of the electrical grid.
Objective E-O-3 seeks to facilitate Donegal as a centre of excellence for renewables
Objective E-O-4 seeks to limit the adverse impacts associated with global warming.
Objective E-O-5 seeks compliance with the 2006 Wind Energy Guidelines.
Objective E-O-6 seeks to ensure no adverse impacts on residential amenity.

Wind energy development standards (Appendix 3: Part B):

Section 6.1 states that wind energy proposals shall be screened for EIA & AA.
Section 6.2 lists several matters to be considered (including geological, geotechnical, ecological & visual assessments, and a PRSA should be undertaken.
Section 6.3 states that there should be no fencing (except around substations etc.).
Section 6.4: requires the undergrounding of grid cable connections within the site.
Section 6.5: requires compliance with 2006 Guidelines and not located within:

(a) The zone of visual influence of the Glenveagh National Park.
(b) The zone of influence/flight path at Donegal Airport.
(c) Deleted.
(d) SACs or SPAs.
(e) The 6 Fresh Water Pearl Mussel catchments for the Sub-Basin Management Plans for Clady, Eske, Glaskeelin, Leannan, Owencarrow and Owenea.
(f) Deleted.

(Following a Judicial Review under 2018/533 Section 6.5(c) and (f) of the Wind Energy standards at Part B: Appendix 3, Development Guidelines and Technical Standards and Map 8.2.1 were ordered to be deleted and/or removed from the County Donegal Development Plan 2018-2024.)

3.4.2 Landscape & protected views

Objective NH-O-4 seeks to ensure the protection & management of the landscape.
Objective NH-O-5 seeks to protect, manage & conserve the character, quality & value of the landscape (including scenic amenity areas, views & prospects and cultural & heritage features).
Policy NH-P-6 seeks to protect Especially High Scenic Amenity areas (Map 7.1.1).
Policy NH-P-7 seeks to facilitate development in areas of High & Moderate Scenic Amenity that integrates with the character of the landscape.
Policy NH-P-13 seeks to protect, conserve & manage landscapes having regard to the nature of the proposed development and degree accommodation.
Policy NH-P-15: It is a policy of the Council to safeguard prominent skylines and ridgelines from inappropriate development.
Policy NH-P-17 seeks to preserve the views & prospects of special amenity value & interest…….and proposals shall be considered on the basis of their importance, the integrity of the view, the degree of intrusion and material alteration of the view.
Areas of Especially High Scenic Amenity: Located to the N of the site.
Areas of High Scenic Amenity: Site lies with an area of HSA
Views & Prospects: Several to NW & S from along the N15 & Lough Derg.

3.4.3 Natural heritage

Nature conservation sites: Several SACs, SPAs & NHAs within a 15km radius.
Objective NH-O-1 seeks to protect, sustainably manage and enhance biodiversity.
Objective NH-O-2 seeks to comply with Article 6 of the Habitats Directive.
Objective NH-O-3 seeks to maintain the conservation value of all existing and/or proposed SACs, SPAs, NHAs & RAMSAR sites.

Objective NH-O-4 seeks to protect and improve the integrity and quality of Designated Shellfish Waters and FWPM basins.
Objective NH-O-10 seeks to restore ecosystems, conserve threatened habitats & species and prevent further loss of biodiversity.
Objective NH-O-11 seeks to conserve & manage Peatlands.

Policy NH-P-1 seeks to ensure that development proposals do not damage or destroy any wildlife sites of international or national importance.
Policy NH-P-4 requires the consideration of FWPM & any relevant FWPM Sub-basin plans for all developments that fall within their catchment or basin.
Policy NH-P-5 requires the consideration of the impact of potential development on habitats of natural value that are key features of the ecological network.

3.4.4 Cultural heritage

No heritage features within the site but several Recorded Monuments, sites of archaeological interest, protected structures & NIAH features in the wider areas and along the delivery and grid connection routes.

3.5 Natural Heritage Designations

European sites - SACs:

- Lough Eske & Ardnamona Wood SAC
- River Foyle & Tributaries SAC (UK)
- Dunragh Loughs / Pettigo Plateau SAC
- Croaghonagh Bog SAC
- River Finn SAC
- Donegal Bay (Murvagh)SAC
- Meenaguse / Ardbane Bog SAC
- Meenaguse Scragh SAC
- Lough Nillan Bog (Carrickatlieve) SAC

European sites - SPAs:

- Pettigo Plateau & Nature Reserve SPA
- Lough Derg (Donegal) SPA
- Donegal Bay SPA
- Lough Nillan Bog SPA

Natural Heritage Areas:

- Barnesmore Bog NHA
- Cashelnavean Bog NHA
- Lough Hill Bog NHA
- Meenagarranroe Bog NHA

Ramsar sites:

- Pettigo Plateau

Northern Irish protected sites:

- River Foyle & Tributaries ASSI & SAC
- Killeter Forest and Bogs and Lakes ASSI
- Killeter Forest Nature Reserve

3.6 Northern Irish Planning Policy

3.6.1 Regional Development Strategy for Northern Ireland, 2035

This document sets out the strategy for the future development of NI up to 2035. It identifies climate change as a key environmental and economic driver, and it recognises the need to reduce greenhouse gas emissions and to plan for the impacts of climate change. The Strategy sets out measures on transport, energy and the location of jobs and houses to help address and adapt to these issues. Policy RG5 seeks to deliver a sustainable and secure energy supply by: - increasing the contribution of renewable energy; strengthening the grid; providing new gas infrastructure; working with EU neighbours; and developing “Smart Grid” initiatives.

3.6.2 Local Area Plans

Work on several draft LAPs was suspended as a result of a court judgement relating to the SEAs which accompanied a number of Area Plans, and several matters have been referred to the European Court of Justice for consideration. The NI Environment Minister subsequently announced measures to bring about a reform of Northern Ireland's planning system and many of the plans are now in Draft stage.

Draft West Tyrone Area Plan: Issues Paper recognizes the areas potential for wind energy & the cross-border dimension to developing renewable energy.

Draft Derry City & Strabane Local Development Plan: Preferred Options Paper recognizes the potential for renewables as a means for securing sustainable energy and boosting the local economy whist also protecting sensitive areas.

Draft Fermanagh & Omagh Local Development Plan: Preferred Options Paper recognizes the potential for renewable energy which does not adversely affect the environment, landscape quality or the amenity of an area.

4.0 SUBMISSIONS

4.1 Donegal County Council

4.1.1 Planning Authority

The response of the Planning Authority is summarised below:

- Satisfied that the proposal is consistent with national & regional policy.
- Current lacunae in local wind energy planning policy as result of JR proceedings which ordered the deletion/omission of favoured/unflavoured geographical locations for windfarms and turbine heights.
- Variation to deal with this lacuna pending, therefore not in a position to adequately assess the proposal with respect to policy context.
- Proposed windfarm located with an Area of High Scenic Amenity which has the capacity to absorb development that is capable of being assimilated into the landscape (Policy NH-P-7).
- Policy NH-P-17 seeks to preserve designated view & prospects as per Map 7.11 and satisfied that the site is not affected by any designations.
- No adverse impacts on integrity of European sites subject to compliance with mitigation & monitoring measures (S.8 of NIS).
- Report of elected representatives delayed due to Covid-19 restrictions.

4.1.2 Elected members concerns

No submission received.

4.2 Prescribed Bodies

4.2.1 Dept. of Culture, Heritage & the Gaeltacht (DAU-NPWS)

General:

- Acknowledge complexity within the constraints of Barnesmore Bog NHA.
- Read report in conjunction with two previous pre-scoping reports.

Certainty of outcome:

- Clear & unambiguous outcomes in the NIS required with no lacunae or uncertainty arising from elements of the project design & mitigation measures being left to the post consent phase.
- EIAR & NIS conclusions must be supported by scientific data & analysis.
- EIAR should fully assess impacts on protected sites, biodiversity loss & the wider environment, mitigation measures should be implementable.

Integrity of Barnesmore NHA:

- All elements of project should not impede or constrain the ability of the NHA to fulfil its purpose to protect Features of Interest (Peatlands broadly composed of upland Blanket Bog, heath & associated wet flushes).

Informed impact assessment (NIS):

- CEMP & EIAR mitigation measures are not contained in the NIS and should be added to the NIS as appendices.
- Greater certainty required in wording of construction & mitigation methods to support the conclusions regarding the efficacy on mitigation measures.
- Impacts on water quality along the haul route should be adequately detailed in the method statement to allow for a complete AA.
- Risk of damage to peat processes by underground cabling should be adequately detailed in the NIS.
- NIS should contain adequate details related to the new watercourse crossings at T13 and haul route junction, to avoid uncertainly in the AA.
- NIS Bird surveys: absence of evidence is not evidence of their absence:
    - Conclusion that Merlin & Golden Plover are local birds rather than being SPA designated species is unclear & unfounded (pg.39).
    - Conclusion reached in relation to secondary species that there is no connectivity between Merlin, Hen harrier & the Pettigoe Plateau and the 5 SPAs within 15km is unclear & unfounded (pg.41).
    - Conclusion reached in relation to additional species detected on site and at the Pettigoe Plateau SPA (NI) (including Merlin, Hen harrier, Dunlin, Common tern, Lapwing, Curlew & Snipe) that there are no movement corridors is unclear & unfounded (pg.41).

- More NIS details required for mitigation of sediments & silt management during the operational phase (stone check dams) in relation to location, scale & nature, and their likely efficacy during the lifetime of the project.
- EIAR (pg.25) refers to culverting a tributary of the River Clogher & nearby drainage ditch but unclear in NIS if there is a connection to the Lough Eske & Adrnamona Wood SAC, and if these works have been assessed.
- Undertake a cumulative assessment of the proposed and existing operational windfarms with respect to birds (density, and occurrence of breeding, foraging & migrating species).

Informed impact assessment (EIAR):

- Insufficient evidence to support conclusion that decommissioning impacts will be no greater that the construction & operation impacts of the project.
- Loss of habitat (8.27ha) despite EU, national & local objectives to halt biodiversity loss, with particular regard to new developments where no net loss if advocated; any habitat & species loss should be clearly quantified, documented & tabulated in the EIAR, and comparable replacement habitat (or restorative works) proposed within the site; the draft HMP does not address all of these concerns and tables would be of benefit.
- Carbon savings associated with the project should be calculated & presented with regard to the extent of peat loss & peat function over the lifetime of the project, and the role of the peatlands as a carbon sink should be acknowledged & balanced against the high GHG emissions from the disturbed or degraded peat (in line with national guidance).
- EIAR should include an assessment of the impact of all elements of the project including offsite access for abnormal loads as well as internal tracks (pg.19 refers to a separate application for haul route access works).

Barnesmore Bog & associated peat-based habitats:

- NHA comprises a very sensitive peatland environment.
- National Peatlands Strategy sets out the policy for peatlands conservation.
- Peat habitats should be protected by avoidance & mitigation to protect the integrity of the NHA, with no compromises of its ability to fulfil its function.
- EIAR should contain clear & convincing evidence to support conclusions.

- The conclusion that the direct loss of c.4.8ha of vegetated habitat and c.3.47ha of habitat of conservation interest (peat dependent bog & heath habitats) will not affect the NHA's ability to support the habitats for which it was designated, must be evidence based.
- Require more certainty in relation to the measures required if post works monitoring indicates that the project is adversely affecting the NHA.
- Contradictory statements in EIAR & clarity required in relation to baseline conditions at the existing windfarm re localised drainage, runoff & erosion.
- Need to assess impacts of the direction & volume of surface & subsurface water flow on the function of peat-based ecology communities (Ch.6).
- Conclusion that the increase in hardstand areas will have an imperceptible impact on localised hydraulic loading & surface water runoff is not supported by scientific evidence.
- Need to assess the speed of surface water accumulation in and dispersal from associated drainage channels into specific localised water features.
- No quantifiable data or evidence to support absence of cumulative effects.
- Recommend adherence to SNA Guidance on Developments on Peatlands & Decommissioning & Restoration Plans for Windfarms.
- Acknowledge difficulties associated with full restoration of peat habitats, but EIAR should include the removal of all unnecessary infrastructure from areas of deep peat to achieve complete peat-based habitat restoration.
- Infrastructure built on substrates should be left in-situ, provided it does not result in erosion or deterioration of peatland habitats, or hydro processes.
- Proposed development is intrinsically linked to the existing windfarm, EIAR should review the efficacy of the original mitigation measures & conditions.
- Post construction monitoring regime should include the releve survey plots in Collins et al (2000) in order to assess vegetation recovery, erosion, silt mobilisation & hydro changes throughout the lifetime of the project

Ornithological interests:

- Acknowledge comprehensive presentation of data and note the importance of the site & ZoI to a variety of protected bird species.
- Recommend inclusion of Vantage point watch arc map (Viewshed) & a series of recorded flight maps for each Annex 1 & red listed species.

- Note proximity of windfarm to occupied breeding sites (Red grouse, Common sandpiper, Curlew & Golden plover), and the continued use of the site by overwintering species (Whooper swan & Golden plover).
- Research regarding behavioural response & habituation of bird species to windfarms is limited to short studies (c.3-5 yrs.) whereas windfarms have an operational lifespan of c.25+ years.
- Assessment of newly collated data with previous surveys for the existing windfarm (1990s) would help determine the effect of the operational windfarm on breeding success (Red grouse, Common sandpiper, Hen harrier & Curlew) or overwintering birds (Whooper swan & Hen harrier), & provide a useful baseline for future impact assessment.
- Wide variety of endangered Annex 1 species within site & ZoI (500m, 800m & 5km), Ch.7 & draft HMP should clarify the specific enhancement works to address Article 4.4 requirements for each species affected.
- Note that the Collision Risk for Target 1 species (Golden eagle, Golden plover & Peregrine falcon) is reduced for the proposed windfarm but not for White tailed eagle, and request the recorded collision data from post construction walkover surveys for the existing operational windfarm.

CEMP:

- Should include a section on the role & responsibilities of an Ecological Clerk of Works, with the power to cease construction works as required.
- Mitigation measures that avoid periods of minimum precipitation (pg.39) which include measurable parameters (colour coded Met Eireann weather warnings or estimated rainfall levels).

4.2.2 Dept. of Housing, Planning & Local Government

No concerns raised.

4.2.3 Transport Infrastructure Ireland

No objection in principle but concerns raised in relation to the following:

Official policy:

- N15 is part of the EU TEN-T Network, need to safeguard its strategic function in line with national & local policy in relation to logistics & safety.

- Spatial Planning & National Roads Guidelines seeks to avoid the creation of additional access points/generation of increased traffic from existing accesses (non-public road access), to national roads (speed limit 50kmh).
- This policy is reflected the County Development Plan.
- Note that the access to the site off the N15 is via the public road network.

National road network maintenance & safety:

- *Turbine haul route (N15/N56):*
    - Consult Roads Authority on any works affecting roads & junctions in terms of operational requirements (scheduling & costs etc.)
    - Works to roads & junction should comply with TII standards & be subject to a Road Safety Audit, road safety for all is paramount.
- *Structures:*
    - Obtain a permit for the movement of heavy vehicles [Road Traffic (Construction & use of Vehicles) Regs. 2003 – SI5 of 2003]
    - Assess structures along haul route to confirm capacity to accommodate heavy & wide loads, agree with the LA & refer to TII.
- *Cabling/trenching*:
    - Note absence of grid connection interactions with the national road network, and no concerns raised.

Conclusion:

- No objection in principle.
- The above issues require clarification and/or resolution.

4.2.4 Irish Water

No objection subject to the following:

- Attach a condition which ensures continuity of electricity supply to Irish Water infrastructure in the area that is powered from the same grid.
- Compliance with Irish Water standards, codes & practices.

4.2.5 Irish Aviation Authority

No objection subject to conditions related to:

- Agree an aeronautical obstacle warning light scheme.
- Provision of as-constructed coordinates along with ground and tip heights.
- Prior notification of crane erection and operation.

4.2.6 Geological Survey of Ireland

No concerns raised.

4.3 Transboundary Submissions

Environment, Marine & Fisheries Group and NI Environment Agency

Water Management Unit & Inland Fisheries (Drainage & water):

- All necessary permissions should be sought from relevant authorities and relevant UK/NI advice & guidance documents listed.
- Recommend use of SuDS to deal with site drainage.
- WC & associated storage tanks should be water tight.
- On-site drainage should prevent peat slippages & resultant water pollution.
- Protect water quality (oil storage, management of concrete & stockpiling).
- Comply with WFD obligations to protect downstream waterbodies.

Regulation Unit Land & Groundwater Team (Land, Soil & Air):

- No objection, satisfied with EIAR & no conditions recommended.
- No significant impact on cross border ground water resources.
- Satisfied with mitigation measures to prevent pollution.

Natural Environment Division:

Designated sites: site is hydrologically linked to River Foyle & Tributaries SAC & is adjacent to Killeter Forest & Lakes ASSI, which are of international & national importance. Potential impacts on the aquatic environment relate to:

- Contaminated runoff during the construction & operational phases at infrastructure within 50m of a tributary stream that flows through the site into Loughnaweelagh to Killeter Forest & Lakes ASSI.
- Peat slides causing degradation of habitat by smothering of vegetation, infrastructure passes through a moderately high-risk landslide risk zone c.200m upslope of Killeter Forest & Lakes ASSI, but EIAR risk is low.

- The final CEMP must be agreed with the competent authority, contain specific details to prevent pollution of watercourses via surface water, and mitigation measures should be fully implemented.

Bats: site lacks suitable bat foraging habitat & no significant impacts on bat populations in NI anticipated.

Birds: site comprises wet heath & blanket bog, adjacent to NI border, within 15km of Pettigo Plateau SPA & surrounding habitats include lakes & coniferous forests & satisfied with EIAR survey effort.

- **Hen harrier**: 2 x breeding within c.4km of site in NI in 2016 and survey area likely to be within their foraging range; breeding pairs & roost sites identified in vicinity but at a distance where the risk of disturbance was negligible.
- **Raptors:** several species observed**,** and proximity of proximity of Kestrel nest sites & territory to existing turbines suggests habituation.
- **Red grouse**: c.27 territories within 500m of site boundary including many within buffer of existing & proposed turbines; displacement will occur, but known to habituate & recolonize rapidly; no adverse impacts anticipated.
- **Curlew**: low numbers in surrounding area, 1x pair with c.1km of existing & proposed turbine arrays before 2018 & no fights recorded within 500m buffer, very low risk of disturbance, displacement or collision.
- **Snipe**: 35 territories recorded within the site & 500m buffers of existing & proposed arrays (4 of which overlapped with NI), at risk of displacement but surveys suggest a degree of habituation.
- **Golden plover**: 14 flights recorded during breeding season & 17 during winter, but none within 500m buffers during migration & nesting periods; area is not an important staging or winter area with low risk of collision anticipated.
- **Common sandpiper**: breeding around small loughs & habituated.
- **Whooper swans, Greylag geese & migratory waterfowl**: no records of major foraging or roosting within 2km radius of site, Whooper swan present at lakes 2-10km of site; small number of flights over site but none at rotor height.

- **Collision risk analysis:** carried out for 8 target species (raptors & waterbirds) with negible rick of collision predicted from the 13 turbines array; no collisions with existing 25 turbines recorded although query frequency & extend of carcass surveys; estimated collision risks lower for proposed versus existing turbines; note absence of risk assessment for Raven which is a very agile species and any mortality would be low.
- **Displacement:** majority of *Snipe* territories within 500m survey area could be impacted; accept that surveys indicate that habituation to existing turbines has occurred, but query the absence of pre-construction information from the original application which would allow for a more accurate estimation, satisfied with mitigation measures & provision of managed habitat as per the HMP; several passerine species recorded but only *Skylark & Meadow Pipit* in substantial numbers within site boundary & 500m buffer of the existing & proposed turbines, Skylarks do not tend to be displaced and whist Meadow pipits could be displaced there is extensive nesting habitat in the vicinity with no significant impacts on regional populations anticipated, satisfied with habitat maintenance & enhancement measures as per the HMP.
- **Cumulative impacts:** the reduced number of turbines will reduce the collision risks for sensitive species & it is unlikely that there would be a significant increase in overall in-combination effects with a 5km radius.
- **Habitat Management Plan (HMP):** contains mitigation measures for potential displacement impacts on breeding Hen harrier, Snipe & Golden plover, which will also benefit Red Grouse, Skylark & Meadow pipit; concerns raised in relation woodland planting along riparian corridors due to potential for providing cover & vantage points for predators of breeding waders, but not like to be significant given proximity to existing forest blocks.
- **Construction Management Strategy:** precautionary approach to siting of turbines & wider spacing will reduce barrier effects (Whooper swan); several other acceptable measures include works mainly outside breeding season, breeding activity surveys, minimise disturbance to Whooper swans around internal loughs, disturbance free zone around Ring ouzel

nesting areas, project ornithologist & species specific buffer zones around active nests (HH-500-750m, Snipe-400m & Curlew-800m) & nest boxes for kestrel.

- **Monitoring**: ongoing monitoring would be very useful in terms of assessing levels of species recuperation & habituation to windfarms, and request ABP to require a programme of bird monitoring, including walkover surveys and vantage point observations to be carried out over at least the first 5 years.
- **Carcass surveys**: the weekly searches for the carcasses of collision risk fatalities in hardstanding areas should be augmented by regular surveys of larger plots around each turbine using SNH 2006 methods (s.48-56).
- **Conclusion**: no significant threat to NI or trans-boundary bird populations or to the integrity of any designated sites in NI.

Rivers Planning & Advisory Unit: No objection. Must seek consent for any proposed works that might affect a watercourse in NI.

NI Water: No objection. No impacts on existing NIW infrastructure.

Roads Service: No objection. Requires operational details of NI roads to be used for the haul route, and should be consulted on (and agree) the Traffic Management Plan, including all infrastructure works & repairs to be at developers' expense.

Historic Environment Division: No objection. Complies with SPPS & PPS6 archaeological policy requirements.

Loughs Agency:

Noted potential impacts of windfarms on water quality:

- Obstruction to fish migration during & post construction.
- Disturbance to spawning beds during construction & timing of works
- Increased silt & sediments from construction works.
- Point source pollution incidents during construction.
- Drainage issues.

Advised the following:

- Oil & fuel should be stored in a bunded area (110% capacity of largest store) 100m from any watercourse (1:10,000 OS map); no vehicle maintenance within 100m of any watercourse; and maintain machinery & vehicles.
- Roadside drains should not intercept large volumes of water from ground above; all watercourse intercepted by access routes should be bridges or culverted; with no change to stream profile & fish movement unhindered.
- Consider floating roads where peat is 1m (or deeper); piling at turbine bases may be ok in deeper peat provided the base is 50m from watercourses & greater for fish sensitive waters.
- Avoid erosion of roadside embankments & cuttings by using intercepting trenches or terracing, slopes should be such as to encourage revegetation.
- Silt traps & settlement ponds should be utilises & maintained and ponds should take account of high precipitation events.
- Existing drainage channels should remain untouched and cement & wet concrete should be kept out of all watercourses (highly toxic).
- Track ruttings by machinery should be kept to a minimum with no sediment laden discharge or run-off from the site.
- Careful management of stockpiling of peat & other materials to prevent slippage or collapse adjacent to watercourses; seek to minimise excavations.
- Monitor surface water flows during construction & post construction.
- A suitably qualified person should be on site during the works to ensure:
    - All mitigation measures are implemented.
    - Continual assessment of effectiveness of mitigation measures.
    - Cessation of works in event of slippage.
    - Peat reinstatement in accordance with restoration plan.
    - Contact protocol for relevant statutory bodies.
- No discharge of storm water to nearby watercourses unless first passed through pollution interceptors & flow attenuation measures.
- Discourage use of Flocculants.

- Provide details of Emergency Environmental Spill Response document.
- Offence under S.41 of the Foyle Fisheries Act (1952) to cause pollution which is detrimental to fisheries.

Derry & Strabane District Council:

- The 180m high turbines would be more appropriate in a marine setting.
- Request consideration of effects on TV, mobile phone & internet connections.
- Request full remediation of site after removal of turbines & infrastructure.
- There should be no impacts on residential amenity.

***Derry City & Strabane District Council Environmental Health Service**:*

- Note EIAR noise impact & cumulative assessments within RoI & NI and location of T2 within c.150m from NI border.
- Confirm absence of NI dwellings & other sensitive receptors within 4-5km.
- Nearest NI windfarms at Meenakeeran (c.5km, 4 x turbines & not yet constructed) & Crighshane (c.10km, 14 x turbines & operational); and cumulative noise impacts highly unlikely.
- Useful if the EIAR could provide cumulative noise predictions for the proposal and any other windfarms contributing to noise within 10dB for the most exposed noise sensitive properties on the NI side of the border.
- Appropriate noise limits should be applied to NI properties (35dB/ Background + 5dB (Daytime) and 43dB/Background + 5dB (Night-time).
- If separation distances are correct then noise impacts are highly unlikely.

RSPB*:*

- Comments requested but unable to oblige due Covid-19 related pressures.

4.3 Observers

No observations from members of the public received.

4.4 Applicant's response to submissions

The applicant submitted a detailed response to the concerns raised by the Department of Culture, Heritage and the Gaeltacht (NPWS) in relation to the NIS, EIAR and CEMP. The concerns related to survey results (historic & current), data analysis, presentation of results, mapping, proposed mitigation measures and conclusions reached. The applicant's response mainly provided a clarification and/or elaboration of this information and the supporting documents were expanded accordingly (text & maps). The applicant's response did not raise any new issues or contain any significant new information that would have warranted a circulation of documents or re-advertisement of the project. The response is summarised below.

1. The NIS

General:

- NIS updated to include the CEMP & relevant sections of EIAR.
- Elaboration of construction & mitigation methods for use of concrete.

Water quality:

- NIS s.8.1.2 contains details of mitigation to avoid water quality impacts.
- The 1.15km section of overhead cable to E of Lough Slug will be replaced under existing access tracts to avoid damage to peat processes.
- NIS s.3.3 updated to include more detailed descriptions of watercourse crossings & environs and NIS s.8.1 includes more details of embedded design mitigation (project & haul routes), with details in Maps 1, 2 & 3.
- No significant issues related to most water crossings, new access track at T13 will culvert a drain that flows into Derg River, and works to existing water crossings along the haul route that are tributaries of Clogher River.
- EIAR s.9.4.4.5/6 updated to include detailed assessment of potential impacts on water quality in relation to water crossings, and additional information provided for storm discharge rates & possible diversions.
- Water cross design will be site specific, none are in ecologically sensitive areas, but there is potential downstream impacts on water quality and the drainage & culverts solutions will take account of this (haul routes & T13).

Birds:

- EIAR TAs 7.1, 7.2 & 7.3 contain detailed & robust bird survey data which now forms part of the updated NIS, including details of foraging ranges.
- NIS Appendix 3 expanded to include more details of foraging ranges for several SPA bird species, which it concludes are beyond SPA connectivity distances, and re-emphasises the proposed reduction in turbine numbers.

Hydrology & hydrogeology:

- NIS s.8.1 expanded to include more details of construction phase mitigation, all settling ponds & check dams will remain during operational phase, and no drainage problems associated with the existing windfarm.
- Historical & current data indicate low compaction risk for drainage from floating tracks, average peat depth is c.2m & deep peat are avoided.
- Hydrology & drainage not affected by existing windfarm infrastructure.
- Mitigation measures for the release & transport of suspended solids will protect against entrainment, excessive discharge rates, erosion & flooding.

Clogher River:

- NIS s.3.3 deals with the culverting of a tributary of Clogher River along haul routes, this river merges with the Lowerymore which drains into Lough Eske (SAC) and it has Good WFD status.

Cumulative assessment:

- NIS expanded to utilise relevant sections of the EIAR & CEMP which deal with cumulative impacts & existing operational windfarm will be removed before the new windfarm is constructed.
- Windfarm not located within a European site and the nearest SPAs are located a distance away and no key species (White-fronted goose, Herring gull & Black-headed gull) recorded over or on the site.
- Post hoc examination indicates that the repowered turbines represent no significant risk of cumulative impacts to these species, and the risk will be reduced by the reduction in turbine numbers.

2. The EIAR:

- Future decommissioning will have similar but lesser environmental impacts as decommissioning the existing windfarm given the reduction in turbine numbers, and the current impacts are not predicted to be significant.
- In terms of the Draft HMP & biodiversity, 2 new tables have been provided which summarise: - the predicted area lost & proposed mitigation measures for all affected species & habitats (7); and habitat restoration & enhancement areas (7) along with a summary of management measures.
- EIAR s.12.8 states that carbon savings (taking account of construction) would amount to c.102,087 tones/annum and that active blanket bog in pristine condition has a total carbon sink balance potential of c.-30gC $m_2$yr indicating that on balance, more carbon will be saved than lost.
- Only minor road works proposed along the haul route outside the site.
- Detailed monitoring & reporting will be put in place for the NHA and the restoration/enhancement areas contained in the Draft HMP, and also for the relevant mitigation measures during & after construction, and remedial actions will be undertaken accordingly.
- Clarity provided in relation to apparent contradictory statements in relation to operational impacts on drainage & erosion, which are not significant.
- More detailed & focused water balance assessment provided for acute storm events during dry and wet conditions; net increase in hydraulic loading during an acute storm event as a result of the development is estimated to be very low and imperceptible with negligible impacts on water quality, hydrology, habitats & species predicted.
- Any potential compacting of peat under the existing floating roads has not resulted in any significant adverse on the hydrological regime at the site.
- More detailed & focused assessment of changes in run-off in identified catchments/sub-catchments as a result of the new hardstanding & reinstated areas which indicated that although there would be some increase in run-off area, the changes would be very low & imperceptible.
- Cumulative effects on hydraulic loading in catchment areas have been assessed in EIAR S.9.3.7 as imperceptible to slight, but will mitigated for & reduced by other mitigation measures (e.g. run-off attenuation).

- Will adhere to SNH guidance for developments on peatlands & decommissioning & restoration plans for windfarms.
- In relation to restoration, the existing windfarm has not affected the hydrological or hydrological regime at the site and the proposed attenuation measures will provide a positive impact by enhancing environmental conditions in terms of peat & blanket bog formation.
- The EIAR monitoring regime or habitats and species will be in line with baseline assessments, relevant guidance and the aims, conclusions & recommendations of the previous monitoring report (including vegetation recovery, erosion, silt mobilisation & hydrological changes).

3. Birds:

- Viewshed & flight maps provided to illustrate EIAR bird survey data.
- Assessment of historic & current bird survey data (existing & proposed windfarms) provided to help assess the impact on the existing project on sensitive breeding & overwintering birds: -
    - *Species recorded & linkages to operational windfarm* - red grouse, common sandpiper, curlew, golden plover, whooper swan & red grouse all consistently recorded present, some breeding & many well habituated.
    - *The duration, time-frame & types of published studies* - most studies are relatively recent, most state that construction disturbance declines over time and that turbines have no long-term effects irrespective of size & numbers, with few additional adverse impacts on birds from re-powering.
    - *The timescales & types of likely effect & analysis* - no intervening bird monitoring between construction & current surveys, original EIS data did not contain spatial, temporal or abundance data, and subsequent monitoring did not occur; however operational collision monitoring since 2010 has recorded no bird collisions to date.
    - *Availability of operational monitoring data from SPR* - as above and not possible to provide a comparison of historic & current bird surveys, and note change in methodologies over time.

- *The reference baselines* - the existing operational windfarm provides the baseline scenario.

- Windfarm located outside SPA boundaries and various best practice avoidance & mitigation measures will protect mobile species; impacts on Annex 1 species identified during surveys have been fully analysed; post hoc assessment for several species conclude that potential displacement effects will be moderate/slight during the construction (HH, GP & WS) and operational (GE, HH, GP &WS) phases; and project will exceed provisions & requirements of Article 4.4. of the Birds Directive in relation to avoiding the pollution or deterioration of habitats outside SPAs.

4. The CEMP:

- Final CEMP will contain ecological protection & management measures.
- Project Ecologist will have precise terms & conditions and set tasks relate to construction surveys, monthly water level measurements, selection of sections of bogs for re-wetting, monitoring SuDS, maintaining records & reporting to the Civil Contractor (who will decide on any subsequent actions), and liaise with OPW, IFI & NPWS as necessary.
- Rainfall thresholds will be established to ensure unfavourable meteorological conditions are avoided during construction & an emergency response system will be developed.

5.0 PLANNING ASSESSMENT

The main planning issues arising in this case are:

1. Compliance with climate change & renewable energy policy
2. Compliance with planning policy
3. Carbon sequestration
4. Other issues

- Section 6.0 of this report deals with Environmental Impact Assessment.
- Section 7.0 of this report deals with Appropriate Assessment.

5.1 Compliance with Climate Change and energy policy

The proposed windfarm would be compatible with European and National climate change and renewable energy policies as summarised in section 3.0 above. It would contribute to the achievement of European and National renewable energy targets, and in particular the objectives of the Climate Action Plan (2019) which seek to realise a 30% reduction in greenhouse gas emissions and increase reliance on renewables from 30% to 70% (12GW) by 2030, of which 8.2GW could be met by on-shore windfarms. Section 11 of this Plan also identifies a range of measures to deliver targets for a reduction in greenhouse gas emissions including the better management of peatlands. Compliance with these measures will be addressed in more detail in section 5.3 below in relation to carbon sequestration, whist other practical issues related to peatland management (including soils, hydrology, biodiversity, peat stability & bog rehabilitation) will be addressed in the relevant sections of the Environmental Impact Assessment chapter of this report.

5.2 Compliance with planning policy

5.2.1 National planning policy

The proposed windfarm would be compatible with national planning policy as set out in the National Planning Framework Plan, 2018-2040 which recognises the need to

move toward a low carbon and climate resilient society with a sustainable renewable energy supply. The 2006 Wind Energy Development Guidelines (and 2019 Draft amendments) advise that a reasonable balance must be achieved between meeting national policy on renewable energy and the proper planning and sustainable development of an area. The Guidelines also state that projects should not adversely affect any European sites, have an adverse impact on birds, give rise peat instability or adversely affect drainage patterns, cultural heritage, sensitive landscapes, the local road network or residential amenity. These practical issues will be addressed in more detail in the relevant sections of the Environmental Impact Assessment and Appropriate Assessment chapters of this report.

5.2.2 Regional planning policy

The proposed windfarm would be compatible with regional planning policy as set out in the Regional Spatial & Economic Strategy for the North West Region, 2022 which seeks to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the sustainable expansion of the transmission network.

5.2.3 Local planning policy

The proposed windfarm would be compatible with the general climate change and renewable energy policies and objectives of the current Donegal County Development Plan, and in particular Policy CS-O-17 which seeks to promote sustainable development, including measures to reduce energy demand and greenhouse gas emissions, and adapt to climate change.

However, following a Judicial Review under 2018/533 certain sections of the Wind Energy standards at Part B: Appendix 3, Development Guidelines and Technical Standards and Map 8.2.1 were ordered to be deleted and/or removed from the County Donegal Development Plan 2018-2024. Although Policy E-P-12 states that the Council seeks to consider the development of appropriate new wind energy developments in areas identified in Map 8.2.1, the ordered deletion and/or removal of Map 8.2.1 renders this policy un-implementable. Therefore, the Development Plan

does not contain any policies, objections or standards for the preferred geographical location of windfarms (other than those listed in section 6.5 which continue to protect Glenbeigh National Park, Donegal Airport, FWPM catchments and European sites). Notwithstanding this absence of a spatial planning policy framework for windfarms, it is noted that the proposed windfarm would be mainly located within the site of an existing permitted operational windfarm that dates from the mid-1990s.

The Development Plan also contains a plethora of policies and objectives which seek to protect the environment, European sites, biodiversity, scenic landscapes, views, residential amenity and cultural heritage. These issues will be addressed in the relevant Environmental Impact Assessment sections and Appropriate Assessment chapters of this report.

5.3 Carbon sequestration

The proposed windfarm would be located within a peatland environment where a balance needs to be struck between the loss of the carbon storage capacity of the bog and the generation of renewable energy from non-carbon sources. As previously stated, the Climate Action Plan, 2019 seeks to realise a 30% reduction in greenhouse gas emissions and increase reliance on renewables from 30% to 70% (12GW) by 2030, of which an estimated 8.2GW could be met by on-shore windfarms. Section 11 of the Plan identifies a range of measures to deliver targets for a reduction in greenhouse gas emissions, including the better management of peatlands which cover 21% of our land area and represent 64% of our total soil organic carbon stock. The Plan sets out several measures to manage this carbon sink, including compliance with measures outlined in the National Peatlands Strategy (2015) and the National Raised Bog SAC Management Plan (2017-2022) in relation to the management of peatlands (summarised in section 3.0 above). The level of project compliance with the Climate Action Plan measures is assessed below.

Measure: Restore/rewet all raised bogs designated as SACs and NHAs within 3 cycles of the *National Raised Bog SAC Management Plan 2017-2022*. Such restoration measures and hydrological management of our protected peatlands will halt and reduce peat oxidation and carbon loss.

- This measure does not apply as the habitats within the site mainly comprise a mosaic of blanket bog and heathland habitats (and not Raised bogs) which form part of the Barnesmore Bog NHA. The NHA was designated after the existing windfarm was constructed in the mid-1990s, and the site is not covered by an SAC designation.

Measure: Undertake further research to assess the potential to sequester, store and reduce emissions of carbon through the management, restoration and rehabilitation of peatlands as outlined in the *National Peatlands Strategy*.

- This document sets out a national strategy for the sustainable management of peatlands and section 5.3 deals with Peatlands and Climate Change. It describes the role of natural undrained peatlands as carbon stores and it references the EPA report *Carbon Reserve -The Potential of Restored Irish Peatlands for Carbon Uptake and Storage* in terms of how peatland management might be used to enhance carbon sequestration and reduce emissions. It provides advice in relation to the management of non-designated peatlands to halt carbon loss and recommends restoration measures to stabilise eroding surfaces, re-establish peatland vegetation and encourage waterlogged conditions to enable peat formation. As previously stated, the site comprises a mosaic of peatland habitats that form part of the Barnesmore Bog NHA, the site is occupied by an existing operational windfarm, and the peatland habitat conditions range from undisturbed to disturbed (including turf cutting). The applicant has submitted a draft Habitat Management Plan which seeks to restore and enhance the peatland habitats, and as a consequence their carbon sequestration capabilities.

***Measures*:** The remaining measures identified in subsection 11.3.6 of the Climate Action Plan are concerned with policy and research and are not project or site specific, and compliance with the remaining measures is not applicable.

Discussion:

As previously stated, the proposed windfarm would contribute to the achievement of the renewable energy target for on-shore wind contained in the Climate Action Plan 2019. The existing operational windfarm which comprises 25 x turbines has made a significant non-carbon based contribution to the national grid since its construction in

the mid-1990s. The proposed development of 13 x turbines which would contribute in excess of 75MW to the national grid per year and in excess of 2,250MW over 30-years. The predicted carbon savings associated with the proposed windfarm (taking account of the 2-year construction/excavation period) would amount to c.102,087 tones/annum which equates to more than 3 million tonnes of carbon over 30 years.

Notwithstanding the difficulties associated with calculating the loss of stored carbon as a result of the works, which is affected by several variables including the varying ecological and hydrological condition of the peatland, on balance, I am satisfied that more carbon would be saved than lost. Provided that the surrounding peatlands (c.153ha) are protected and the degraded areas are rehabilitated and restored successfully in accordance with the rehabilitation measures contained in the draft Habitat Management Plan, the remaining organic soil resource would continue to sequester carbon. Any spatial loss of this storage capacity because of the construction of the turbines and windfarm infrastructure (and associated buffers) would be minuscule when compared to the anticipated carbon offset against the operational windfarm.

Conclusion:
Having regard to the forgoing, I am satisfied that there would be significant savings over the 30-year lifespan of the project when balanced against the loss of stored carbon as a result of the excavation works, in line with national policy and guidelines.

5.4 Other planning issues

Residential amenity: The proposed development would not overlook, overshadow, or result in a loss of privacy to any nearby houses, and there would be no significant loss of residential amenity. There would be some disturbance during the decommissioning and construction phases in relation to works and traffic movements, and there is potential for disturbance during the operational phase in relation to noise, shadow flicker and visual intrusion. Refer to EIA section 6.0 for a more detailed assessment of potential impacts on population and human health, the landscape, traffic, and air and climate.

Visual amenity: Having regard to the scale and location of the proposed development in a remote upland rural area, and the height of the replacement turbines, the windfarm has the potential to impact the visual amenities of the area in relation to landscape character, protected views and scenic routes. Refer to EIA section 6.4 for a more detailed assessment of potential impacts on the landscape.

Movement and access: The proposed development has the potential to impact on the national, regional and local road network during the decommissioning and construction phase mainly in relation to the removal and delivery of the windfarm components, the delivery of construction materials and worker vehicles. Refer to EIA section 6.5 for a more detailed assessment of potential impacts on the road network.

Flood risk: The proposed development has the potential to affect peat hydrology and surface water flow patterns in the surrounding area during the decommissioning, construction and operational phases. Refer to EIA section 6.8 for a more detailed assessment of potential impacts on the water regime.

Environmental services: The sanitary arrangements are considered acceptable.

Grid connection: The applicant has submitted sufficient information with the planning application, EIAR and NIS to enable the Board to undertake a cumulative impact assessment of any impacts on the environment, and likely significant effects on European sites, of the overall windfarm in-combination with the partial under grounding of the grid connection, other windfarms, and plans or projects.

Suggested conditions: Have been addressed in the relevant sections of the report.

Community benefit: The management of any fund should be agreed with the PA.

Competency: I am satisfied that the EIAR surveys and data analysis have been undertaken by suitably qualified experts in their relevant fields.

Financial contributions and bonds: The standard conditions should be attached.

6.0 ENVIRONMENTAL IMPACT ASSESSMENT

6.1 Introduction

The proposed strategic infrastructure development would comprise the replacement of an existing 25 x turbine windfarm with a new 13 x turbine windfarm, which would have a generating capacity in excess of 75MW.

6.2 Compliance legislative requirements

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

- Non-Technical Summary
- Main Statement
- Photomontages
- Technical Appendices

I am satisfied that the information contained in the EIAR complies with article 94 of the Planning and Development Regulations 2000, as amended, and the provisions of Article 5 of the EIA Directive 2014.

I have carried out an examination of the information presented by the applicant, including the EIAR, and the submissions made during the application. A summary of the results of the submissions made by the planning authority, prescribed bodies and NI Office has been set out at Sections 4.0 to 7.0 of this report. No observations from members of the public were received.

The EIAR describes the proposed development, including information on the site and the project size and design. A description of the main alternatives studied by the developer and alternative locations considered is provided along with the reasons for the preferred choice. The impact of the proposed development was assessed under all the relevant headings with respect to population and human health; noise, shadow flicker, air and climate; biodiversity; landscape; land, geology and soils;

hydrology and hydrogeology; roads and traffic; material assets and cultural heritage; and interactions of impacts. Mitigation measures are set in each chapter and summarised in Appendix 15.1. The content and scope of the EIAR is considered acceptable and in compliance with Planning Regulations. No likely significant adverse impacts were identified in the EIAR post mitigation.

The EIA identifies and summarises the likely significant effects of the proposed development on the environment with respect to several factors. It identifies the main mitigation measures and residual impacts following mitigation, it assesses cumulative impacts, and it reaches a conclusion with respect to each of the factors. The EIA also considers the risks associated with major accidents and/or disasters.

With regard to the requirements of Article 111 of the regulations, I consider that the submissions are generally in accordance with the requirements of Article 94 of the Planning and Development Regulations 2001, as amended. Cumulative impacts with other plans and projects in the area are not considered likely to be significant.

6.3 Consideration of Reasonable Alternatives

Chapter 3 of the EIAR dealt with the consideration of alternatives. These included the “Do -nothing Scenario” whereby the existing 25 x turbine windfarm would continue to operate perpetually. The main alternatives considered related to location, site layout and design, which were assessed against key environmental considerations related to the landscape, views, peat stability, water quality, ecology and birds. Other energy generating alternatives including solar power, hydropower and alternative turbine designs (i.e. vertical axis turbines) were not considered viable for the site. The EIAR concluded that proposed development would represent the best option having regard to the presence of an existing windfarm and associated infrastructure on the site, and the availability of an existing grid connection.

6.4 Landscape (Visual Impact)

6.4.1 Project description

The proposed development would be located within a remote upland rural area which is mainly characterised by peatlands, upland lakes and rocky outcrops with some cutover bog and forestry. The windfarm project would comprise the decommissioning and removal of 25 existing wind turbines (c.60m high) and the reinstatement of some associated and redundant infrastructure. It would also comprise the construction of 13 new turbines (c.180m high), met mast, temporary construction compound, enlarged substation compound and energy storage unit, along with new and upgraded internal access tracks, and road works and junction upgrades along the local road network. The turbines would be mainly located in the N, E and S sections of the site around the centrally positioned Lough Golagh. The turbines would be relatively evenly distributed throughout this area, proximate to the sites of the existing turbines and mainly located on open peatland. The upgraded substation, temporary construction compound and energy storage unit would be located in the SE section of the site and the met mast would be located in the N section. A section of the existing overhead 110kV line, which traverses the S section of the site and extends W to the Clogher substation, would be undergrounded.

6.4.2 Locational context

The c. 997ha elevated site occupies an attractive scenic location to the NE of Donegal Town and SW of Ballybofey/Stranorlar, and it is located to the immediate W of the Border with Northern Ireland. The site is located to the E of the N15 which traverses Barnesmore Gap which is flanked on either side by mountains. The undulating site is mainly characterised by peatlands and upland lakes, and the site levels vary from c.300mOD to c.398mOD. Small sections of the site are occupied by commercial conifer plantations and turbary turf cutting. The lands are traversed by a network of streams that mainly drain to the centrally located Lough Golagh, and hence to the Lowerymore and Derg/Glendergan Rivers to the W and SE. There are several existing operational windfarms in the wider area on both sides of the NI

Border and the Clogher substation is located to the W. Barnesmore Village is located to the SW and there are several dispersed houses in the vicinity of the N15.

6.4.3 Environmental Impact Assessment Report

Chapter 11 of the EIAR [and EIAR Volume III & IV (Appendix 11.1)] dealt with landscape and potential visual impacts. Baseline conditions were described and a visibility analysis was undertaken for a 20km radius of the site. The analysis included the establishment of a Zone of Theoretical Visibility (ZTV), Theoretical Visual Intensity (TVI), Route Screening Analysis (RSA) and Photomontages, along with a Viewpoint Assessment Summary, an Assessment of Landscape and Visual Impacts and a comparative analysis of the existing and proposed windfarms. Some 29 viewpoints were assessed which represented views from Protected Views and Prospects, Scenic Amenity Areas and sensitive Landscape Character Areas, as well as the nearest houses, the main road network, scenic and amenity routes and the wider rural environment. Cumulative Landscape and Visual Effects Assessments were also undertaken which included several other operational windfarms in the wider area (c.30km). The EIAR Residential Visual Impact Assessment assessed the potential impacts on c.51 houses located within a 4km radius of the windfarm and this issue is addressed in more detail in section 6.6 below.

The EIAR stated that the windfarm has been designed to minimise landscape and visual effects as far as possible, and noted that it would replace an existing operational windfarm which has no end of life date. It stated that the scale of visual change would mainly range from Moderate at three Viewpoint locations (VP5-N15 scenic view at lough Mourne; VP9-Blue Stack Way at Greenan; and VP14- Blue Stack Way at Lough Eske), to Moderate-slight to Imperceptible at the remaining 26 Viewpoint locations, with the impact diminishing with distance. It also concluded that although the development will give rise to increased landscape, visual and cumulative impacts relative to the existing operational windfarm, there are balances afforded by the fewer/taller turbines.

The EIAR stated that the separation between the Protected View from along the N15 across Lough Mourne to the NW taken in conjunction with the siting and location of

the turbines would not detract from the view along Barnesmore Gap and the Blue Stack Mountain EHSA to the W would not be adversely affected. It predicted minor visual impacts on the area to the W of the site within which a number of houses are located, although the impact would be mitigated by the distance, the orientation of the houses, the presence of screening, the relationship between the turbines and the expansive scale of the landscape. It concluded that no significant effects would occur for road users or users of recreational routes in the wider area, that there would be no significant cumulative effects and that the visual impacts would diminish with distance. The EIAR did not predict any significant adverse visual impacts on the wider area, either for the windfarm on its own or cumulatively with other windfarms, notwithstanding the increase in height and visual exposure, partially as a result of the undulating nature of the landscape and the avoidance of ridgelines.

6.4.4 Existing windfarm

Planning permission was granted in 1997 for the existing 25 turbine windfarm on the subject site at Barnesmore and the details of PL.05.098236 are summarised in section 1.5 above. Planning permission is now being sought to remove the existing 25 turbines and replace them with 13 new turbines. The proposed turbines would be located in approximately the same positions as 13 of the existing 25 turbines and at a similar distance from the site boundaries, dwelling houses and the N15. There would be a greater range in separation distances between the proposed turbines than under the existing layout and there would be some variations in site levels. It is noted that the main difference between the existing and proposed windfarms relates to the increase in turbine height from 60m to 180m, and the effect that this would have on the surrounding landscape and visual amenities.

6.4.5 Policy context

In relation to the current County Donegal Development Plan, the site and environs lie within LCA 41 which comprises the Croagnameal Border & Uplands and the landscape is described as a “remote area of primarily upland mountainous blanket bog and mountain lakes with significant areas of commercial forestry, particularly along the eastern boundary within NI”. The proposed development would lie within

an Area of High Scenic Amenity and to the S of an Area of Especially High Scenic Amenity, and there are several protected Views & Prospects in the vicinity, including from along the N15 to the NW and Lough Derg to the SE.

Objectives NH-O-4 & 5 seek to ensure the protection and management of the landscape (including views, prospects and scenic amenity areas). Policy NH-P-6 seeks to protect Especially High Scenic Amenity areas whilst Policy NH-P-7 seeks to facilitate development in areas of High & Moderate Scenic Amenity that integrates with the character of the landscape. Policies NH-P-13 and 15 seek to protect, conserve & manage landscapes, having regard to the nature of the proposed development and to safeguard prominent skylines and ridgelines, from inappropriate development. Policy NH-P-17 sets criteria for the consideration of development proposals in such areas (related to their importance, recent developments in the area, significance of intrusion and whether the view would be materially altered by the development).

The site is also located to the E of the N15 which traverses the dramatic Barnesmore Gap that is flanked on either side by mountains (Barnesmore and the Blue Stacks) and the Lowerymore River runs parallel to the N15 through Barnesmore Gap towards Lough Eske. The lands to the NW and SW of the N15 are designated as Especially High Scenic Amenity Areas and there are several Protected Views and Prospects from along the N15 to W of the site. Sensitive views towards the site include those from along the N15 corridor and Barnesmore Gap to the SW and NW, from Lough Eske and the Blue Stacks Way to the W, and from the monastic pilgrimage settlement at Lough Derg to the S.

In relation to Northern Ireland, there are several Scenic Routes and protected views located within a 30km radius of the windfarm, the Sperrin AONB is located to the NE and a section of the Killeter Forest ASSI (Nature Reserve) adjoins the NE section of the site. Planning policy with respect to assessing the visual impacts of windfarms is contained in Planning Policy Statement 18 – Renewable Energy (Wind Energy Development on NI's Landscapes).

6.4.6 Assessment

I surveyed the wind farm site, the surrounding area and the wider regional and local road network in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the EIAR visual impact studies which are summarised in section 6.4.3 above. I also had regard to the concerns raised by the Observers which are summarised in section 4.0 above. The Observers included Derry & Strabane District Council who stated that the 180m high turbines would be more suited to a marine location. I also had regard to relevant national, regional, and local planning policy, which is summarised in Section 3.0, and to the presence of an operational windfarm on the site.

Wind turbines, by virtue of their nature, height, and scale, will have an impact on the landscape. The proposed windfarm would be located within a remote upland area that is far removed from any built-up areas, the settlement pattern of dwelling houses to the W is mainly dispersed and low density and the nearest houses are mainly located in excess of 2km of the turbines, and the mountains themselves provide for a high degree of natural screening. The proposed turbines would be dispersed throughout the site to take account of the topographical features of the landscape and they mainly avoid ridgelines. Several of the turbines would be located close to the sites of the existing turbines in the N section of the site (T1, T2, T3, T5, T6, T7 & T8) whist the remainder would occupy new positions in the S and E sections of the site (T4, T10, T11, T12 & T 13), except for T9 which would be located close to the existing T23 to the S of Lough Golagh.

N of Barnesmore Gap:

EIAR Viewpoint nos. 5, 6 & 8 deal with views from along the N15 and local roads to the NE of Barnesmore Gap towards the site of the proposed windfarm. The Blue Stack Mountains are located to the W of the N15 whilst Lough Mourne and Croaghonagh Bog are located to the E and SE of the N15. The uplands to the NW and SE of the N15 are designated as an Area of Especially High Scenic Amenity (EHSA) and this includes The Blue Stacks, Lough Mourne, Croaghonagh Bog and Barnesmore Mountain. The intervening lands between Lough Mourne and Barnesmore Mountain are designated as an Area of High Scenic Amenity (HSA) as

are the lands within which the windfarm is located. The N section of the windfarm site borders the EHSA Area.

EIAR VP5: The view from the NE corner of Lough Mourne along the N15 is a Protected View towards Barnesmore Gap and adjacent mountains on the E side of the Gap. The proposed windfarm would be located within the approximate centre of this Protected View. The upper sections of the proposed 180m high turbines (nacelle and/or blades) would be more visible than the existing turbine array when viewed from the N of Lough Mourne when travelling S along the N15 towards Barnesmore Gap. Although the visual impact on the surrounding scenic landscape and Protected View would be more dominant than under the existing arrangement, having regard to the substantial separation distance, the impact would not be significantly adverse.

EIAR VP6 & VP8: These views are from along local roads to the E of the N15 in the direction of Castlederg, at Meenbog and Toughboy. These locations (and their environs) are not covered by any sensitive designations although the views extend SW across the EHSA Area towards the windfarm site, however the existing c.60m high turbines are not visible from either of these viewpoints. The proposed windfarm would be located within the approximate centre of Viewpoint 6 and 7 and the upper sections of several of the c.180m high turbines (nacelle and/or blades) would be visible from these locations, however the visual impact on the surrounding landscape and views would not be significant.

Other views along the N15: The proposed turbines would be intermittently visible from along the N15 when travelling SW towards Barnesmore Gap however none of the views along this section of the N15 are protected. Although the upper sections of several of the turbines (nacelle and/or blades) would be visible, there would be no significant adverse visual impacts on the view of Barnesmore Gap or any other sensitive landscapes.

S of Barnesmore Gap:

EIAR Viewpoint nos. 4, 10, 11, 15 and 16 deal with views along the N15 and local roads to the SW of Barnesmore Gap towards the site of the proposed windfarm. The Blue Stack Mountain range and Lough Eske are located to the W and NW and of the N15. The Blue Stacks are designated as an Area of Especially High Scenic Amenity

(EHSA) as are the lands to the immediate W of Lough Eske, whilst the remaining lands around the Lough are designated as an Area of High Scenic Amenity (HSA). There are several Protected Views from along the SW sections of the N15 towards Barnesmore Mountain, Barnesmore Gap and the Blue Stack Mountains.

EIAR VP4 and VP11: These viewpoints are from along the N15 in the vicinity of Biddy O' Barnes public house. Although these locations are not covered by any sensitive scenic designations the EHSA Area is located to the W, N and E. There is a Protected View in the vicinity of these Viewpoints along the N15 which extends to the NW, N, NE and E, and across the S section of the EHSA Area that is located to the immediate N of the windfarm site. The proposed windfarm would be located within the approximate centre of EIAR VP4 and VP11 which extend SE towards the windfarm site. The upper sections of several of the existing c.60m high turbines are visible from these viewpoints and the upper sections of some of the c.180m high turbines (nacelle and/or blades) would be also visible from these locations. However, the visual impact on the surrounding landscape would not be significant and the Protected View E from along the N15 towards the site would not be significantly affected as the turbines (T1 & T5) would be located on the outer periphery of this viewpoint and they would be shielded from view by the intervening upland terrain.

EIAR VP10, VP15 and VP16: These views are from along local roads to the SW of the site in the vicinity of the N15 at Tawwnaghlahan, Birchhill and Barnesmore Village towards the site. These locations (and their environs) are not covered by any sensitive designations and the viewpoints are not Protected Views. The existing c.60m high turbines are either not visible or barely visible from these viewpoints. The upper sections of several of the c.180m high turbines (nacelle and/or blades) would be more visible from these locations and they would constitute a more dominant feature on the landscape, however the visual impact on the surrounding landscape and views would not be significant.

Other views: The proposed turbines would be intermittently visible from along the surrounding road network an amenity area to the SW of the site around Donegal Town and environs (VP18, VP20, VP21, VP22, VP23 & VP24). None of the views from these viewpoints are protected. Although the upper sections of several of the existing c.60m turbines are visible from most of these locations, a greater proportion

of the upper sections of several of the proposed c.180m high turbines would be highly visible. Although this would constitute a more dominant feature on the surrounding upland landscape, the visual impact would diminish with distance.

W of Barnesmore Gap:

EIAR Viewpoint nos. VP9 and VP14 deal with views to the W of the N15 and local road network towards the site of the proposed windfarm. This area includes Burns Mountain to the far W which forms part of the Area of Especially High Scenic Amenity (EHSA) and Lough Eske to the immediate W of the N15 which is surrounded by lands which are designated as EHSA or HSA Areas. The Protected View from the N15 extends NW, W and SW across Lough Eske and not towards the proposed windfarm site and the Protected Views to the far NW of the Lough extend N towards the Blue Stacks.

EIAR VP9 and VP14: These viewpoints are from the NW and W of Lough Eske towards the site of the proposed windfarm. VP9 is located along the Bluestack Way at Greenan and this view extends across the N section of Lough Eske towards the windfarm. VP14 is located along the SW shore of Lough Eske (S of Harvey's Point) and this view extends across the S section of the Lough towards the site. None of the views from these viewpoints are protected. Although the upper sections of several of the existing c.60m turbines are marginally visible from these locations, a greater proportion of the upper sections of several of the proposed c.180m high turbines would be highly visible. This would constitute a more dominant feature on the surrounding upland landscape when viewed from the scenic locations at Lough Eske and Bluestack Way, and the visual impact of the windfarm would be moderately significant when viewed from these areas.

S of site (Lough Derg):

EIAR Viewpoint nos. 26 and 26a deal with views N from Lough Derg and Station Island towards the site of the proposed windfarm. The Lough Derg Visitors Centre is located within lands designated as an HSA Area and Station Island is a place of religious pilgrimage. The upland area to the immediate N of the lough forms part of the EHSA Area, and the lands beyond, within which the proposed windfarm would be located, are designated as a HSA Area. There are several Protected Views from

Lough Derg to the W and N of the lough and the Protected View to the N extends across Lough Derg towards the EHSA area and the windfarm site beyond.

EIAR VP26a: The view from the shore of Lough Derg (Visitors Centre) across the lough forms part of the Protected View towards the upland EHSA area with Station Island to the W. The proposed windfarm would be located to the right of VP26a and the Protected View. The upper sections of some of the existing turbines at the neighbouring Meenadreen Windfarm extend over the ridgeline to the far W. The upper sections of several of the proposed c.180m high turbines would be visible to the E of the view ranging in magnitude from blade tips only, to blades and nacelles. This could be in contrast to the existing c.60m high turbines on the site which are not visible from this location. However, the visual impact of the proposed turbines on the surrounding scenic landscape and Protected Views in-combination with their proximity to the heritage site Lough Derg at would be direct but not significantly adverse.

EIAR VP26: The view from the Station Island (Pilgrimage Centre) on Lough Derg across the lough does not form part of the Protected View towards the upland EHSA area, although it lies within it. The proposed windfarm would be located in the approximate centre of VP26. The upper sections of some of the existing turbines at the neighbouring Meenadreen Windfarm extend over the ridgeline to the far W. Although the existing c.60m high turbines at Barnesmore Bog are not visible from this location, the blade tips of several of the proposed c.180m high turbines would extend over the ridgeline. However, having regard to the low magnitude of the visual intrusion, the impact of the proposed turbines on the surrounding scenic landscape and the VP26 would not be significant.

Other Views:

Several of the EIAR Viewpoints deal with more long-distance views towards the proposed windfarm from the outer perimeter of the 20km radius, none of which are Protected Views. These include views from the far N of the site (VP1, V3, & VP2), the far W (VP7 & VP12), the far S (VP27, VP28 & VP29) and far E of the site (VP13, VP17 & VP25). The visual impacts of the turbines when viewed from the N, S and W would mainly range from non-existent, through negligible to moderate, with no significant visual impacts on the landscape or views anticipated, having regard to the

undulating character of the intervening landscape. The long-distance views from the far E are either located in NI or in the vicinity of the Border (VP13, VP17 & VP25). There are no protected views toward the windfarm site or any other sites covered by sensitive landscape designations, and although the turbines would be visible from the E and intermittingly from the SE, E, given the more low-lying character of the intervening countryside, the visual impact on the landscape would still not be significant.

Recreational & tourist areas:

Some of the turbines would be visible from along a number of recreational (including walking & cycling routes) and tourist areas. However, the visual impact would not be significant having regard to the topography of the area which would only afford intermittent views of the turbines, and the separation distances which would serve to mitigate the visual impacts on many of the views towards the site.

Dwelling houses & community buildings: refer to section 6.6 below.

Cumulative impacts:

There are several operational and permitted windfarms in the wider area on both side of the NI border. The EIAR Viewpoint Assessment also deals with the potential for in-combination effects with other operational and permitted windfarms. I visited several other locations to assess the potential visual impacts on the wider area.

The proposed turbines would be visible from several elevated and low-lying locations on the outer perimeter of the 20km Study Area to the N, S, W and E of the proposed windfarm, however they would not dominate the landscape. No significant adverse cumulative impacts are anticipated for long distance views or the surrounding sensitive landscapes.

EIAR VP1& VP3: The proposed turbines would be slightly visible from elevated areas to the N of the site in the townland of Meenagrauv to the NW of Ballybofey (VP1) and from along the N15 at Ballybofey (VP3), however they would not form a dominant feature because of the separation distance. The panoramic view S from these locations encompasses other operational and permitted windfarms that are located at various distances from the proposed development. The most visually

prominent windfarm comprises the permitted turbines at Meenbog (to the NE of the subject site) and the blade tips of some of the operational turbines at Meenadreen to the S of the site. Although there is some potential for in-combination effects, they are not expected to be significant given the substantial separation distances with the site with no adverse cumulative impacts anticipated.

EIAR VP5: The proposed turbines would be visible from along a Scenic Route section of the N15 at the NW tip of Lough Mourne where a Protected View extends to Barnesmore Gap and across the lough and EHSA Area towards Barnesmore Bog. As previously stated, the proposed turbines would form a more dominant feature on the landscape than the existing array. The panoramic view SE from this location encompasses the upper sections of several permitted turbines at the Meenbog windfarm to the NE of the site, and a portion of the upper sections of some of the proposed turbines. The Meenbog windfarm would be located on the outer periphery of the Protected View and the proposed windfarm would be located within the centre of this View but at a greater distance. Although there is potential for adverse cumulative impacts from EIAR VP5 and the Protected View along a N15 Scenic Route at Lough Mourne, the overall cumulative impact would not be significantly adverse.

EIAR VP6 & VP8: The proposed and neighbouring permitted turbines at Meenbog would be highly visible from along the local roads to the E of the N15 and N of the site, and there would be potential for in-combination effects. However, the area is sparsely populated and the views are not protected, therefore no adverse cumulative impacts on the landscape are anticipated.

EIAR VP9 & 14: The proposed turbines would be visible from the elevated Bluestack Way at Greenan to the W of the site and the low-lying SW shore of Lough Eske, and as previously stated, the turbines would form a dominant feature on the landscape. The panoramic view E from these locations encompasses other operational and permitted windfarms that are located at various distances from the proposed development. The most visually prominent windfarm comprises the upper sections of the operational turbines at Meenadreen and the barely perceptible blade tips of the permitted turbines at Meenbog. Although there is some potential for in-combination

effects, they are not expected to be significant with no significant adverse cumulative impacts anticipated.

EIAR VP12: The proposed turbines would be slightly visible from an elevated area to the W of the site along the R261 at Meenagran, however they would not form a dominant feature because of the separation distance. The panoramic view E from this location encompasses other operational and permitted windfarms that are located at various distances from the proposed development. The most visually prominent windfarm comprises the operational turbines at Meenadreen to the S of the subject site. Although there is some potential for in-combination effects, they are not expected to be significant given the substantial separation distances with the site with no adverse cumulative impacts anticipated.

EIAR VP13, VP17 & VP25: The proposed turbines would be slightly visible from NI to the E of the site along local roads at Killen, Kiletter and Shanvia in NI, however they would not form a dominant feature because of the separation distance. The panoramic view W from these locations encompasses other operational and permitted windfarms that are located within at various distances from the proposed development. The proposed windfarm would be located in between the permitted turbines at Meenbog and the operational turbines at Meenadreen (VP13 & VP17) and the operational windfarm at Tievennammenta (VP25), and there is potential for in-combination effects as these windfarms could read as a single windfarm on the landscape. However, the visual impacts on the landscape are not expected to be significant given the substantial separation distances between the site and aforementioned locations, with no adverse cumulative impacts anticipated.

EIAR VP18, VP20, VP21, VP22 & VP23: The proposed windfarm and the neighbouring permitted and operational turbines at Meenbog and Meenadreen would be visible to various degrees from locations along local roads and amenity areas to the SW of the site. Although there is some potential for in-combination effects, no adverse cumulative visual impacts on the landscape are anticipated.

EIAR VP19: The proposed windfarm and the neighbouring operational turbines at Meenadreen would be highly visible from along the local road at Croaghnakern to the SE of the site and there would be for in-combination effects. However, the area is

sparsely populated, the views are not protected and no adverse cumulative visual impacts on the landscape are anticipated.

EIAR VP26 & VP26a: The proposed windfarm and the neighbouring operational turbines at Meenadreen would be visible from the shore of Lough Derg (Visitors Centre) and Station Island (Pilgrimage Centre) on Lough Derg. Although the existing c.60m high turbines at Barnesmore Bog are not visible from this location, the blade tips of several of the proposed c.180m high turbines would extend over the ridgeline. Although there is some potential for in-combination effects, they are not expected to be significant, having regard to the low magnitude of the visual intrusion, and the impact of the proposed turbines on the surrounding scenic landscape would not be significant with no adverse cumulative visual impacts on the landscape anticipated.

EIAR VP1& VP3: The proposed turbines would be slightly visible from along local roads at Ballynacarrick (VP28) and Bigwood (VP29) to the far S of the site, however they would not form a dominant feature because of the separation distance. The panoramic view N from these locations encompasses other operational windfarms that are located within at various distances from the proposed development. The most visually prominent windfarm comprises the operational turbines at Meenadreen and Arnaget. Although there is some potential for in-combination effects, they are not expected to be significant given the substantial separation distances with no adverse cumulative visual impacts on the landscape anticipated.

Conclusion: The proposed development would not be highly visible or visually intrusive on the landscape because of the intervening mountainous topography, the separation distances between the viewpoint locations and the windfarm site, and also the distance between the proposed and existing developments (permitted and operational). Therefore, the proposed turbines would not constitute a dominant feature on the landscape or interfere with long distance views, with no significant in-combination visual impacts anticipated.

6.4.7 Conclusions:

Residual Effects: Residual impacts are not predicted to be significant.

Cumulative Impacts: Any cumulative Landscape impacts during the operational phase when taken in-combination with other windfarms, plans and projects in the surrounding area would be minimal in extent.

Conclusion: No written submissions were made in relation to Landscape (other than the marine location observation by Derry & Strabane District Council). However, I am satisfied that all issues relate to the landscape and visual impacts have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion: Having regard to all of the above, I am satisfied that the most significant visual impact would be from within the site itself, and then from along the local road to the SW and the dispersed houses to the W, and from along sections of the N15 including at Lough Mourne The proposed development would not adversely affect the visual amenities of the area or interfere with any protected views along scenic routes in the surrounding area, to any significant extent. The proposed development would not give rise to any significant adverse cumulative impacts with other windfarms in the wider area. The height and rotor blade dimensions of the proposed turbines would not give rise to a significant adverse visual impact having regard to the overall scale of the site and the high degree of natural screening from the surrounding mountain ranges. Regard has also been had the presence of an existing permitted and operational windfarm on the subject lands and the reduction in the number of turbines from 25 to 13 under the current proposal.

6.5 Material Assets (Movement and access)

6.5.1 Project description and location

The proposed windfarm would be located within SE Donegal with indirect access off the N15 National Primary Road between Donegal Town and Ballybofey via the local road network. The project comprises the decommissioning of an existing 25 turbine windfarm and the construction of a new 13 turbine windfarm. The potential impacts relate to the removal of existing equipment, and delivery of turbine components and construction materials to the site along the national, regional, and local road network.

The main infrastructure elements include:

- Minor road & junction works to facilitate the delivery of components.
- Upgrade of existing site access roads & a new site access road (c.188m).
- Upgrade of existing internal tracks & a new track to serve T13 (c.140m)
- Reinstatement of redundant site roads (c.600m).

6.5.2 Environmental Impact Assessment Report

Chapter 14 of the EIAR and Technical Appendix 12.1 dealt with the traffic and transport effects of the proposed windfarm on the local road network during the decommissioning, construction, and operational phases. The turbine delivery route from Killybegs Port to the W of Donegal would be along the R263 and N56 National Secondary Road to Donegal Town, N along the N15 National Primary Road to a junction with the L2596 Local Road and then E along the local road network to the existing site entrance. The construction materials delivery route from Killybegs would share the turbine delivery route, whilst another alternative route from Ballintra/ Laghey to the S of Donegal town, would be along the N15 and the local road network. The EIAR described the characteristics of the road network (including road width, alignment, junctions, bridges, and speed limits) and delivery vehicle specifications. It also identified several sensitive receptors along the haul routes (including community facilities and dwelling houses). The EIAR carried out traffic counts along the N15 and N56 which were used to describe existing traffic volumes,

assess the impact of traffic generation and the capacity of the road network to accommodate abnormally large vehicles. It highlighted the extent of the remedial works required along the haul route and at the site access.

During the decommissioning and construction phase, some 2,323 loads will be delivered to the site (and removed). The initial removal of decommissioned turbines will account for c.100 vehicle movements, concrete and reinforcing steel deliveries will account for c.800 movements, and rock importation will account for c.1, 197 movements. The EIAR estimates an average of c.194 deliveries per month over a 12 month period (or c.8 to 9 per day). Peak deliveries will occur when the concrete foundations are poured with c.62 to 65 deliveries per day over c.13 days, and the turbine components will then be delivered by c.162 loads over a c.8-12 week period.

HGV traffic volumes are predicted to increase by c.14.8% on the N15 which is operating at c. 68% capacity (until 2023) and light vehicles (c.10-15 per day) will increase capacity by c. 0.2%, neither of which is significant. However, the traffic impacts on the local road network (including the L2595, L2095 & L2015) are expected to be negative but short term, notwithstanding their use and/or previous upgrade by the existing and/or neighbouring windfarms. The works at the site entrances to the windfarm would have a negligible effect on traffic volumes. The EIAR concluded that the road network had sufficient spare capacity to accommodate the anticipated increase in traffic volumes during the initial decommissioning and construction phases. During the operational phase the increase in traffic will be limited to 2 or 3 employees. It is anticipated that the final decommissioning impacts will be less significant than during the construction phase as all hard surfaces will remain in-situ and covered with peat, and that turbine removal will take c.8 weeks.

The EIAR concluded that only short-term temporary impacts during the initial decommissioning and construction phases are predicted and that the mitigation measures (including a Traffic Management Plan, liaison with the County Council, Gardaí & local communities, a Haul Route Survey for abnormal loads & temporary traffic signs) will minimise the impacts on the road network during each phase. The EIAR did not predict any cumulative or transboundary impacts in combination with

other operational windfarms in the surrounding area, or any other significant adverse impacts during the operational or final decommissioning phases.

6.5.3 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider road network in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the relevant EIAR traffic and movement studies which are summarised in section 6.5.2 above and the concerns raised by the Observers (TII & NI Roads Service) which are summarised in section 4.0 above, and the applicant's response to these submissions. I also had regard to relevant national, regional and local transportation and planning policy, which is summarised in section 3.0, and to the presence of an operational windfarm on the site.

Transport Infrastructure Ireland and the County Council had no objections to the proposed arrangements subject to compliance with national and local policy and guidance in relation to traffic safety and road maintenance. The NI Roads Service had no objection to the proposed movement and access arrangements, although it requested operational details of any NI roads to be used for the haul route, and consultation on the Traffic Management Plan.

Vehicular access:

Vehicular access to the proposed development would be via the existing route off the N15 to Barnesmore Village and along the local road network which serves the existing windfarm on the site. This would be a short-term temporary arrangement during the construction phase only and any adverse impacts would be correspondingly short term and temporary. Any traffic risks associated with the use of this section of the N15 and any upgrade of the infrastructure would be managed by the EIAR mitigation measures which are outlined above. These include a traffic management plan and temporary traffic controls which should be put in place for the duration of the works with the agreement of the County Council. No significant impacts on traffic volumes or road safety are anticipated during any of the phases (decommissioning, construction or operational) and I am satisfied that the access arrangements would not give rise to a traffic hazard or endanger the safety of other

road users. Notwithstanding the above, any maintenance works to the public road arising from the proposed development should be at the developer's expense.

Delivery route:

The proposed use of the N56 and N15 from Killybegs Port via Donegal Town to the site is an acceptable delivery route for the turbine components and construction materials, as is the alternative proposed use of the N15 from Laghey for construction materials. However, some works may be required along these roads and at their junctions to accommodate the abnormally wide and heavy loads which could also have a physical impact on the road network and cause disturbance to local communities during the decommissioning construction phases.

TII referenced the strategic importance of the N15, had no objection in principle to the proposed delivery route, but raised concerns in relation to road maintenance and traffic safety and requested that the developer consult with the Roads Authority in relation to any works that may affect the road network and road junctions. TII also requested that all works should comply with TII standards and be subject to a Road Safety Audit as appropriate, and that permits may be required for abnormal or heavy loads. TII noted that the capacity of all structures along the delivery route should be checked and that a technical load assessment is required. The County Council did not object to the proposed arrangements. However, any works to the road network and junctions should be at the developer's expense following completion of the project. These outstanding concerns could be addressed way of planning conditions.

Potential adverse impacts to the road network would be mainly managed by way of the EIAR mitigation measures which are outlined above, and which include a Traffic Management Plan and a range of temporary traffic control measures which should be put in place with the agreement of the County Council. It is also noted that abnormally large loads would be delivered during the night when traffic volumes are low, with no significant impacts on traffic volumes or road safety anticipated. The use of the road network also has potential to cause disturbance to local communities along the delivery route and the developer should ensure that local people are notified in advance of any plans to transport large loads to the site.

I am satisfied that the proposed delivery arrangements would not give rise to a traffic hazard or endanger the safety of other road users and that any disturbance to local communities along the route would be short term and temporary in nature. However, temporary traffic management measures should be put in place for the entire duration of the works in order to avoid a traffic hazard along the N15 and local road network, and during the delivery stage of the project along the N56.

Site access & internal access tracks:

The proposed development, which would comprise the removal of 25 existing turbines and the erection of 13 new turbines, would utilise and upgrade the existing site entrance, which is considered acceptable. It would also utilise, upgrade and extend the existing network of internal tracks to provide access to and between the proposed turbines and other project elements which is also considered acceptable. Issues related to peat stability, water quality and ecology will be addressed in the following sections of this report. The proposed reinstatement of the lands occupied by access tracks to the redundant turbines that would not be replaced would constitute a direct, long term positive impact.

6.5.5 Conclusions:

Residual Effects: There will be a short-term increase in traffic movements during the decommissioning and construction phases but no significant increase during the operational phase. Residual impacts are not predicted to be significant subject to the implementation of EIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative traffic impacts during the operational phase when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent.

Conclusion: I have considered all the written submissions made in relation to movement and access, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion: Having regard to all of the above, I am satisfied that the proposed development would not give rise to a traffic hazard or endanger the safety of other road users, subject to the full implementation of the EIAR mitigation measures and compliance with any recommended planning conditions. The proposed development would not give rise to any significant adverse cumulative traffic impacts in-combination with other windfarms, the grid connection or plans and projects in the wider area.

6.6 Population, Human Health, Air & Climate

6.6.1 Project description:

The project would comprise the decommissioning of an existing 25 turbine windfarm and the construction of new 13 turbine windfarm (including a met mast, energy storage facility, upgraded substation, temporary construction compound along with new and upgraded access tracks and associated site works). The visual impacts have been assessed in section 6.2 above and the traffic impacts have been assessed in section 6.3. This section will deal the potential impacts of noise, shadow flicker, dust and visual intrusion on the residential amenities of properties in the vicinity with respect to human beings, population and human health.

6.6.2 Locational context

As previously stated, the windfarm site occupies an upland rural location to the E of the N15 which connects Donegal Town to Ballybofey, and to the W of an upland rural area in NI. The surrounding rural area is sparsely populated although there are several houses located along the N15 and surrounding local road network to the W of the site, and along the haul routes to the S and SW of the site, with increasing residential densities along the approach roads to Donegal Town and Killybegs.

6.6.3 Environmental Impact Assessment Report

Chapters 5, 10, 11, 12 & 14 of the EIAR and associated Technical Appendices dealt with the human environment including population & human health (economic activity, tourism & employment), visual amenity, noise, material assets (shadow flicker and air & climate) and traffic & transport, and these chapters identified the potential impacts on residential amenity and the wider human population during the decommissioning, construction and operational phases.

Section 5 of the EIAR dealt with **population and human health.** It described the population, employment, economic activity, land uses, services and tourist attractions in the surrounding area; it referred to surveys of public perceptions of windfarms which dealt with the impacts of wind farms on visual amenity, tourism, employment and health; and it stated that there would be positive health effects related to a reduction in the use of fossil fuels to generate energy. The EIAR Visual

Amenity Assessment identified c.51 dwelling houses within a 4.0 km radius of the proposed development which are all located to the W of the site on both sides of the N15. All but 2 houses (No.1 & 1a) would be located outside the 2km radius and within the 2km to 3km contour. The EIAR concluded that following the implementation of mitigation measures (related to noise, shadow flicker & traffic) and the use of best construction practices and ongoing monitoring, and the physical characteristics of the surrounding terrain, the proposed windfarm would not result in any significant effects on human beings in the surrounding area.

Chapter 12.8 of the EIAR dealt with **air and climate**. It stated that there would be no emissions from the wind farm project, and given the non-industrial nature of the project, there would be no adverse impacts on residential amenity or air quality. It stated that there could be short term impacts on air quality by way of dust during the construction phase with regard to construction vehicles, excavations and construction, but noted that the nearest dwellings are over 2km away. There would be a marginal loss of carbon sequestration capacity because of the excavation works from within the site as existing hardstands would be reused. This loss would be balanced by the lack of carbon emissions from the project. The EIAR did not predict any adverse impacts on air and climate subject to mitigation measures (including maintenance of construction vehicles, use of best construction practice and the localised reuse of aggregates from the decommissioned infrastructure).

Chapter 12.9 of the EIAR dealt with **shadow flicker**. The computer modelling examined the potential for shadow flicker occurrence at 1 property (H19) within 1.58km (10 x rotor diameter of 158m as per 2006 Guidelines) of the nearest turbines (T12 & T13) to the NE this property. The EIAR concluded that this property will experience less than 30 hours of shadow flicker per year but that there is potential for shadow flicker to be in excess of the 2006 Guideline of 30 minutes per day under the worst-case scenario of 100% sunshine where the shadow of the turbine passes over the structure. It stated that this would be an extremely rare occurrence and that the property is currently used as a livestock shed. The EIAR did not predict any adverse shadow flicker impacts subject to mitigation measures (including monitoring,

logging complaints and the use of a turbine control system to prevent operation at times when shadow flicker might cause a disturbance).

Chapter 10 and Technical Appendices 10.1 to 10.5 of the EIAR dealt with **noise** and it concluded that there would be minimal disturbance from decommissioning, construction and operational noise (including turbines & energy storage facility) at the nearest noise sensitive locations .The assessment included desk top and field studies and had regard to existing 2006 Guidelines and it noted that the number of turbines would be reduced from 25 to 13. The EIAR identified c.20 dwelling houses within a 2.5km radius of the proposed development, all of which are located to the W of the site and mainly along the N15, except for H17, H18 and H19 which occupy more isolated upland locations. It carried out a Baseline Noise Survey and constructed a Noise Contour Map of the 13 turbines. Sound level meters were placed at 3 representative house locations at H1, H17 & H19 to the W of the turbines. Background measurements were recorded, and a variety of wind speeds and wind shear formed part of the (indicative) prediction model for day and night time noise during the operational phase at c.20 properties.

Decommissioning & Construction phase:

Noise levels were predicted for activities (including HGV movements and general construction) within 1.3km and 1.8km of the nearest noise sensitive locations (H19 & H1). The predicted noise levels for general construction at H19 ranged from 27.7dBL_{Aeq} to 41.7dBL_{Aeq} which could increase to between 39.7 and 46.7 for periodic rock breaking. The predicted noise levels for general construction at H1 ranged from 24.9 dBL_{Aeq} to 38.9 dBL_{Aeq} which could increase to between 39.7 and 43.9 for periodic rock breaking. The predicted noise levels for vibratory activities ranged from 30.7dBL_{Aeq} to 40.7dBL_{Aeq} at H19, and from 30.7 to 37.0 at H1. The EIAR did not predict any adverse noise or vibration impacts during the decommissioning and construction phase subject to mitigation measures (including best construction practice & adherence to relevant guidance & standards).

Operational Phase:

Operational noise levels were predicted at c. 20 houses for the proposed windfarm and cumulatively with other windfarms in the wider area for worst case scenarios.

The overall results indicate that noise levels would range from 21.2dBA under low wind conditions to 30.9dBA under high wind conditions at H13 and H16 and from 25.3dBA under low wind conditions to 35dBA under high wind conditions at H19 (uninhabited). It identified the most noise sensitive locations to be at 2 houses at H19 and H1 to the W of the site (1.3km &1.8km). The EIAR results also indicate that there would be minimal cumulative effects in-combination with other windfarms in the wider area with no noticeable in-combination effects identified at any of the properties over various wind speeds. The EIAR predicted that noise levels would not exceed the accepted criteria for day and night-time noise at any of the 20 houses to any significant extent, in line with current guidance.

The EIAR did not predict any significant adverse noise impacts under a range of wind speeds during the operational phase with no mitigation measures proposed, however, noise monitoring will be undertaken and a turbine curtailment strategy will be devised in the event that noise limits are exceeded.

6.6.3 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider regional and local road network in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the relevant EIAR shadow flicker, air quality and noise studies which are summarised in section 6.6.2 above. I had regard to the concerns raised by the Observers which are summarised in sections 4.0 (which included Derry & Strabane District Council) who raised concerns about residential amenity and the protection of TV, mobile phone, and internet connectivity. However, is noted that none of the other Observers raised concerns in relation to the decommissioning, construction, or operation phases of the proposed development with respect to population and human health. I also had regard to relevant national, regional and local planning policy, which is summarised in section 3.0, and to the presence of an operational windfarm on the site.

The proposed windfarm will provide significant employment opportunities during the construction phase although post construction employment would be limited to 2 to 3 positions related to ongoing maintenance. The project will give rise to financial benefits by way of commercial rates and community gain benefits. The potential

impacts on residential amenity arising from the construction and operational phases are assessed below. Issues related to landscape and traffic have been assessed in sections 6.2 and 6.3 above.

Shadow flicker:

The 2006 Wind Energy Guidelines require an assessment of the effects of shadow flicker on dwelling houses and community buildings located within a specified radius of the turbines (i.e. 10 x rotor blade diameter). The Guidelines also recommend that shadow flicker should not exceed 30 hours per year or 30 minutes per day, and state that at distances of greater than 10 rotor diameters the potential for shadow flicker is very low. The 2019 Draft amendments to the Guidelines require the submission of a shadow slicker assessment and the attachment of a condition to ensure that there will be no shadow flicker at any nearby dwelling or other sensitive property by way of a computerised turbine shutdown at critical times.

The applicant's assessment, which applied the 10-x rotor blade diameter equation (10 x 158m), identified 1 property (H19) located with 1.58m of the nearest turbine T13). Based on my site inspection, I would concur with the applicant's assertion that this property comprises a derelict house that is currently used for livestock, and I am satisfied that no other dwelling houses or sensitive properties lie within a c.2km of the nearest turbine. It is noted that the County Development Plan does not currently contain any requirements or standards in relation to shadow flicker, and that none of the Parties raised it as a cause for concern.

Having regard to all of the above, I am satisfied that the proposed turbines would not seriously injure the residential amenities of any houses or sensitive properties in the surrounding area by way of shadow flicker, subject to compliance with the EIAR mitigation measures and any recommended planning conditions.

Dust & air quality:

The proposed excavation and construction work, and the work associated with the junction and road upgrades could also give rise to dust emissions. However, it is not anticipated that this would have an adverse impact on residential amenity having regard to the separation distances between the proposed works and neighbouring

houses to the W and NW. However, the full implementation of the mitigation measures and stringent compliance with best construction practices would minimise any potential impacts on nearby houses.

Noise and disturbance – decommissioning & construction phase:
Given the nature and scale of the proposed development, the proposed windfarm will give rise to noise disturbance during the construction phase. This disturbance would mainly relate to the delivery of large components along the local road network and road works which include junction upgrades. It would also include excavation and construction works within the site, and the construction of new and upgraded access tracks throughout the site, and it is noted that no borrow pits are proposed and that there would be no blasting. Although these works would be short term and temporary, they have the potential to adversely affect residential amenities in nearby houses along the local roads to the W and NW of the site and along the delivery routes to the S and SW. It is noted that the proposed works along the cross-country grid connection route could also give rise to disturbance, although most of the route is sparsely populated.

It is noted that the surrounding area is not densely populated, there are c.20 houses located within a 2.5km radius of the project, and only 1 (H19) is located within 1.5km of a turbine(T13) and this property is derelict and used for livestock. There is a substantial separation distance between the proposed works and the nearest houses to the W and NW which are mainly located in the vicinity of the N15, and on the outer perimeter of the 2.5km buffer zone. The detached houses to the W of the site are mainly located along the local road network and outside the 2.5km buffer. Having regard to the substantial separation distances and the use of the nearest property at H19 for livestock, the construction work impacts would be mainly related to noise and disturbance along the delivery route which would be short term and temporary. The EIAR noise control and monitoring measures are considered adequate and any outstanding noise concerns could be addressed by way of conditions which place restrictions of delivery times and hours of construction. Local residents should be notified in advance of any major construction works including any mechanical excavations and of the transport of large pieces of plant and equipment along the local road network.

Noise and disturbance - Operational phase:

The 2006 Wind Energy Guidelines require an assessment of the effects of operational noise at sensitive locations. It recommends in low noise rural environments where background noise is less than 30dB(A), it recommends that the daytime level of the $L_{A90,10min}$ of wind energy noise be limited to an absolute level within the range of 35-40dB(A), whilst 43dB(A) should not be exceeded at night-time in other locations. It is noted that an upper limit of 45 dB (A) is considered acceptable for consenting owners.

The 2019 Draft Revised Guidelines have more stringent requirements for day and night-time noise. The proposed amendments provide a much more detailed level of guidance (in line with WHO standards) and Technical Appendices that deal with the treatment and assessment of noise. It requires the applicant to provide for an assessment of Relative Rated Noise Limits (RRNL) measured as $L_{A\ rated\ 10min}$ which takes into account the cumulative impact of noise levels resulting from other existing and permitted windfarms within an identified study area (where the RRNL may exceed 30dB L_{A90} up to 12m/s wind speed or an area within 3km of the project). The noise levels should not exceed background noise levels by more than 5dB (A) within the range 35-43dB (A) or 43dB (A) overall (day or night). Appendix 2 includes a noise compliant procedure to be submitted by the applicant, suggested planning conditions (including scheduled commitments, RRNLs & an annual monitoring report) and a Noise Verification Monitoring for larger projects. Applications should be accompanied by a noise modelling report, stated compliance with limits, a methodology for a post completion noise survey, a map of noise monitoring locations, and a proposal for a documented complaint handling procedure.

The EIAR defined a 2.5km Operational Noise Study Area around the proposed windfarm, it identified c.20 dwelling houses within this buffer zone where operational noise levels were predicted, and it set up 3 noise monitoring locations at the 3 houses located closest to the windfarm at H1, H17 and H19 to the W of the site. It is noted that all of the other houses are located close to the N15 national road. The results of this assessment is summarised in section 6.6.3 above and it concluded

that even under the worst case scenarios, noise levels would not exceed 35dBA at any house under any circumstances.

There are no occupied dwelling houses located within 2km of the proposed turbines and the nearest derelict dwelling (H19) is located a substantial distance to the W of T13. I am satisfied, based on the results of the Operational Noise Assessment, that the predicted noise levels would not exceed the accepted criteria for day and night time noise at any of the c.20 houses which is in line with the current 2006 Guidelines. However, in line with the prosed draft amendments to the Guidelines, a monitoring strategy should be put in place in the event that noise levels are exceeded so as to ensure that turbine noise does affect any houses, particularly under extreme weather conditions. This could be addressed by a planning condition.

The proposed development does not fully comply with the Draft Revised Wind Energy Guidelines which was issued in December 2019, given that the planning application was lodged with the Board in December 2019. However, the maximum predicted noise levels at the nearest noise sensitive locations under high wind conditions within the surrounding rural area (i.e.35dB(A) at H19 - a derelict house) would not exceed the 43dB (A) absolute limit set out in the 2019 Amended Guidelines. Compliance with other elements of the 2019 Draft Amendments (including monitoring & reporting) could be addressed by way of a planning condition in addition to the previously suggested curtailment strategy.

It is also noted that the existing 25 turbines would be replaced by 13 new turbines, and that when I carried out my site inspection the “swishing” noise of the existing turbines only became evident within c.100m of the structures.

The proposed development would also provide for an energy storage facility that would be located in close proximity to the substation and at a substantial distance from the existing houses to the W of the site, and it is unlikely to have an adverse impact on residential amenity by way of noise disturbance, having regard to the typically low noise generating characteristics of such facilities.

Having regard to all of the above, I am satisfied that the proposed development would not seriously injure the residential amenities of any houses or other sensitive locations in the surrounding area by way of noise disturbance, subject to compliance with the EIAR mitigation measures and the recommended planning conditions.

Residential visual amenity

The 2006 Wind Energy Guidelines require a 500m setback between a turbine and the nearest dwelling house in order to protect residential visual amenity. The 2019 Draft amendments to the Guidelines also require a 500m setback or a setback in the order of 4 x times the tip height of the turbine, depending on its's height.

The proposed 13 x 180m high turbines would occupy an upland rural landscape and by virtue of their height and elevated position they would be visible from a variety of locations in the surrounding area. The EIAR Visual Amenity Assessment identified c.51 dwelling houses within a 4.0 km radius of the proposed development which are all located to the W of the site on both sides of the N15 where the lands rise steeply to the E and W, except for 1 house (No.19) that is located to the SW of the site. The Assessment did not identify any houses to the N, S or E of the site or on the opposite side of the NI border.

None of the c.51 houses are located within either 500m or 720m of the proposed turbines (in line with the 2006 Guidelines and 2019 Draft amendments). All but 2 of the houses (Nos.1 & 1a, c.1.8km to the NW of the site) would be located outside the 2km radius. Several houses on the E side of the N15 (Nos. 20, 38, 39 & 40) and two houses in the vicinity of Barnesmore Village (Nos.44 & 45) would not have a view of the turbines because of their position relative to the upland area and steep incline. The remaining houses would have intermittent or partial views of the upper sections of the turbines (blades and/or nacelles) but not the entire structures. Approximately 9 to 13 of the turbines would be visible to several houses that occupy elevated positions to the W of the N15 and in the vicinity of Barnesmore Village, however all of these houses are located between c.2.5 and 3.0km of the site. Approximately 6 to 9 of the turbines would be visible to most of the remaining houses in the study, except for a small number of houses (Nos. 1, 1a, 14, 15, 19 & 25) that would have a very restricted view of the blade tips of between 1 and 3 turbines.

Having regard to my assessment of the site and surrounding area, the physical characteristics of the terrain, the absence of dwelling houses within a 4km radius to the N, S and E of the site, the substantial separation distances between the proposed windfarm and the nearest houses to the W of the site, and the absence of any houses within either 500m or 720m of the proposed turbines, I am satisfied that the proposed development would not have an adverse impact on the visual amenities of any dwelling houses or community buildings in the surrounding area.

Conclusion:

Having regard to the foregoing, I am satisfied that the proposed development would not have a significant adverse impact on population or human health by way of shadow flicker, dust, noise or visual intrusion.

6.6.6 Conclusions:

Residual Effects: There will be some increase in noise, dust emissions during the construction and operational phases however predicted levels are within guidance limit values. Residual impacts are not predicted to be significant subject to the implementation of EIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative noise impacts during the operational phase when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent.

Conclusion: I have considered all the written submissions made in relation to population and human health, in addition to any specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion: Having regard to all of the above, I am satisfied that the proposed development would not adversely affect population, human health, or air and climate, to any significant extent as a result of noise, shadow flicker, dust emissions or visual intrusion, subject to the full implementation of the mitigation measures and any recommended planning conditions. The proposed development would not give rise to any significant adverse cumulative impacts, in-combination with other windfarms, the grid connection route or plans and projects in the area.

6.7 Land, Soil & Water (Peat stability)

6.7.1 Project description

The proposed windfarm project would comprise extensive excavation works associated with the decommissioning of the existing windfarm infrastructure and the construction of the new turbines, ancillary developments and access tracks within an upland peat environment.

6.7.2 Environmental Impact Assessment Report

Chapter 8 of the EIAR dealt with soils and geology and the Technical Appendices contain a Peat and Slope Stability Assessment Report (Appendix 8.3), an outline Decommissioning/Construction and Environmental Management Plan (Appendix 2.1) and a Surface Water Management Plan (Appendix 2.3). The EIAR states that there is no evidence of bog slides or peat instability within the site and that Barnesmore Gap to the W is a Geological Heritage site. Several desktop studies, field surveys and site suitability tests were undertaken. Chapter 6 and 9 of the EIAR deals with biodiversity and hydrology & hydrogeology, and issues related to water quality and aquatic ecology will be assessed in section 6.8 below.

The EIAR described the ground conditions as consisting of blanket peat over bedrock with rocky outcrops, and some areas of peat degradation and soil creep were noted. The survey works included c. 666 Peat Probes across the site and Gouge Cores at the turbine locations. The results indicate that peat depths vary across the site from 0.0m to 5.7m, and that most of the peat is less than 2m deep (c.550 survey points). Most of the turbines would be located on sites with a peat depth of less than 2m, however three turbines (T4, T5 & T11) would be located in depths greater than 2m (Moderately Deep) but less than 3.5m (Deep).

The Peat and Slope Stability Risk Assessment (turbines, met mask and energy storage unit sites) calculated shear strengths and determined the stability (Factor of Safety) of the peat slopes. The risk of stability issues arising was Negligible to Low

Risk at all locations whilst the potential impact on a nearby sensitive receptor in the event of instability ranged from Negligible to Low at most locations, and Moderate at 2 locations (T3 & T13). The EIAR did not identify any stability issues along the haul route and access tracks which will mainly utilise existing infrastructure. It concluded that the site has an acceptable margin of safety subject to general construction control measures including ongoing site supervision.

The EIAR states that the excavation works will give rise to c.43, 000m_3 of peat and spoil which would be temporarily stockpiled within the site, and c.39, 032m_3 reused as fill material. It states that contamination of bedrock, peat and soils could arise from leakages, spillages and geochemical soil alterations but with no significant adverse impacts subject to mitigation measures (including bunded storage of chemicals & fuels, storm drainage with oil interceptors; minimal refuelling, maintenance of plant & equipment; and an emergency plan & spill kits). It states that erosion of exposed subsoils and peat could arise during the construction works from vehicle movements, surface water runoff and wind action, but with no significant adverse impacts subject to mitigation measures (including re-using peat for habitat restoration and landscaping).

The EIAR did not predict any significant adverse in-combination impacts or during the operational or decommissioning phases subject to the implementation of similar construction phase mitigation measure during decommissioning.

6.7.3 Existing wind farm

Details of the existing windfarm on the site are summarised in section 1.5.1 above.

6.7.4 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the relevant EIAR studies which are summarised in section 6.7.2 above. I also had regard to the concerns raised by the Observers which are summarised in section 4.0 above (NPWS, NI Environment, Marine & Fisheries Group and Environment Agency

and the Loughs Agency) which related to peat stability, water quality, aquatic wildlife and sensitive sites, and I had regard to the applicant's response to these concerns. I also had regard to relevant national, regional and local planning policy, which is summarised in section 3.0, and to the presence of an operational windfarm on the site.

The proposed windfarm would be located within an undulating upland area which mainly comprises peatland, with rocky outcrops to the W, and a series of lakes that the surrounding lands slope down towards. Several of the turbines would be located upslope of these lakes, including Lough Golagh in the centre of the site.

According to the GSI Landslide Susceptibility Maps, the risk of landslides varies from Low and Moderately Low across most of the site to Moderately High around Lough Golagh, and High along the W perimeter of the site. Most of the turbines would be located in areas where the risk is predicted to be Low to Moderately Low, whilst some would be located close to areas where the risk is Moderately High (T1, T2, T4, T7 & T10) but none would be located in High risk areas. The site elevations vary between c.300mOD and 398mOD and the turbines would be located at levels that vary between c.300mOD in the SW section (T13 & T12) and between c.370 and 380mOD in the NW and NE sections (T2, T3, T6 & T7). Site gradients do not vary greatly across the site at the location of the turbines, and the met mast and energy storage facility would be located on moderate slopes, as would most of the access tracks.

Average peat depths across most of the site are less than 2.0m but with some localised deeper pockets of up to 5.7m where no development is proposed. The peat is mainly underlain by bedrock and some of the turbines would be located within areas where the surrounding peat depth is very shallow between 0m and 0.1m (T7, T9, & T12). However, most turbines would be located in areas where the peat depth varies between 0.5m and 2.0m, whilst 3 would be located in areas of deeper peat of between 2.0m and 3.5m in the N and E sections of the site (T4, T5 & T11). It is noted that there is no recent history of landslides or peat slippages in the area and that neither the existing Barnesmore windfarm nor other windfarms in the wider area have given rise to peat slippages.

The proposed works would require the excavation and movement of substantial quantities of peat and bedrock (c.43, 000m_3) from across the entire site and it is estimated that a substantial proportion would be reused within the site (c.39, 032m_3) during the construction phase for bog restoration and rehabilitation. The peat excavation and movement works have the potential to affect peat hydrology and drainage patterns in the area (refer to section 6.8 below). The unregulated excavation and construction work, particularly on steep slopes, N facing slopes, and in areas of deep peat could also give rise to peat instability and slippage, with resultant serious adverse impacts on the environment.

An extensive range of site survey suitability tests were undertaken at the site of the various project elements under both drained and undrained conditions. As previously stated, the results indicate a relatively shallow peat depth across the entire site, except for a small number of locations where deep peat was recorded but where no works are proposed. Peat depths at 3 of the turbines (T4, T5 & T11) were recorded as being between 2.0 and 3.5m which is considered to be Moderately Deep. All three turbines would occupy positions the N and E section of the site between c.330m and 350m OD, where the Landslide Susceptibility Risk is rated as Moderately Low, the slope angles are relatively low and the aspect is mainly S facing, which would further reduce the risk of instability and slippage in the surrounding lands. It is noted that the Peat and Slope Stability Risk Assessment concluded that the risk of stability issues arising at these locations was negligible. Site conditions and peat depths at the met mask, energy storage facility and access tracks were recorded as being similar to the overall site.

The suite of EIAR mitigation measures include detailed design and construction measures for all project elements across the entire site including general and site-specific mitigation measures, and proposals to manage peat storage and reuse, and prevent erosion and peat slides. The proposed arrangements are considered acceptable in terms of mitigating the risk of peat instability and slippage. However, the mitigation measures should be applied at the preliminary design stage, detailed design stage and construction stage, and be subject to ongoing monitoring throughout the construction and operational phases. This could be addressed by way of a planning condition.

Having regard to the foregoing, I am satisfied that the applicant carried out an extensive range of surveys and site suitability tests which were used to inform the location of the proposed turbines, met mast, energy storage facility and upgraded access tracks. I am satisfied that the results of the Peat and Slope Risk Stability Assessment (including the Factor of Safety analysis) are robust and that the proposed works would not give rise to peat instability or slippage, subject to the stringent implementation of EIAR mitigation measures and any recommended conditions, on-going site inspections and monitoring for the lifespan of the windfarm project. Although the excavation of bedrock and peat would have a permanent direct impact on soils and geology, the impacts on the environment would not be adverse.

6.7.5 Conclusions

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of mitigation measures and any recommended planning conditions.

Cumulative Impacts: Any cumulative impacts during the construction and operational phases when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent.

Conclusion: I have considered all the written submissions made in relation to Land, Soil and Water (including peat stability), in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion:
Having regard to all of the above, I am satisfied that the proposed development would not have a significant adverse effect on land, soils, geology or give rise to slope or peat stability subject to the full implementation of the mitigation measures and any recommended conditions. The proposed development would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, the grid connection route, or plans and projects in the wider area.

6.8 Biodiversity and Land, Soil & Water (Aquatic ecology)

6.8.1 Project description

The proposed development would comprise the excavation works associated with the decommissioning of 25 existing turbines and the construction of 13 new turbines and associated infrastructure, underground cabling between the turbines, extended substation and battery storage facility, and the partial undergrounding of the grid connection through the site, along with minor road works along the delivery route.

6.8.2 Locational context

The site and environs are located within the North-Western River Basin District (RoI) and the North-Eastern River Basin District (NI). At regional level the windfarm site is located within the Donegal Bay North and Foyle Catchments and at sub-regional level the site is located within the Legany River and Eske sub catchments.

The undulating site is occupied by several upland dystrophic lakes and the largest are Lough Golagh in the approximate centre Lough Slug in the W of the site. The overall lands are drained by a network of on-site drains and watercourses that flow into neighbouring waterbodies to the E, W and N. The eastern sections mainly drain E and SE to the Derg, Finn and Glendergan Rivers which enter the River Foyle system in NI that ultimately discharges to Lough Foyle to the far N. The western sections mainly drain W to the Lowerymore River along the N15, which discharges to Lough Eske and ultimately Donegal Bay to the SW of the site. The far northern section of the site drains N to the Finn River which also enters the River Foyle system to the far NE. The underground section of the grid connection cable would be located within the SW section of the site which drains mainly to Lough Slug and hence the Lowerymore River and Lough Eske. Sections of the delivery route and extended access road would cross several rivers and watercourses, including the Clogher River close to the site.

The site is located within Barnesmore Bog NHA and there are several aquatic SPAs, SACs, NHAs and ASSIs the surrounding area. These include Lough Eske to the W, Pettigo Plateau and Lough Derg to the S, the Killiter Lakes & Bogs and River Foyle & Tributaries to the E, and Croaghonagh Bog to the N. An extensive area to the W of the site forms part of a designated Freshwater Pearl Mussel Sensitive Area which extends marginally into the W section of the site. Atlantic salmon, European eel, River lamprey, Brook lamprey, Brown trout and Stone loach exist in many of the surrounding watercourses, and Freshwater pearl mussel is present downstream of the site along the Lowerymore River as it flows towards Lough Eske.

The GSI has classified the underlying bedrock as a Poor Aquifer and generally unproductive except for local zones (Pl). Groundwater movement is localised and reflects the topography of the area. The vulnerability of the aquifer varies between mainly Moderate to High/Extreme and the WFD status for the local ground waterbodies is Good Status in terms of water quality. According to the GSI there are no Groundwater Protection Zones or mapped wells within the windfarm site or immediate environs, although there are several houses located to the W of the site, which may depend on wells for their water supply.

The WFD River Water Quality status for the Lowerymore River is High whilst the status for the Glendergan River is Moderate, and both are rated as being At Risk. According to the OPW's river and coastal flood maps and the NI Strategic Flood Maps, there have been no recurring flood incidents within the windfarm site or the surrounding area in recent decades, and the 1 in 100-year flood zones around the river network are mainly confined to the area surrounding the stream channels.

6.8.3 Environmental Impact Assessment Report

Chapters 9 and 6 of the EIAR and associated Technical Appendices dealt with hydrogeology, hydrology, water quality and aquatic ecology, and several desktop studies and field surveys were undertaken. Chapter 8 of the EIAR dealt with geology, soils, land and peat stability, which are assessed in section 6.7 above. Chapters 6 and 7 of the EIAR dealt with Biodiversity and Ornithology and issues related to terrestrial ecology and birds will be assessed in sections 6.9 and 6.10 below.

The EIAR described the proposed windfarm and grid connection as being located within a NHA, drained by the Lowerymore River to the W which discharge to the Lough Eske and Ardnamona Woods SAC and the Derg/Glendergan Rivers to the E which ultimately discharge to the River Foyle and Tributaries SAC, and being proximate to several sensitive aquatic sites. It had regard to the EPA and WFD water quality reports and studies, OPW Flood Maps, NI Strategic Flood Maps, and the GSI groundwater database. A range of investigations were undertaken including a hydrological walkover survey and detailed drainage mapping; biological and chemical surveys; habitat and ecological assessments for fisheries, aquatic invertebrates and Freshwater pearl mussel; an identification of flood risk; and an assessment of groundwater quality, flow paths and wells was undertaken. It stated that water quality in the watercourses mainly have a Q4 rating (Good Status) but with a Q3-4 rating (Moderate) in some locations along the Clogher River. Several fish species were identified along with suitable spawning habitat for Atlantic salmon and several Freshwater pearl mussel populations were identified downstream of the works along the Lowerymore River but not in the watercourses that traverse the site. Ground water conditions were described as Good.

The EIAR states that Barnesmore Bog NHA is c.2, 183ha, of which the windfarm lands cover c.423ha and the project footprint would occupy c.7.25ha. The EIAR analysed rainfall data relative to site conditions, peat characteristics and existing windfarm drainage arrangements. It concluded that there would be a temporary increase in surface water runoff during the construction phase with an imperceptible predicted increase over baseline conditions during the operational phase. No risk of down gradient flooding was predicted. It identified a potential risk of water pollution from suspended solids at turbines located to the N of Lough Golagh and along a section of the haul route close to the Clogher River. It proposed a range of mitigation, avoidance, inspection and monitoring measures as part of an outline Construction and Environment Management Plan and Surface Water Management Plan, adherence to best practice and compliance with relevant Guidelines, as well as the utilisation of existing on-site windfarm drainage network and the provision of a 50m buffer zone around most water courses. The main potential impacts and proposed mitigation measures in relation to the turbines, associated infrastructure, grid connection and delivery routes are summarised below.

Construction	Potential impacts	Mitigation measures
Earthworks	Suspended solids Sediment laden water	50m buffer around streams. Design (including sediment traps, collector drains, silt fencing, brash mats, straw bale & check dams). Treatment systems (including pumps & attenuation ponds). No direct discharge to drains. Management of stockpiles. Timing, seasonality & weather dependency of works. Monitoring & management.
Peat excavations	Additional volumes of water to be treated by surface water management system	Design (as above) Interceptor drainage Attenuation ponds No direct discharge Monitoring & management
Refuelling/spillages	Toxic to humans Toxic to flora & fauna Nutrient supply (to microorganisms & oxygen depletion)	Design (as above). Controlled refuelling (fuel bowser). Minimal fuel storage in bunds. Inspection of plant & machinery. Emergency plans & spill kits.
Wastewater	Ground & surface water pollution	Avoidance (port a loo). Management of water supplies. No discharges on site.
Cement	Water quality & pH Fish (burning skin & blocking gills).	No wet cement works on site. No washing out of plant. Pre-emptive management.
Watercourse & drainage patterns	Morphological changes (diversion, culverting & road crossings). Water quality & flows	No diversions proposed. Design (including culverts, silt fences & buffers). Timing, seasonality & weather dependency of works. Compliance with OPW & IFI etc.
Designated sites & sensitive habitats	Water quality Suspended solids Sediment laden water	All the above measures to protect water quality including buffer zones, surface water management plans & drainage control.

Operational	Potential impacts	Mitigation measures
Less permeable surfaces	Surface water runoff. Increased hydraulic loading during storms. Watercourse erosion & aquatic ecosystems.	Design (including interceptor drains, swales, check dams & settlement ponds). Timing, seasonality & weather dependency of works.
Human health	Public & private & water supplies. Flood risk	No mapped ground water protection zones in vicinity. Low risk of downstream flooding (subject to the above drainage measures)

The EIAR concluded that, subject to the implementation of the mitigation measures, there would be no significant residual adverse impacts on surface or ground water quality, aquatic ecology or any public or private water supplies, group water schemes or wells, and that the proposed development would not give rise to a downstream flood risk. It did not predict any significant adverse cumulative impacts during the decommissioning or operational phases subject to the implementation of similar construction phase mitigation measures during decommissioning.

6.8.4 Existing wind farm

Details of the existing 25 x turbine windfarm are summarised in section 1.5.1 above.

6.8.5 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider riparian environment in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the relevant EIAR studies and field investigations which are summarised in section 6.8.3 above. I also had regard to the concerns raised by the Observers which are summarised in sections 4.0 (including NPWS, the NI agencies and the Loughs Agency) in relation to potential impacts on water quality, aquatic wildlife, (including Freshwater pearl mussel populations in the Lowerymore River downstream of the works), fisheries and designated sites, and I had regard to the Applicants' response to these concerns. I also had regard to relevant national, regional and local planning policy which is summarised in section 3.0 and to the presence of an operational windfarm on the site.

Discussion:

The excavation and movement of large quantities of peat and spoil (c. 43, 000m3) around the site has the potential to release fine sediments into the network of streams and drains that traverse the site via surface water runoff, and these watercourses drain to larger waterways in the surrounding area on both sides of the RoI and NI Border.

The unregulated release of sediments could have an adverse long-term impact on water quality and aquatic ecology within and downstream of the site. This would include impacts related to the chemical balance in dystrophic and oligotrophic waters within the upland lakes and Lough Eske, downstream floating river vegetation in the River Foyle & Tributaries, fisheries and aquatic invertebrates, including Freshwater pearl mussel populations in the Lowerymore River. Accidental fuel spillages from storage areas, machinery and vehicles also have the potential to contaminate surface and groundwater. The underground cabling works for the grid connection and any road improvement works along the delivery route also have the potential to release sediments into nearby watercourses and cause disturbance to wildlife.

The potential impact of the proposed works on geology, soils and peat stability are dealt with in section 6.7 above and the potential impacts on terrestrial ecology will be assessed in sections 6.9 below.

A buffer zone of at least 50m would be provided around the upland lakes and along the watercourses within the site, and most of the proposed turbines, ancillary structures and associated infrastructure would be located outside the buffer zones. This is with the exception of river crossings and some turbine locations which will be assessed in more detail below. The EIAR also proposes a comprehensive suite of mitigation measures to control and manage the release of fine sediments and hydrocarbons into surface and ground water to prevent pollution of nearby water courses and underlying groundwater bodies. These measures are summarised in section 6.8.3 above they mainly include design features, the utilisation of existing windfarm drains, a series of avoidance measures as part of an outline Construction

Environmental Management Plan (oCEMP), and a detailed Surface Water Management Plan, along with ongoing site inspections and water quality monitoring.

The EIAR and associated Technical Appendices contain the results of extensive ecological surveys of the windfarm site, upland lakes, surrounding watercourses and the rivers they drain into. The surveys did not record the presence of any sensitive aquatic plant or animal species (including Freshwater pearl mussel) within the on-site lakes or watercourses or in the downstream rivers. However, the surveys did record the presence of several species of fish (including salmon, trout, loach, lampreys and European eel) along with suitable spawning and nursery habitat for Salmon downstream of the proposed windfarm in the Lowerymore and Glendergan Rivers. The surveys also recorded evidence of foraging otters along some streams, and several populations of FWPM in the Lowerymore River downstream of the proposed works along the N15 and within the area covered by the FWPM Sub-basin Management Plan. The watercourse surveys did not record the presence of any new Freshwater pearl mussel individuals or populations, other than those previously recorded in the Lowerymore River before it flows into Lough Eske.

A number of turbines would be located close to the 50m buffer around drains, watercourses and lakes (T2, T3, T5, T6, T7 & T13) which ultimately drain into tributaries of the Derg, Gendergan, Finn and Lowerymore Rivers, and hence the Lough Foyle & Tributaries SAC & ASSI and Lough Eske & Ardnamona Woods SAC. All these turbines would be located within areas where the Landslide Susceptibility Risk is Low and five of the turbines (T2, T3, T5, T6 & T7) would be in the vicinity of existing turbines and access tracks. One of the turbines (T2) would be located on the edge of the 50m buffer zone and just over 50m from Loughnaweelagh lake to the E which also straddles the NI Border with Killeter Forest. Three of the turbines (T5, T6 & T7) would be located within the 50m buffer of small, isolated drains (artificial & natural) but at a substantial distance from the nearest lake. Five of the turbines (T2, T3, T5, T6 & T7) would be located in areas where the EIAR identified the Risk of Peat Instability is Negligible to Low, and negligible with respect to impacts on sensitive receptors in the unlikely event of instability. Two of the turbines (T3 & T13) would also be located within areas where the Risk of Peat Instability is Negligible to Low but where the risk of significant impacts on a sensitive receptor in the event of

peat instability is Moderate (within heathland habitats and proximate to lakes & rivers). Having regard to the foregoing, I am satisfied that the proposed suite of mitigation measures would adequately protect water quality and aquatic ecology in the vicinity of 4 of the turbines (T2, T5, T6 & T7), however the location of 2 of the turbines requires further assessment (T3 & T13).

Turbine no.3 in the NE section would be located between c.370mOD and 380mOD, where peat depths are shallow (less than 2.0m) and the Landslide Susceptibility Risk is Low but where the EIAR identified the risk of significant impacts on a sensitive receptor in the unlikely event of peat instability as Moderate. Lough Nabrackboy, which drains into Lough Golagh, is located to the NW of T3, and an unnamed Lough is located to the immediate NE, however the submitted documents do not indicate a direction of flow between the two lakes. T3 would occupy a position along an existing access track and within an area occupied by existing turbines (T14 & T15). It is proposed to upgrade the existing access track which runs parallel to an artificial drain and to construct the turbine and some of the associated infrastructure within the 50m buffer zone around the unnamed lake. T3 and part of its associated infrastructure would be located within approximately 35m and 20m of this lake respectively. It is noted that the existing T15 to the S is located outside the 50m buffer whilst T14 to the N is located within the overlapping 50m buffer for both lakes. However, it is also noted that the 50m buffer was originally recommended as a minimum separation distance for windfarm developments of a much lesser scale than the current generation of turbines relative to nearby watercourses and waterbodies. I have serious concerns that the proposed intrusion of the substantial excavation and foundation works required for the c.180m high turbine into the 50m buffer zone around the unnamed lake, would have a significant adverse impact on water quality, irrespective of the extensive suite of EIAR mitigation measures (which includes pumps at this location). It is not possible to ascertain the direction of flow which not clearly indicated on the submitted documents. However, from my on-site observations, it appears that the un-named lake drains NW into Lough Nabrackboy and hence to Lough Golagh, and also having regard to the position of the EIAR map contours which indicate that the lands slope down towards Lough Nabrackboy. This concern could be addressed by way of a planning condition which requires the

omission of T3 from the overall windfarm project because of its close proximity to an un-named upland lake.

Turbine no.13: in the SW section would be located between c.290m and 300mOD, where peat depths are shallow (less than 2.0m) and the Landslide Susceptibility Risk is Low but where the EIAR identified the risk of significant impacts on a sensitive receptor in the unlikely event of peat instability as Moderate. T13 would occupy a position to the E of the access road and within an area not previously occupied by a turbine or any other windfarm infrastructure. It is proposed to construct a crossing over the watercourse [Derg River (Crocknacunny)] and to construct the turbine and most of the hardstanding within the 50m buffer zone. The turbine and part of the hardstanding would be located within approximately 40m and 25m of the watercourse respectively. As previously stated, and for the same reasons, I have serious concerns that the proposed intrusion of substantial windfarm works into the 50m buffer zone around the watercourse could have a significant adverse impact on water quality in the river and also downstream of the works, irrespective of the extensive suite of EIAR mitigation measures (which includes pumps at this location). This concern could be addressed by way of a planning condition which requires the omission of T13 from the overall windfarm project because of its proximity to a watercourse.

The results of the EIAR water quality and aquatic ecology surveys are considered to be robust. The mitigation measures are considered acceptable (subject to the omission of T3 and T13) as they will prevent any serious long-term damage to water quality and aquatic ecology including foraging otter, fisheries and Freshwater pearl mussel populations in and along the surrounding watercourses, and the further afield designated sites (including Lough Foyle SAC & ASSI and Lough Eske and Ardnamona Woods SAC) that the watercourses ultimately discharge to. I am also satisfied that the various EIAR studies were undertaken in accordance with the relevant national and international guidance for such works. However, the EIAR erosion and sediment control measures should be operational before construction works commence and the entire works should be monitored by an on-site Ecologist on a regular basis. These issues could be addressed by way planning conditions.

Freshwater Pearl Mussel:

The area to the W of the site is located within a Freshwater Pearl Mussel Catchment for Lough Eske and this designation extends marginally into the western part of the site. It is noted that Section 6.5(e) of the County Development Plan's wind energy standards states that wind energy developments should not be located within in any of the FWPM catchments for the Sub-Basin Management Plans for 6 areas including the Eske Catchment. However, having regard to the marginal nature of the overlap and the presence of an existing windfarm on the site, and the small scale of works proposed at this location, I am satisfied that the proposed development would not contravene this particular Development Plan objective or standard.

The presence of this species has been recorded downstream of the windfarm site in the Lowerymore River which flows into Lough Eske. It is a Qualifying Interest species for the Lough Eske and Ardnamona Woods SAC, however the main populations are located in the River Eske as it flows out of the Lough towards Donegal Bay to the SW (refer to section 8.0 below which deals with AA & European sites). Freshwater Pearl Mussel has not been recorded in any of the on-site or nearby watercourses. EPA records indicate that water quality in the nearby watercourses is Q4 Good Status, however Freshwater pearl mussel requires pristine water quality and Q5 status to thrive. It is also noted that the watercourses that drain the NW section of the site traverse steep gradients and have high flow rates. I am therefore satisfied that these watercourses do not provide a suitable habitat to sustain FPM communities or populations.

Notwithstanding this conclusion, measures should be put in place to ensure that there is no diminution in water quality as a result of the works and that the existing populations downstream of the site in the Lowerymore River are not adversely affected during the decommissioning, construction or operational phases of the windfarm. I am satisfied that the proposed mitigation measures (summarised above) would minimise sediment and contaminant run off during the construction phase, and that the measures are adequate to ensure the maintenance of existing water quality within the various rivers, subject to the EIAR mitigation measures.

Notwithstanding this conclusion, the NPWS raised concerns about the role and function of the Ecological Clerk of Works (ECoW) during the construction phase and this was elaborated on by the applicant in the response submission. However, I note that the applicant stopped short of affording the ECoW the necessary authority to cease construction works when and if the need arises, and that their role would be advisory in this regard. Having regard to the scale of the proposed excavation and construction works within a sensitive peatland environment which has a direct aquatic connection to watercourses that provide habitats for several protected aquatic species (including otter, fish and Freshwater pearl mussel), I consider that the ECoW should have the authority to cease the relevant construction works, as required. This concern could be addressed by way of a planning condition, in the interest of protecting sensitive peatland habitats and aquatic habitats and species.

Regard has been had to the presence of an existing operational windfarm on the site, current levels of turf cutting on parts of the site, the separation distance between the windfarm site, grid connection and delivery route from the nearest recorded locations of sensitive aquatic species (fisheries, FWPM and otter). Regard has also been had the layout and siting of the project elements, which would be mainly set back c.50m from watercourses (except for river crossings) and the conditioned omission of T3 and T13. Having regard to the foregoing and subject to the stringent implementation of the EIAR mitigation measures, including ongoing inspections and monitoring, in combination with any recommended conditions for the construction and operational phases, I am satisfied that the proposed works would not have a significant adverse impact water quality, sensitive aquatic species, the food supply for otters, or any other sensitive ecological sites in the surrounding and wider area.

Finally, having regard to the characteristics of the underling bedrock, which is relatively impermeable, and the relatively unproductive nature of the Aquifer, I am satisfied that the proposed works would not have an adverse impact on groundwater quality or any wells in the vicinity, subject to the stringent implementation of the EIAR mitigation measures for the construction and operation phases of the project.

6.8.6 Conclusions

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of the EIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative impacts during the operational phase when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent, having regard to the conclusion of no significant impacts with respect to the project.

Conclusion: I have considered all the written submissions made in relation to water quality, aquatic ecology and designated sites, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion:

Having regard to all of the above, I am satisfied that the proposed development, including the turbines and associated infrastructure and the underground gird connection would not have a significant adverse effect on water quality, aquatic ecology, public water supplies or groundwater reserves, subject to the full implementation of the EIAR mitigation measures, any recommended conditions, and adherence to all relevant guidance and best construction practice. The proposed development would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, grid connections, plans or projects in the wider area.

6.9 Biodiversity (Terrestrial ecology - excluding birds)

6.9.1 Project description

The proposed development would comprise the excavation and construction work associated with the decommissioning of 25 existing turbines and the erection of 13 new turbines and associated infrastructure, underground cabling between the turbines, extended substation and battery storage facility, and the partial undergrounding of the grid connection through the site, along with minor road works along the delivery route.

6.9.2 Locational context

As previously stated, the site occupies a remote upland location within the extensive Barnesmore Bog NHA and there are several protected European and National sites in the surrounding area. The undulating site, which contains a range of mainly peatland habitats, is occupied by several upland lakes, the largest of which is the centrally located Lough Golagh. The site is traversed by a network of watercourses that ultimately discharge into the Derg, Glendergan and Finn Rivers to the E which flow into the Lough Foyle & Tributaries SAC/ASSI, the Finn River to the N and the Lowerymore River to the W which discharges to Lough Eske and Ardnamona Woods SAC. Other protected sites in the surrounding area include Pettigo Plateau and Lough Derg to the S, the Killeter Lakes & Bogs and River Foyle & Tributaries to the E, and Croaghonagh Bog to the N, and it is likely that mobile species from further afield sites visit Barnesmore Bog NHA.

6.9.3 Environmental Impact Assessment Report

Chapter 6 of the EIAR and associated Technical Appendices dealt with Biodiversity (and terrestrial ecology) within the windfarm site, the surrounding area and along the grid connection and delivery routes. Desktop studies walk over surveys and field surveys were undertaken between 2017 and 2019 and used to inform the conclusions of the EIAR and NIS. The EIAR identified sensitive sites located within a c.15km radius of the site. It mapped habitats, identified plant species, and conducted field surveys for mammals, amphibians, reptiles, and invertebrates within and close to the site. It identified the main potential impacts as habitat loss, fragmentation and

degradation (mainly Annex 1 peatland habitats within the NHA), disturbance to various plant and animal species, and bat collision with turbines. It proposed several mitigation measures (including timing & seasonality of works, buffers and preconstruction surveys) and concluded that there would be no adverse residual or cumulative impacts post mitigation.

Designated sites: the site is located within Barnesmore Bog NHA, it is not within a European site although it has aquatic connections to Lough Eske & Ardnamona Woods SAC and Lough Foyle & Tributaries SAC and ASSI via on and off-site watercourses, and there are several designated sites in the wider area.

Habitats: the site is mainly occupied by exposed peatland (Montane Heath, Blanket bog, Cutover bog, Degraded peat, Wet heath, Modified wet heat, Dry heath, Acid grassland, Wet grassland, Poor Fen & Flush & Quaking Bogs) along with Dystrophic lakes and Eroding rivers. Several habitats are listed in Annex 1 of the EU Habitats Directive and as being of National Importance).

Flora: none of the plant species recorded on or within 2km of the site (over c.30 years) are listed under the Wildlife Acts or covered by a Flora (Protection) Order, but 1 species (Fir clubmoss) is listed in Annex 11 of the EU Habitats Directive) and was recorded on the site in the late 1990s.

Bats: seasonal surveys were conducted between 2017 and 2019 in line with SNH & BCT Guidelines (including walkover surveys, static bat detectors, transect & vantage point surveys & manual activity surveys). Foraging and commuting bats are present within the site and surrounding area, although the site is not used for roosting (species include Soprano & Common pipistrelle, Leislers bat & Myotis sp.).

Other mammals: it notes the presence Badger, Otter, Pine martin and Red squirrel within or close to the site, and the likelihood of Irish hare & Hedgehog in the vicinity. Four Badger setts identified on site but not within 250m of infrastructure. No Otter breeding or resting sites recorded on site but may commute along watercourses.

Amphibians & Reptiles: it noted that Common frog, Smooth newt and Common Lizard are known to frequent the site and surrounding area, and the Reptile Survey recorded the presence of the Common Lizard within the site.

Invertebrates: it noted that several species of moth (emperor, fox & heath) frequent the site and surrounding area, there is no suitable habitat for Marsh Fritillary butterfly, and no rare or protected invertebrates were recorded during surveys.

Invasive species: Invasive plant and animal species were recorded, including Rhododendron in small patches in the site along the delivery route, Grey squirrel in at Killeter Forest, and American mink further afield.

EIAR Conclusions:

The EIAR identified potential impacts during the decommissioning, construction and operational phases (including the extent of habitat loss), and it concluded that there would be no adverse residual impacts on any nationally designated sites, habitats or species. This would be subject to the implementation of mitigation measures, pre-construction surveys, species translocation (if required), seasonal works, avoidance measures to protect bats around operational turbines, and the replacement / restoration of Annex 1 peatland habitats (draft Habitat Management Plan). The EIAR concluded that there would be no adverse cumulative impacts in-combination with other plans, projects, or windfarms in the wider area.

6.9.4 Existing wind farm

Details of the existing 25 turbine windfarm are summarised in section 1.5.1 above.

6.9.5 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider regional and local road network in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the relevant EIAR ecological studies which are summarised in section 6.9.2 above and the concerns raised by the Observers which are summarised in sections 4.0 (including NPWS & NI Agencies). Their concerns related to European sites, Priority & Annex 1 habitats, protected species, compliance with regulations, proximity to Killeter Forest (NI) and data presentation. I had regard the Applicant's response to these concerns and in particular the clarifications, elaborations and presentation of data contained in the response submission. I also had regard to relevant national, regional, and local

planning policy which is summarised in section 3.0 and to the presence of an operational windfarm on the site.

The windfarm site is not located with a European site although there are several sensitive sites (including SACs, SPAs, NHAs & ASSIs) within a 15km radius, and there is an aquatic connection to three SACs via on- and off-site watercourses. The site is located within Barnesmore Bog NHA which was designated after the existing windfarm was constructed, although the existing infrastructure is excluded from this designation. The site mainly comprises a mix of peatland habitats, upland lakes and watercourses. This includes Blanket Bog (Active & Inactive), Wet Heath, Montane Heath and Dystrophic Lakes, as well as Rhynchosporion depressions (a sub-habitat of Blanket Bog) and Floating river vegetation, which are all Annex 1 habitats, whilst Active Blanket Bog is a Priority Habitat. The proposed decommissioning, excavation and construction works would result in the inevitable loss of parts of these habitats. The windfarm site and environs are used by several animal species including mammals, amphibians and reptiles, some of which are protected, and it has foraging potential for several species of bats, and the proposed works could result in disturbance, displacement and loss of foraging grounds. The proposed works therefore have the potential to affect several habitats and species.

The potential impact of the proposed works on aquatic ecology have been assessed in section 6.8 above, the impacts on birds will be assessed in section 6.10 below and issues related to European sites will be addressed in Section 8.0 (Appropriate Assessment).

Barnesmore Bog NHA:

The EIAR states that Barnesmore Bog NHA is c.2, 183ha, of which the windfarm lands cover c.423ha and the project footprint would occupy c.7.25ha. The NHA was designated after the existing windfarm was constructed and the existing infrastructure has been excluded from this designation. The proposed development would result in the total loss of c.8.3ha of NHA and its constituent mosaic of habitats including c.4.4ha of Annex 1 habitat (refer below for a detailed habitat assessment). The proposed peatland restoration/replacement measures outlined in the EIAR draft Habitat Management Plan (Appendix 6.7) for the rehabilitation of a c.153ha area

within in Barnesmore Bog NHA would compensate for this loss (the windfarm is not located within a European site). Measures include the restoration of existing windfarm infrastructure to peatland habitat (c.1.22ha), restoration of mechanically cutover peat (c.1.21ha), blocking drains to restore blanket bog (c.3.49ha) and removing self-seeded conifers. On balance, there would be a substantial net gain in all peat and heathland habitats in the longer term.

Habitats and flora:

The proposed turbines and associated infrastructure would be located in the vicinity of several Annex 1 habitats. Although the EIAR surveys indicate that many of the habitats overlap at a number of locations, the potential impacts on the primary habitat will be the main subject of this analysis.

Active Blanket Bog*:* This Priority Annex 1 habitat is located in the vicinity of several turbines (T3, T5, T7, T8, T10 & T11) and the substation compound, and at other at other locations where it forms a mosaic with other peatland habitats. There would be a marginal loss of habitat at all 6 locations within the footprint of the development. However, in most cases the existing hardstandings and access tracks would be reutilised (T3, T5, T9 & T10) or the turbines would be micro-sited to substantially avoid this habitat (T7 & T11). The area around the substation is already disturbed. The estimated loss of Active Blanket Bog habitat would be negligible at 2 x turbines (T7 & T8) and it would range from c.0.007ha to c.0.05ha at 4 x turbines (T3, T5, T10 & T11). EIAR Table 6.25 concludes that the total loss of Active Blanket Bog habitat (exclusive) within the footprint of the development would be c.0.18ha, of which c.0.16ha would be from within the NHA. However, the total loss of Priority Blanket Bog habitat in Mosaic with other habitats throughout the site as a result of the overall works is estimated as c.1.3ha (and c. 2.31ha when Inactive Blanket Bog is included.)

Wet heath: This Annex 1 habitat is located in the vicinity of several turbines (T2, T4, T6 & T13), where it forms a mosaic with other peatland habitats (including Active Blanket Bog & Montane Heath). There would be a marginal loss of habitat at all 4 locations within the footprint of the development. However, in most cases the existing hardstandings and access tracks would be reutilised (T2, T4 & T6) although

1 x turbine (T13) would be sited within a mosaic of Wet Heath and Montane Heath (T13). The estimated loss of Wet Heath mosaic habitat would range from c.0.1ha to c.0.2ha at 3 x turbines (T2, T4 & T6), and 0.5ha at T13. EIAR Table 6.25 concludes that the total loss of Wet Heath habitat (exclusive) within the footprint of the development would be c.0.59ha, of which c.0.39ha would be from within the NHA. However, the total loss of Wet heath habitat in Mosaic with other habitats throughout the site as a result of the overall works is estimated as c.3.89ha.

Montane Heath: This Annex 1 habitat is located in the vicinity of several turbines (T1, T9, T10 & T12) where it forms a mosaic with other peatland habitats (including Active Blanket Bog & Wet Heath). There would be a marginal loss of habitat at all 4 locations within the footprint of the development, and in most cases the existing hardstandings and access tracks would be reutilised (T1, T9 & T10) whilst 1 x turbine (T12) would be mainly located on cutover bog. The estimated loss of this habitat mosaic would range from c.0.05ha to 0.23ha. EIAR Table 6.25 concludes that the total loss of Montane Heath habitat (exclusive) within the footprint of the development would be c.0.28ha, of which c.0.24ha would be from within the NHA. However, the total loss of Montane heath habitat in Mosaic with other habitats throughout the site as a result of the overall works is estimated as c.2.8ha.

Analysis:

It is noted that the turbines would not be entirely located within any of the above habitat mosaics, except for T13 in the SW section of the site which would be located within a mosaic of Wet heath and Montane Heath. The omission of this turbine was recommended in section 6.8 above having regard to its location within a sensitive area and proximity to a watercourse. Although the overall decommissioning and construction works (including the turbines, associated infrastructure, access tracks and underground grid connection) would result in a loss of fragments of Annex 1 habitats, including a combined total of c.1.3ha of Priority Blanket Bog habitat, the figure would be less than the combined totals outlined above for Active Blanket Bog, Wet Heath and Montane Heath because of the considerable overlap between the habitats. The direct loss of habitat would nonetheless be significant. Notwithstanding this, I am satisfied that the proposed peatland restoration/replacement measures outlined in the draft Habitat Management Plan would compensate for the loss of

habitat by enabling the rehabilitation of a c.153ha area within the NHA. Measures include the restoration of existing infrastructure to peatland habitat (c.1.22ha), restoration of mechanically cutover peat (c.1.21ha) and blocking drains to restore blanket bog (c.3.49ha). am satisfied that the measures contained in the draft Habitat Management Plan would contribute to the achievement of the overall objectives for Barnesmore Bog NHA.

The proposed excavation and construction work also have the potential to adversely affect the surrounding peatland environment and sensitive habitats by way of disturbance to peat morphology and hydrology. However, I am satisfied the impacts would not be significantly adverse, subject to the implementation of the mitigation measures outlined in sections 6.7 and 6.8 above in relation to peat stability, water quality and aquatic ecology. Measures should also be put in place to ensure that the works do not give rise to the erosion of around the perimeter of active intact peatland in the future. In the long term, it is also possible that the peatland habitats could be restored in the future after decommissioning.

Dystrophic lakes: Several turbines would be located at varying but significant distances from these Annex 1 aquatic habitats however, 1 x turbine (T3) would be located within c.25-30m of an unnamed lake the NE section of the site. The omission of this turbine was recommended in section 6.8 above having regard to its proximity to a sensitive waterbody. Having regard to the suite of EIAR mitigation measures outlined and assessed in sections 6.7 and 6.8 above in relation to ensuring peat stability, and protecting water quality and aquatic ecology, and the conditioned expansion of the role of the Ecological Clerk of Works, I am satisfied that there would be no significant adverse impacts on these lakes. This is subject to the full implementation of mitigation measures and any recommended conditions.

Poor Fen & Flush: This Annex 1 habitat is located around the Dystrophic lakes and in the vicinity of the substation compound where the lands are already disturbed. There would be no loss of damage to this habitat, subject to the implementation of the aforementioned mitigation measures in relation to ensuring peat stability and protecting water quality and aquatic ecology.

Other habitats: There is a myriad of habitats located within the overall site in the vicinity of the access road, underground grid connection and access tracks (including non-Annex 1 habitats). Most of these habitats would be marginally affected by the proposed works. However, having regard to the presence of the existing access road and access tracks, and the relatively small scale of the works relative to the existing infrastructure, I am satisfied that there would not be any significant loss of or damage to these habitats. This would be subject to the implementation of mitigation measures including measures to prevent peatland erosion in the future.

Flora: No protected plant species were identified within the site during the EIAR surveys although Fir clubmoss was recorded in c.1999. A final pre-construction survey for this species should be undertaken before works commence. This could be addressed by a planning condition.

Mammals:

***Bats*:** The exposed peatland site does not offer optimum conditions for bats however several species were recorded foraging in low numbers on the overall lands and in the vicinity of the proposed turbines during the EIAR surveys (including Leisler's bat, Common & Soprano pipistrelle, Myotis species & Brown long eared bat), although no roosts or potential roost sites were recorded. The site does not contain suitable commuting or foraging habitat for most of these species due to the absence of trees and hedgerows. However, Leisler's bat is less habitat dependent as it favours aerial hawking and is therefore at a higher risk of collision with turbines. The proposed windfarm would undoubtedly cause a temporary disturbance to bats during the decommissioning and construction phases. Although the rotor blades could give rise risk of collision for some species, it is noted form the surveys that the numbers are low and the managed absence of vegetation (and hence prey species) around the turbine bases would deter foraging activity in the vicinity of the turbines as these areas would comprise hardstandings. There would be little or no artificial lighting at night during the operational phase, except for aviation lights. I am satisfied that bats would gradually habituate to the windfarm during the operational phase with no significant adverse long-term impacts anticipated. I am satisfied that the surveys were substantially carried out in accordance with relevant SNH and BCI guidance.

Other mammals: The works would give rise to disturbance and displacement during the decommissioning and construction phases, however there would be no significant loss of foraging grounds and affected species would gradually habituate to the windfarm after the works are completed. The works would be located a substantial distance from 4 x Badger setts and 2 x unnamed burrows that may be used by Otters with no adverse impacts anticipated. Although it is possible that Otter commutes across the site via the on-site watercourses there is no physical evidence that they use the site on a regular basis. Given that the watercourses would not be affected by the works (other than at the river crossings and subject to water protection mitigation measures), no significant adverse impacts are anticipated for Otter in terms of loss of foraging grounds or prey species. Notwithstanding this conclusion, a pre-construction survey for mammals should be carried out before works commence on the site.

Amphibians & reptiles: A site specific survey for Common Lizard should be undertaken at the various project elements, seasonal restrictions on work should apply and a Derogation Licence would be sought prior to the translocation of any individuals to another part of the site is required.

Fisheries & aquatic species: Potential impacts are assessed in section 6.8 above.

Bird species: Potential impacts are assessed in section 6.10 below.

Invasive species: A small number of invasive plant and animal species were recorded, mainly along the haul route (rhododendron) and in the surrounding area (American mink & grey squirrel) and appropriate measures should be put in place to prevent the spread of invasive species by means of an IS Management Plan.

6.9.6 Conclusions

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of EIAR mitigation measures and any recommended conditions, and most species disturbed during construction will return and gradually habituate to the operational windfarm.

Cumulative Impacts: Any cumulative impacts during the operational phase when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent, having regard to the finding of not significant adverse impacts at project level.

Conclusion: I have considered all the written submissions made in relation to biodiversity including sensitive habitats and protected species, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion:

Having regard to the foregoing, I am satisfied that the proposed development, including the windfarm, infrastructure works and grid connection route, would not have any significant, adverse, long term residual impacts on any designated sites, habitats, flora or fauna in the area, subject to the full implementation of the EIAR mitigation measures, any recommended conditions and adherence to all relevant guidance and best construction practice. The proposed development would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, grid connections, plans or projects in the wider area.

6.10 Biodiversity (Terrestrial Ecology – Birds)

6.10.1 Project description:

The proposed development would comprise the excavation and construction work associated with the decommissioning of 25 existing turbines and the erection of 13 new turbines and associated infrastructure, underground cabling between the turbines, extended substation and battery storage facility, and the partial undergrounding of the grid connection through the site, along with minor road works along the delivery route.

6.10.2 Locational context

As previously stated, the site occupies a remote upland location along the NI Border, and the site and surrounding area is characterised by a mix of peatland habitats and upland lakes. The wider area is frequented by several bird species including raptors, wintering and water birds and there are several European sites within a 15km radius of the site which have been designated for their conservation importance for birds. The site is also located to the far SE of an extensive NPWS non-designated special protection area for Hen Harrier. There are c.40 lakes of varying sizes located within 15km of the site (including Lough Mourne to the N, Lough Eske to the W and Lough Derg to the S) and Donegal Bay is located to the SW.

6.10.3 Environmental Impact Assessment Report

Chapter 7.0 of the EIAR and associated Technical Appendices dealt with birds within the windfarm site, its environs and the wider area, and it identified the main impacts as habitats loss, collision risk and displacement. Several desktop studies, scoping exercises with relevant agencies, walkover surveys and detailed seasonal field surveys were undertaken between 2017 and 2019. The relevant designated sites (for birds) within a 15km radius of the site were identified. The bird surveys were used to identify the extent to which various species frequent and/or flyover the site and to inform the Collision Risk and Displacement Models for several target species. The

EIAR also identified the presence of several species in and around the site which have habituated to the presence of the existing turbines, and it noted the presence of several breeding species within c.100m of the operational windfarm. It stated that there was potential for Displacement effects during the works but that only small numbers of territories would be affected, and the effects would be managed by the mitigation measures contained in the outline Construction Management Strategy and the draft Habitat Management Plan. It concluded that the current sub-optimal breeding and foraging conditions would be enhanced for several species (including Hen harrier, Snipe & Golden plover).

The EIAR carried out seasonal dawn and dusk bird surveys of the site and surrounding area (500m, 800m & 2km) between 2017 and 2019 in accordance with the Scottish Natural Heritage Guidance and other relevant species-specific guidance. Seasonal Vantage Point (VP) surveys were undertaken, and bird observations and flight activity were recorded during the breeding and non-breeding seasons for a range of species (breeding, wintering & migratory), with specific surveys for Snipe and Red Grouse. A desk top survey was undertaken for SPAs within a 15km of the site.

The EIAR noted that there would be minimal habitat loss as the existing windfarm infrastructure would be utilised. It identified several species that would require further assessment of potential adverse impacts related to Displacement and Collision Risk. Of the c.16 species potentially at risk of Displacement within 500m of the turbines and associated infrastructure, it stated that only a small number of ground nesting species could be affected during construction and that an even smaller number of individuals would be affected during the operational phase. Collision Risk Modelling over a 30-year period was undertaken for the 8 x species recorded within the 500m turbine buffers at collision height (including Buzzard, Cormorant, Golden eagle, Golden plover, Heron, Kestrel, Peregrine falcon & White-tailed sea eagle). The predicted Collision Risk for all species was reduced under the current proposal as the number of turbines would be reduced from 25 to 13. It noted that monitoring of the existing windfarm since 2010 has not recorded any collisions.

The EIAR also considered long distance and in-combination effects. It identified several SPAs and lakes in the wider area, and it listed several other windfarms and projects within a 20km radius of the site. It concluded that the proposed development would not have a significant adverse effect on waterbirds or contribute to a barrier effect as the site is not regularly used as a migratory corridor.

EIAR Mitigation measures: The EIAR did not predict any adverse residual or in-combination impacts subject to the implementation of mitigation measures related to: avoidance by design; management of the decommissioning & construction stages; seasonality of works, pre-construction surveys & buffer zones; appointment of an Ecological Clerk of Works, adherence to the Construction Management Strategy & draft Habitat Management Plan; and post construction & operational monitoring. Post mitigation residual impacts ranged from Imperceptible & Not Significant (most species) to Slight - Not significant for 3 x species (Golden plover, Snipe & Hen harrier).

EIAR conclusion: The EIAR concluded that there would be disturbance during the decommissioning and construction phases, some habitat loss and species displacement, but that the birds would gradually habituate to the operational windfarm post construction, and the collision risk and mortality rate is low for all species. The EIAR did not predict any adverse impacts for birds which frequent or traverse the windfarm site and the surrounding area, across the seasons.

6.10.5 Assessment:

As previously stated, I surveyed the wind farm site and the surrounding area in County Donegal and Northern Ireland over a 3-day period in July 2020. I had regard to the relevant EIAR ornithology studies which are summarised in section 6.10.3 above. I also had regard to the concerns raised by the Observers which are summarised in sections 4.0 (including the NPWS and the NI agencies).

The concerns raised related to the potential adverse impacts on sensitive sites and protected species of bird (including Golden eagle, White-tailed sea eagle, Hen Harrier, Merlin, Curlew, Greenland white fronted goose, Snipe and Red grouse); the quality of the EIAR survey data, analysis, presentation of results and conclusions;

the omission of previous monitoring results in relation to the existing operational windfarm; and the absence of quantitative data in the cumulative impact assessment. I then had regard to the applicant's response to these concerns and in particular the clarifications, elaborations and presentation of data contained in the response submission, which also confirmed that no bird surveys of the operational windfarm had been undertaken until post 2010 when a monitoring protocol was introduced. Clarification was provided in relation to the extent of the surveys along with species recorded and linkages to operational windfarm (including red grouse, common sandpiper, curlew, golden plover & whooper swan) that were all consistently recorded present, some breeding and many well habituated. It is noted that the NI Agencies were satisfied with the survey effort and conclusions reached, that the project would not have an adverse effect on any breeding of nesting birds in NI, and that it would not have any adverse in-combination or barrier effects. I also had regard to relevant national, regional and local planning policy, which is summarised in section 3.0, and to the presence of an operational windfarm on site.

The site, which mainly comprises peatland habitats and upland lakes is not located within a European site, however it does lie within Barnesmore Bog NHA and to the SE of a further afield non-statutory special protection area of Hen Harrier. Barnesmore Bog NHA is designated for its peatlands however the NPWS Site Synopsis notes Red Grouse, Golden Plover and Peregrine Falcon occur on the site, and that Peregrine Falcon nest on the steep slopes of Barnesmore Gap. There are several European sites and NHAs within a 20km radius of the site which are designated for their importance to birds (including resident, breeding, migratory, water & wintering birds). The windfarm site is also frequented and/or overflown by several species of bird. The proposed works have the potential to affect bird species during the decommissioning, construction and operational phases through loss of, damage to, or fragmentation of habitat, noise disturbance, displacement and turbine collision risk. The windfarm also has the potential to contribute to cumulative barrier effects in combination with other windfarms, plans and projects in the wider area.

The EIAR carried out extensive seasonal bird surveys over a 2-year period (2017 to 2019) within a 500m buffer zone around the turbines and associated infrastructure, and within an 800m and 2km radius of the works. The surveys concluded that site

offers suitable conditions for a variety of foraging and ground nesting birds, and several species were recorded within the site and the surrounding area. The results are summarised in section 6.10.3 above and I am satisfied that the survey effort substantially accords with current SNH Guidance and other relevant site and species-specific guidelines. It also carried out a desk top survey of the SPA designated lakes within a 15km radius of the site, and although an original survey effort would have been preferable, it is acknowledged that recent surveys have been undertaken at these locations in relation to neighbouring windfarms, and a review of the data is acceptable. The proposed development would replace the existing 25 x 60m high turbines with 13 x c.180m high turbines, and the EIAR carried out a comparative analysis of the main potential impacts (including collision risk).

The proposed development will undoubtedly cause a disturbance to birds during the decommissioning and construction phases because of the works and resultant loss of habitat, and temporary species displacement may occur. The turbines have the potential to affect bird mortality rates in several species as a result of colliding with turbine rotor blades, and to act in-combination with other windfarms in the surrounding area to create a barrier effect for foraging and commuting species.

Raptors (excluding Hen Harrier): The EIAR bird surveys noted the occasional presence of several raptors (including Golden Eagle, White-tailed sea eagle, Peregrine falcon, Buzzard, Merlin, Kestrel & Sparrowhawk) in the vicinity of the site, and flights were recorded at collision height for all species except for Buzzard, Merlin and Sparrowhawk. According to the NPWS Site Synopsis for Barnesmore Bog NHA Peregrine Falcon is known to nest in the steep slopes of Barnesmore Gap to the NW. Breeding locations were confirmed for Kestrel, Merlin & Peregrine falcon within 2km to 5km of the site. The EIAR Collision Risk modelling for Raptor species indicate that there is a negligible risk of collision with turbines during the operational phase over the 30-year lifespan of the windfarm. The comparative assessment of the existing and proposed windfarms indicated that the risk of collision would be reduced under the current proposal because of the reduction in the number of turbines (25 v 13). The EIAR states that no collisions have been recorded at the existing windfarm since monitoring began in 2010, however is noted that the existing turbines are c.60m high and that the proposed turbines would be c.180m. Having regard to the small numbers of each species recorded during the surveys, their recorded and

evident ability to habituate to the existing turbines, the proposed reduction in turbine numbers and the results of the Collision Risk Modelling, I am satisfied that the proposed development would not pose a significant threat to Raptors. Any loss of foraging habitat would be mitigated by the measures contained in the draft Habitat Management Plan and Raptor species would gradually habituate to the area post construction. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality.

Hen Harrier: The site is located to the far S of an extensive NPWS non-designated special protection area for Hen Harrier and this species has an historical association with the surrounding elevated peatland areas. The EIAR surveys did not record any breeding activity or nests within the site, although a nest and winter roosts were recorded more than 1.5km and 4.0km of the windfarm site respectively, including a nest on lands to the N. No flights were recorded at collision height. Although the area has foraging and nesting potential, it is not entirely optimal because of the exposed nature of the landscape which lacks sufficient open canopy tree cover for foraging birds. The EIAR mitigation measures provide for pre-construction surveys and on-going monitoring during and after construction along with the creation of a 500m buffer around any identified nests. The draft Habitat Management Plan would ensure the restoration and/or enhancement of the peatland habitats post construction which would counter any adverse effects of habitat loss on this species during the works. These measures are considered acceptable in terms of site management, species protection and habitat enhancement. Collision Risk Modelling was not undertaken for Hen harrier as it was not recorded proximate to the locations of the proposed turbines. I am satisfied that the project would not have any adverse effects on Hen Harrier at the site or the wider area. However, having regard to the protected status of this species and the historic importance of the surrounding area for Hen harrier, a species-specific monitoring programme should be put in place for this species during the decommissioning, construction, and operational phases. This could be addressed by way of a planning condition. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality.

Golden plover: Barnesmore Bog NHA and the surrounding elevated peatlands provide suitable nesting and foraging habitat for this species. The EIAR recorded the presence of this species on the site during winter walkover surveys and flights were recorded at collision height, however breeding locations were recorded well outside the 800m disturbance zone and within 2km to 5km of the site. Pre-construction surveys should be undertaken before works commence and if a nest is identified a 500m buffer should be provided around the nest until it has been vacated by the chicks. The Collision Risk Modelling for this species indicated that the risk of collision with turbine rotor blades would be lower under the current proposal when compared with the existing windfarm. Any loss of foraging habitat would be mitigated by the measures contained in the draft Habitat Management Plan and this species would gradually habituate to the area post construction. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality.

Snipe & Red grouse: Barnesmore Bog NHA and the surrounding designated sites and elevated peatlands provide a suitable habitat for Snipe and Red Grouse. The presence of a Red Grouse Sanctuary in the vicinity of the site is noted. The EIAR surveys recorded the presence of these species (breeding, nesting & foraging) within Barnesmore Bog and the windfarm site, and Snipe was recorded nesting close to the existing infrastructure. The nest locations were not static and varied over time and no flights were recorded at collision height for either species. Pre-construction surveys should be undertaken before works commence and if a nest is identified, a 500m buffer should be provided around the nest until it has been vacated by the chicks. The proposed windfarm would not have any significant adverse effects on breeding populations of Red Grouse or Snipe subject to the full implementation of the EIAR mitigation measures and recommended conditions. Any loss of foraging habitat would be mitigated by the measures contained in the draft Habitat Management Plan and these species would gradually habituate to the area post construction. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality.

Other species: Barnesmore Bog NHA and the surrounding elevated peatlands provide suitable nesting and foraging habitat for a variety of other bird species. The EIAR recorded the presence of several species on the site during the breeding walkover surveys, with nests located close to existing infrastructure (including Grey

wagtail, Meadow pipit, Common sandpiper & Skylark). Breeding locations and winter roosts were recorded for Curlew and Raven within the windfarm site but outside 800m disturbance zone. The occasional presence of several other foraging species was recorded on the site (including Cormorant, Widgeon, Heron & Ring ouzel) and within 2km to 5km of the site. No flights were recorded at collision height for any of these species although the construction works could disturb Ring ouzel. Any loss of foraging habitat would be mitigated by the measures contained in the draft Habitat Management Plan and this species would gradually habituate to the area post construction. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality.

Wintering & migratory waterbirds: There are several European and nationally sensitive waterbodies in the surrounding area which are designated for their conservation importance for peatlands and waterbirds. The nearby designated sites include Croaghonagh Bog SAC and Cashenavean Bog NHA to the N, and Barnesmore Bog NHA within which the windfarm would be located. These sites have been designated for their importance as peatland habitats although they also frequented and/or flown over by some species of waterbird (including Greenland white fronted goose and Whooper swan). The further afield European sites include Pettigo Plateau and Lough Derg SPAs to the S, Lough Nillan Bog SPA to the SE and Donegal Bay SPA to the SW. These sites have been designated because of their importance as peatlands or lakes, and for wintering and migratory waterbirds of conservation interest. Pettigo Plateau SPA is designated for a nationally important flock of Greenland White-fronted goose. Lough Nillan Bog SPA is used by several species of conservation interest (including Greenland White-fronted goose, Merlin, Golden plover & Dunlin). Lough Derg SPA is designated for its importance to Lesser Black-backed Gull and Herring Gull but not wintering waterfowl due to the oligotrophic character of the system. According the NPWS Site Synopsis, it was previously used by GWFG however this species moved W to Pettigo Plateau and further afield coastal grasslands. Donegal Bay SPA is frequented by several species of waterbird (including Great Northern Diver, Light-bellied Brent Goose, Common Scoter and Sanderling) which were not recorded present on or close to the site. Several other species of waterbird frequent the c.40 lakes within a c.20km radius of

the site (including White-fronted goose, Northern diver, Red-throated diver, Whooper swan, Herring gull, Redshank, Tufted duck, Woodcock & Black-headed gull). Potential effects of the proposed development on European sites and their SCI species is addressed in Section 8.0 of this report (Appropriate Assessment).

The EIAR Vantage Point surveys in and around the windfarm site assessed waterbird activity survey data within several lakes located within a 15km radius. The VP surveys indicates that the windfarm site is not regularly foraged or overflown by waterbird species associated with the European sites and surrounding lakes. Although Whooper swan was recorded at the site, it was well below the turbine rotor blade height and Collision Risk Modelling was not carried out. It is also noted that the main commuting route for wintering and migratory waterbirds is located to the W of the site along Barnesmore Gap, and that Greenland whited fronted goose tend to utilise Pettigo Plateau to the S of the site and coastal grasslands to the SW. No significant adverse long-term impacts on wintering and migratory waterbirds are anticipated in terms of loss of foraging habitat, species displacement or increased mortality because of collisions with turbine rotor blades.

Other species: Most other species recorded within the site and surrounding area will gradually habituate to the works after the decommissioning and construction phases are completed, the windfarm is operational and the measures contained in the Habitat Management Plan are implemented. The risk of collision with turbine rotor blades would be reduced under the current proposal. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality.

NI bird populations: No adverse impacts on NI bird populations anticipated.

Barrier & cumulative effects: There are several operational, permitted, and planned windfarms within a 20km radius of the site on both sides of the NI Border, and several infrastructure projects are planned for the surrounding area. The EIAR concludes that there would be no cumulative impacts or cumulative barriers to movement because of in-combination effects. It is noted that this conclusion is not supported by reference to specific survey data. However, the survey results indicate that the windfarm would not be located along a migratory or commuting route and given the lack on any local impacts on birds, it is unlikely that the windfarm would

contribute to cumulative impacts in the wider area in-combination with other projects. It is also noted that the EIAR does not deal with barriers to movement between nesting or roosting sites and foraging areas, however I am satisfied that the windfarm would not have an adverse impact on such movements, given the absence of significant local impacts. Furthermore, the Pettigo Plateau Nature Reserve SPA to the S of the site forms part of a network of sites from E to W of the SPA (including Lough Nillan SPA), and it is likely that GWFG travel between these sites and forage on the intervening peatlands.

6.10.5 Conclusions

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of EIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative impacts during the operational phase when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent, having regard to the conclusion of no significant adverse impacts at project level.

Conclusion: I have considered all the written submissions made in relation to birds, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion:
Having regard to the foregoing, I am satisfied that the proposed development would not have any significant, adverse, long term or permanent impacts on bird species subject to the full implementation of the EIAR mitigation measures, any recommended conditions and adherence to all relevant guidance and best construction practice. Furthermore, the proposed development would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, grid connections, plans or projects in the wider area.

6.11 Cultural Heritage & Material Assets (Tourism & Heritage)

6.11.1 Project description and location

The proposed windfarm would comprise decommissioning the existing 25 turbines, constructing 13 new turbines along with associated site works including new and upgraded access tracks, undergrounding of overhead cable, and the provision of an energy storage facility, upgraded substation, met mast, and temporary construction compounds within the site, along with minor works along the delivery and grid connection routes to the SW and W.

6.11.2 Project location

The windfarm would occupy a scenic upland location in SE Donegal along the NI Border, and the lands are mainly characterised by peatland with rocky outcrops and several small lakes. The site is located within a designated NHA and an Area of High Scenic Amenity. The windfarm would be located to the E of a major tourist route (N15) which extends from Donegal Town to Ballybofey through the dramatic Barnesmore Gap, with the Bluestack Mountains and Lough Eske to the W, the Sperrin Mountains and Killeter Uplands to the E (NI) and Lough Derg to the S. There are several high amenity areas, protected views, cultural heritage features, walking routes and cycleways in the wider area on both sides of the Border, and there are several dispersed houses and farms to the W of the site. The Clogher substation is located to the near W of the site and Donegal Airport is located to the far NW.

6.11.3 Environmental Impact Assessment Report

Chapter 13 of the EIAR dealt with archaeology and cultural heritage and several desktop and field studies were undertaken, including a walkover survey of the site. The EIAR did not identify any National Monuments, Recorded Monuments or sites of archaeological or heritage interest within the site although it was noted that peat bogs have archaeological potential. It also noted the presence of two sites of archaeological interest along the NE site boundary with NI (Crannogs) and several

features within a c.2.5km radius of the site (Enclosures, Standing in Stones & Kilns), and the Lough Derg Pilgrimage site is located to the S of the site.

The EIAR identified several further afield National Monuments that are located on both sides of the Border (including Donegal Castle, Donegal Friary, Standing Stones and Megalithic Tombs). Several more Recorded Monuments were identified within a 5km radius of the turbines (Ringforts, Megalithic Tombs, Standing Stones, Kilns, and Pilgrimage Stones). The closest features are located c.130m to 140m to the SW of the site boundary at Clogher (Mound & Standing Stone). The EIAR concluded that no sites of archaeological interest would be adversely affected by the proposed works subject to mitigation measures (archaeological monitoring during construction, preservation by record, avoidance and protection).

The EIAR did not identify any Protected Structures or NIAH sites within the site or environs although it noted the presence of several Protected Structures (RoI) and Listed Buildings (NI) in the wider area. It identified several heritage features (NIAH & Industrial Heritage Record NI) within c.2.5km of the site (2 x bridges, a milestone, and the ruins of an old Stil House) and the nearest feature comprises a former railway bridge at Keadew Upper (Keadew Bridge). The Lough Derg Pilgrimage Centre is located to the S of the site. It did not identify any Protected Structures or heritage features along the grid connection route although several were noted in the vicinity of the haul routes, including “The Ring” close to the junction the L2595 and L2015 to the SW of the site where widening is proposed. The EIAR concluded that proposed works would not have an adverse impact on any of these features subject to mitigation measures (including monitoring of groundworks and protection of features during construction).

Parts of ***Chapters 5, 11, 12 & 13*** of the EIAR dealt with Tourism with regard to employment, attractions, high amenity areas, landscapes, views, walking routes and cycleways (Refer to Sections 6.4 and 6.6 above). It stated that research indicates that that windfarms do not have an adverse effect on tourism and concludes that the tourism potential of the area would not be affected by the proposed turbines.

Chapter 12 of the EIAR dealt with material assets with respect to agriculture, fisheries, telecommunications, grid connection and aviation. It concluded that the windfarm would not adversely affect any of these resources or interfere with air traffic, and no electromagnetic interference is expected.

The EIAR did not predict any adverse impacts on cultural heritage, tourism, or material assets, subject to mitigation measures with no residual or cumulative impacts predicted.

6.11.4 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area over a 3-day period in July 2020. I had regard to the relevant EIAR archaeological, cultural heritage, tourism and material assets studies which are summarised in section 6.11.3 above. I had regard to the concerns raised by the Observers (Irish Aviation Authority and NI agencies) which are summarised in Section 4.0, and the applicant's response to these concerns. I also had regard to relevant national, regional and local planning policy, which is summarised in Section 3.0, and to the presence of an operational windfarm on the site.

Archaeology:

There are no National Monuments, Recorded Monuments or known sites of archaeological interest located within the windfarm site or the immediately surrounding area, however it is possible that the peatland site may contain as yet undiscovered artefacts. A condition should therefore be attached to ensure that the groundworks are monitored during the decommissioning and construction phases and that any discoveries are recorded and preserved by record. It is noted that Donegal County Council and the NI Agencies did not raise any concerns in relation to archaeology or monuments.

Protected structures & NIAH:

There are no Protected Structures or NIAH sites located within the windfarm site or the immediate vicinity, although there are several interesting features in the surrounding area including Keadew Bridge (NIAH) to the SW of the site could be affected by the works external to the site.

There are also several features of interest located along the delivery route (N56 and N15) and care should be taken to ensure that no damage occurs to buildings and structures in the wider area. It is noted that Donegal County Council and the NI Agencies did not raise any concerns in relation to cultural heritage subject to the attachment of standard planning conditions.

Tourism:

The main tourism issues relate to the visual impact of the proposed windfarm on the surrounding high amenity landscapes and protected views along with the consequent impact on tourism and recreation (including mountaineering, hillwalking, and cycling). These issues have been mainly addressed in section 6.4 above. It is noted that recent research on the impact of windfarms on tourism and upland recreational activities is varied and inconclusive. However, having regard to the conclusions reached in section 6.4 above, I am satisfied that the proposed development would not have a significant impact on tourism or the tourist potential of the area. Furthermore, the proposed windfarm would not interfere with the character or setting of any heritage features which form part of the tourism offer of the county because of the separation distances between the windfarm and these features.

Material assets:

The proposed windfarm would not have a significant impact on aviation, having regard to the separation distance and subject to compliance with standard aviation conditions and it is noted that the IAA had no objections subject to its standard visibility requirements. The concerns raised by Derry and Strabane District Council are noted in relation to the protection of TV, mobile phone, and internet connectivity. I am satisfied that there would be no significant impacts from electromagnetic interference given the sparsely populated nature of the area. However, measures (including regular monitoring) should be put in place to avoid interference. The

operational windfarm project will contribute to the provision of renewable energy and contribute to a reduction in greenhouse gas emissions, although it is noted that this would be weighed against the loss of peatland which functions as a carbon sink (refer to section 5.3 of the Planning Assessment of a more detailed assessment). It is also noted that Donegal County Council did not raise any concerns in relation to telecommunications or aviation subject to the attachment of standard conditions. The proposed windfarm would also not interfere with agriculture or fisheries (refer to sections 6.7 & 6.8 above for a more detailed assessment of potential impacts on soils, water quality and fisheries).

6.11.5 Conclusions

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of EIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative impacts during the operational phase when taken in combination with other windfarms, plans and projects in the surrounding area would be minimal in extent, having regard to the conclusion of no significant adverse impacts at project level.

Conclusion: I have considered all the written submissions made in relation to material assets and cultural heritage, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Overall conclusion:
Having regard to the above, I am satisfied that the proposed development would not adversely affect cultural heritage, tourism, or material assets to any significant extent, subject to the full implementation of the EIAR mitigation measures and any recommended planning conditions. The proposed development would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, the grid connection routes, or plans and projects in the area.

6.12 Summary of Environmental Impact Assessment

Population & human health	Assessment & Mitigation
Potential for the following impacts on population and human health during the construction & operational phases.	Refer to section 6.6 for detailed assessment of potential impacts on population and human health.
Noise & vibration**:** Potential for impacts on residential amenities from construction activities & minor intrusion when operational.	Not considered significant given the separation distances.
Dust: Dust & air quality issues during the construction phase.	Compliance with guidance for noise & dust control during construction & operation; and noise & dust monitoring.
	Phasing & timing of construction works.
	Compliance with best construction management measures.
Traffic: Traffic volumes during construction have the potential for local air quality & safety impacts.	Prior notification of work, traffic management & phased delivery of components.
Shadow flicker: Potential minor disturbance at some houses.	Maximum feasible distance from houses, shadow flicker monitoring & turbine pre-programming.
Electromagnetic interference*:* Minor potential for impacts on TV, mobile phone & internet connections.	On-going monitoring.
Visual intrusion: Potential for visual impacts on houses and tourism.	Layout and siting c.750m away from nearest non-consenting property owner.
Health & safety: Potential for on-site accidents.	Compliance with all relevant health & safety legislation during works.

Residual Effects: There will be some increase in noise, dust & traffic emissions during the construction and operational phases however predicted levels are within guidance limit values. Residual impacts are not predicted to be significant.
Cumulative Impacts: None predicted.
Conclusion: I have considered all the written submissions made in relation to population and human health, in addition to any specifically identified in section 6.6 of this report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Air & Climate	Assessment & Mitigation
Potential for the following impacts on air and climate during the construction and operational phases. ***Dust***: Dust & air quality issues during the construction phase. ***Traffic emissions***: Traffic volumes during construction have the potential for local air quality impacts.	Refer to section 6.6 for detailed assessment of potential impacts on air and climate. Compliance with guidance for dust control during construction & operation; and noise monitoring. Phasing & timing of construction works. Compliance with best construction management measures. Prior notification of work, traffic management & phased delivery of components.
Residual Effects: There will be some increase in dust & traffic emissions during the construction phase however predicted levels are within guidance limit values and residual impacts are not predicted to be significant.	
Cumulative Impacts: None predicted.	
Conclusion: I have considered all the written submissions made in relation to air and climate, in addition to any specifically identified in section 6.6 of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

Landscape	Assessment & Mitigation
Potential for the following impacts on the landscape during the construction and operational phases. ***Scale, height & extent of visibility***: The turbines will be visible from a number of locations. ***Impact on protected views & landscape character***: Potential impacts when viewed from outside the immediate area minor impacts when viewed from inside or nearby. Potential impacts on Protected Views to the NW and SE.	Refer to section 6.4 for detailed assessment of potential impacts on the landscape, protected views and visual amenity. No realistic measures given the scale & height of the turbines and their location on an elevated upland site. As above
Residual Effects: Impacts predicted to be moderate to the NW and SE.	
Cumulative Impacts: Some impacts predicted but not considered to be significant.	
Conclusion: I have considered all the written submissions made in relation to landscape, in addition to any specifically identified in section 6.4 of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

Biodiversity	Assessment & Mitigation
Potential for the following impacts on biodiversity during the construction and operational phases of the proposed development.	Refer to sections 6.8, 6.9 & 6.10 for detailed assessment of potential impacts on biodiversity (water quality, aquatic ecology, terrestrial ecology and birds).
Habitats: Loss & fragmentation of Priority 1 Blanket bog habitat (not within a European site), Annex 1 peatland & heathland habitats, and other sentive habitats.	Draft Habitat Management Plan (restoration & enhancement of c.153ha). Recommended omission of 2 x turbines (T3 & T13)
Fisheries & aquatic ecology: Potential pollution of watercourses by suspended solids & building materials released during construction, and from potential peat slippage during & after construction.	As above. Suite of measures including timing and sequencing of works; on-site drainage; buffer zones, silt traps, interceptors & settlement ponds; water treatment; approved storage & disposal sites.
Potential adverse impacts on fisheries (Atlantic salmon) & aquatic invertebrates (Freshwater pearl mussel).	As above. Adherence to best construction practice methodologies; peat & spoil management plan; ongoing inspection & monitoring. Timing of works, seasonality & Ecological Clerk of Works. Compliance with standards for water quality, construction practice methodologies.

Birds: Potential adverse impacts related to disturbance during construction & operation, displacement, habitat loss collision risk, mortality & barrier effect	As above. Pre-construction surveys Buffer zones around nests (if found). Ongoing inspections & monitoring. Regular visual inspections (construction & operational phases).
Bats: Potential effects on foraging species during construction & operation.	As above. Minimal artificial lighting. Timing of works & seasonality. Regular inspections & monitoring. Condition requiring vegetation (and insect) free buffers at turbine bases
Other species: Potential disturbance during construction to mammals (badger & otter) & reptiles (Common Lizard)	Pre-construction surveys Buffer zones around watercourses (otter) Timing of works & seasonality. Regular inspections & monitoring. Ecological Clerk of Works.
Residual Effects: None predicted following mitigation but some localised loss of Priority 1 Blanket Bog Habitat and Annex 1 peatland habitats (Non-SAC/SPA).	
Cumulative Impacts: None predicted.	
Conclusion: I have considered all the written submissions made in relation to biodiversity, in addition to any specifically identified in sections 6.8, 6.9 & 6.10 of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

Land, soil & water	Assessment & Mitigation
Potential for the following impacts on land, soil & water during the construction and operational phases.	Refer to sections 6.8 & 6.8 for detailed assessment of potential impacts on land soil & water including peat stability.
Excavations: of turbine bases, access tracks & grid connection and the disposal of a significant amount of peat could have potential impacts on water quality, fisheries & aquatic life, and site stability (peat slippage).	Suite of measures including timing and sequencing of works; on-site drainage; buffer zones, silt traps, interceptors & settlement ponds; water treatment; approved storage & disposal sites; best construction practice methodologies; adherence to peat management plan; & ongoing inspection & monitoring. Recommended omission of 2 x turbines (T3 & T13)
Ground and surface water contamination: Leakage & spillages from construction vehicles and fuel stores & peat storage areas.	Buffer zones around watercourses; suite of measures as above; bunding; & adherence to best construction practices
Residual Effects: Residual impacts not predicted to be significant subject to the implementation of mitigation measures.	
Cumulative Impacts: None predicted.	
Conclusion: I have considered all the written submissions made in relation to land, soil & water, in addition to any specifically identified in this sections 6.8 & 6.8 of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

Material assets & cultural heritage	Assessment & Mitigation
Potential for the following impacts on material assets & cultural heritage during the construction and operational phases.	Refer to sections 6.5 & 6.11 for detailed assessment of potential impacts on material assets & cultural heritage.
Impact on local road network: Potential for short term disruption during road & junction upgrades, and during construction and deliveries.	Compliance with Council and TII requirements in relation to road improvements, permits and licences.
Road safety**:** Potential for short term disruption during construction.	Consult with local community prior to turbine delivery; sequencing & timing of deliveries; use of appropriate vehicles.
Agriculture & fisheries: Potential impacts related to site excavations on surface water runoff, water quality and wildlife (aquatic life & fisheries)	Refer to previous tables for ecology and land, soils & water. Compliance with relevant guidelines.
Features of heritage interest: Potential impacts on unrecorded artefacts within the site.	Advance testing & on-going monitoring.
Residual Effects: Residual impacts are not predicted to be significant.	
Cumulative Impacts: None predicted	
Conclusion: I have considered all the written submissions made in relation to material assets and cultural heritage, in addition to any specifically identified in this sections 6.5 & 6.11 of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

6.13 Summary of interactions & Interrelationships

I have also considered the interrelationships between factors and whether this might as a whole affect the environment, even though the effects may be acceptable when considered on an individual basis. In particular the potential arises for the following interactions and interrelationships.

Population & human health:

- Noise, dust & shadow flicker
- Air Quality & climate
- Landscape & visual amenity
- Material Assets (electromagnetic interference)
- Road and traffic (safety & disturbance)

Air & climate

- Noise & dust
- Roads & traffic (emissions)
- Population & human health

Landscape

- Population & human health (visual amenity)
- Material Assets & Cultural Heritage (tourism & recreation)

Biodiversity:

- Hydrology (water quality & fisheries)
- Population & human health (water quality)
- Material assets (tree felling)
- Landscape (visual amenity)
- Soils & geology (siltation & water quality)
- Land

Land, Soil & water:

- Air quality
- Biodiversity (terrestrial & aquatic)
- Population & human health

Material Assets & Cultural Heritage:

- Population & human health
- Land

- Landscape (visual)
- Roads and traffic (disturbance & safety)

In conclusion, I am satisfied that any such impacts can be avoided, managed and mitigated by the measures which form part of the proposed development and any recommended planning conditions.

6.14 Consideration of cumulative impacts

The following existing or permitted relevant plans and projects are located within a 20km radius of the proposed development on both sides of the NI Border:

- Ballybofey Stranorlor N15 Bypass
- N15 Blackburn Bridge Re-Alignment Scheme
- Clogher substation
- Permitted Meenbog windfarm to N
- Operational Meenadreen windfarm to S
- Several operational & permitted windfarms within a 5-20km radius.

In conclusion, I am satisfied that such effects can be avoided, managed and mitigated by the measures which form part of the proposed development, mitigations measures, and suitable conditions. There is, therefore, nothing to prevent the granting of permission on the grounds of cumulative effects.

6.15 Consideration of risks associated with major accidents and/or disasters

None identified and the potential impacts associated with climate change have been factored into the relevant sections of the EIAR.

6.16 Reasoned Conclusion on Significant Effects

Having regard to the examination of environmental information contained above, and in particular to the EIAR and the submissions from the planning authority, prescribed bodies and NI agencies in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment have been identified in this report as summarised below.

- The ***risk of peat erosion and peat instability during the construction and operational phase*** through a lack of control over, or mismanagement of the excavation and peat/spoil removal works. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - stability and erosion and the implementation of a Peat and Spoil Management Plan.

- The ***risk of pollution of ground and surface waters during the construction phase*** through a lack of control of surface water during excavation and construction, the mobilisation of peat sediments and other materials during excavation and construction and the necessity to undertake construction activities in the vicinity of existing watercourses. The construction of the proposed project could also potentially impact negatively on ground and surface waters by way of contamination through accidents and spillages. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - design and avoidance; accidental spills and contamination; and drainage management.

- ***Biodiversity impacts*** arising from habitat fragmentation, changes to the vegetation on the site, loss of foraging habitat and disturbance to birds, connections to foraging, aquatic and water dependent habitats and general disturbance during the construction and operational phases. These impacts would be mitigated by the agreement of measures within a Construction and

Environment Management Plan and the implementation of mitigation measures which include: - Pre-construction Bird & Mammal Surveys; Peat Stability and Water Quality (as above); an Invasive Species Management Plan; the appointment of an Ecological Clerk of Works; and the implementation of a Habitat Management Plan.

- The proposed project gives rise to an increase in ***vehicle movements and resulting traffic impacts*** during the construction phase and significant impacts on the road network can be avoided by the proposed works along the road network which include an upgraded site access junction. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - pre-construction road condition surveys; deliveries; and the implementation of a Construction Traffic Management Plan.

- ***Air pollution and noise during the construction and operational phase*** which would impact negatively on sensitive receptors and populations in the vicinity of the site. These impacts are substantially avoided by the limited number of sensitive receptors in close proximity to the proposed development. Any remaining impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - air quality/dust and noise.

- ***Shadow flicker during the operational phase*** such as would impact negatively on sensitive receptors and populations in the vicinity of the site. These impacts are substantially avoided by the limited number of sensitive receptors in close proximity to the site and any remaining impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan.
- The project could give rise visual impacts on the **landscape** during the operational phase as a result of the installation of tall structures.

- The proposed development would have ***potentially significant positive environmental impacts*** during the operational phase from the generation of renewable energy with a corresponding reduction in carbon emissions.

In ***conclusion***, having regard to the above identified significant effects, I am satisfied that subject to mitigation measures proposed the proposed development would not have any unacceptable direct or indirect impacts on the environment.

7.0 APPROPRIATE ASSESSMENT

7.1 Compliance with Articles 6(3) of the EU Habitats Directive

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

7.2 Natura Impact Statement

The application was accompanied by a Natura Impact Statement (NIS) which contained a Stage 1 AA Screening Report and a Stage 2 NIS. The reports described the site and the proposed development, and utilised the extensive data collected as part of the EIAR desk and field surveys. The AA Screening and NIS reports confirmed that the proposed development (including the grid connection) would not be located within any European sites. The AA screening exercise identified 13 European sites within a 15km radius of the proposed works, it had regard to the EIAR ecological surveys and assessments [water quality, aquatic & terrestrial ecology, bird surveys (including displacement & collision risk assessments)], and it screened out the sites which would not be affected by the proposed development.

The ***AA Screening*** exercise identified the following 5 European sites that have the potential to be affected by the proposed development:

- Lough Eske & Ardnamona Wood SAC
- River Foyle & Tributaries SAC (UK)
- River Finn SAC
- Lough Derg SPA
- Pettigo Plateau Nature Reserve SPA

The ***NIS*** listed the Conservation Objectives, Qualifying Interests and Special Conservation Interests for each of these sites. It identified the potential sources of direct and indirect impacts on the sites, assessed the potential impacts relative to the Conservation Objectives for each site. It had regard to the EIAR water quality assessments and ecological surveys and concluded that the risk for the habitats and species which are designated as Qualifying Interests and Special Conservation Interests for the European sites was minimal subject to the implementation of the EIAR mitigation measures. It formally concluded that the proposed development, in view of the best scientific knowledge and on the basis of objective information, either individually or in-combination with other plans and projects, is not likely to have any significant adverse effects on the Conservation Objectives or overall integrity of any European Sites.

7.3 AA Screening Assessment

The main issues related to ecology and the concerns raised by the Observers are summarised and addressed in section 4.0 of this report and section 6.0 contains an environmental impact assessment, and sections 6.8 to 6.10 should be read in conjunction with this assessment.

The proposed development would not be located within an area covered by any European site designations and it is not relevant to the maintenance of any such sites. The following 15 European sites are located within a 15km radius of the windfarm site and their relevant Qualifying Interests and Special Conservation Interests and approximate separation distances from the site are listed below.

SACs	Site code	Relevant QIs	Separation distances	Aquatic link
Lough Eske & Ardnamona Wood	000163	Oligotrophic waters Atlantic salmon Freshwater PM	c.3km W c.0.3 km W of road works	Yes Yes
Dunragh Loughs/ Pettigo Plateau	001125	Wet heaths Blanket Bog	c.4.0 km S	No

Croagnonagh Bog	000129	Blanket Bog	c.3.5 km N	No
River Finn	002301	Oligotrophic waters Peatland habitats Atlantic salmon Otter	c.7 km NE c.8km SE	Possible Yes
Donegal Bay (Murvagh)	000133	Mudflats & sandflats Dunes & slacks Harbour seal	c.10 km SW	Yes
Meenaguse/ Ardbane Bog	000172	Blanket bogs	c.11 km W	No
Meenaguse Scragh	001880	Wet heath	c.12km W	No
Lough Nillan Bog	000165	Oligotrophic waters Blanket bogs	c.14 km NW	No
Tamur Bog	001992	Wet heaths Blanket bog Peat depressions	c.14 km S	No
Ballintra Bog	000115	Dry heaths Limestone pavement	c.14 km SW	No
River Foyle & Tributaries	0030320 (UK)	Floating river veg Atlantic salmon Otter	c.15 km E	Yes

SPAs	**Site code**	**Conservation Interests**	**Separation Distances**	**Mobile/ aquatic links**
Pettigo Plateau Nature Reserve	004099	Greenland White-fronted Goose	c.4 km S	Yes
Lough Derg (Donegal)	004057	Lesser BB Gull Herring Gull	c.7 km SE	Yes
Donegal Bay (Murvagh)	004151	Great N Diver Brent goose Common scooter Sanderling Waterbirds	c.10 km SW	Yes
Lough Nillan Bog	004110	Merlin & Dunlin Golden plover Greenland WFG	c.14 km NW	Yes

The potential effects relate to:

- Transport of pollutants in ground or surface water flowing into the European sites via on-site tributaries.

- Ex-situ impacts on qualifying species outside the European sites but which are an integral and connected part of the population of qualifying interest species such as Otter.

- Loss of foraging lands and interference with flight lines of bird species associated with the European sites, or mortality related to collision with turbines.

I am satisfied that all but 5 of these sites can be screened out of any further assessment because of the nature of the European site, the absence of relevant Qualifying Interests downstream of the works, the absence of an aquatic connection between the European site and the windfarm site, the location of the European site significantly outside of the core foraging range of birds in the SNH Guidance Assessing Connectivity with SPAs Version 3 (2016) document (including Merlin, Golden plover & Dunlin at Lough Nillan), or the absence of any recorded species during the 2 year EIAR surveys (including waterbirds at Donegal Bay).

The 5 relevant European sites that remain after the AA Screening exercise are:

SACs	SPAs
Lough Eske & Ardnamona Wood SAC River Foyle & Tributaries SAC River Finn SAC	Pettigo Plateau Nature Reserve SPA Lough Derg SPA

AA Screening Conclusion

In conclusion, having regard to the nature and scale of the proposed development, to the separation of the windfarm site from the European sites, to the nature of the qualifying/conservation interests and conservation objectives of the European sites and to the available information as presented in the EIAR regarding ground and surface water pathways and mobile connections between the windfarm site and the

European sites, and other information available, it is my opinion that the proposed development has the potential to affect 5 of the European sites having regard to the conservation objectives of the relevant sites, and that progression to a Stage 2 Appropriate Assessment is required.

7.4 Appropriate Assessment:

The relevant details for the 5 remaining European sites within the Zone of Influence of the proposed development are summarised below:

Site name	Conservation Objectives	Relevant QIs & SCIs	Attributes & Targets
Lough Eske & Ardnamona Wood SAC (IR000163)	To maintain or restore the favourable conservation condition of the habitat(s) and/or the species for which the SAC has been selected.	Oligotrophic waters & Petrified Springs Freshwater PM Salmon	Habitat area & distribution; Vegetation composition & distribution; Water quality & levels; Substrate quality Distribution; Population; Water quality, Substrate quality & Holt fish Distribution; Adult spawning; Fry, Smolt & Redd abundance; & Water quality
River Foyle & Tributaries SAC (UK0030320)	To maintain (or restore where appropriate) Atlantic Salmon, Ranunculion vegetation & Otter to favourable condition.	Atlantic salmon Otter Ranunculion veg	As above As below Habitat distribution; Water quality; Vegetation composition & Floodplain connectivity.
River Finn SAC (002301)	To maintain or restore the favourable conservation condition of the habitat(s) and/or the species for which the SAC has been selected.	Oligotrophic waters Salmon Wet Heaths Blanket/Quaking	As above As above Habitat area & Distribution; Ecosystem function; Community diversity;

		bogs Otter	Vegetation composition & structure& drainage. Distribution; Extent of habitat (land, river & lake); Couching sites & holts; & Fish biomass
Pettigo Plateau Nature Reserve SPA (004099)	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA.	Greenland white fronted goose	None specified.
Lough Derg SPA (004057)	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.	Lesser black backed gull & Herring Gull	None specified

Favourable Conservation Status is achieved when:

1. ***Habitats***

- The natural range (and area covered) is stable or increasing,
- The specific structure and functions which are necessary for its long-term maintenance exist now and for the foreseeable future,
- The conservation status of its typical species is favourable.

2. ***Species***

- Population dynamics data indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats,
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future,
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Lough Eske and Ardnamona Woods SAC:

This SAC is located to the W of the windfarm site and it has been designated for its importance to several freshwater habitats (including Oligotrophic waters containing very few minerals of sandy plains within the lake, & Petrifying springs with tufa formation along the N side of the Lowerymore River) and two aquatic species (Freshwater Pearl Mussel & Atlantic Salmon). The watercourses in the Eske catchment are also part of a FWPM sensitive area which supports an internationally important population of FWPM and the surrounding lands are covered by a FWPM Sub-Basin Management Plan, which extends marginally into the western section of the windfarm site. According to the NPWS, this species is distributed throughout the River Eske from the Lough to the estuary at Donegal Bay. The SAC designation extends along the Lowerymore River and some of its tributaries which are located close to the windfarm site, and there are known FWPM specimens located downstream of the site before the Lowerymore River enters Lough Eske.

The proposed windfarm would not be located within this European site and there would be no **direct** effects on the SAC as a result of the proposed works.

There are aquatic connections between this SAC and the windfarm site, access tracks, underground grid connection and haul route (along the N15 and local roads). The connection is via on-site drainage ditches and watercourses that discharge to tributaries of the Lowerymore River at locations where the river and some of its tributaries are covered by the SAC designation. Some of the minor works along the haul route (N15) would be located close to the Lowerymore River whist other minor works at Clogher (L2595/2015) would be close to its tributaries. However, the bulk of the works (including the turbines) would mainly be located a substantial distance from the watercourses covered by the SAC designation.

There is potential for adverse effects on water quality during the decommissioning, construction and operational phases of the windfarm, associated infrastructure, and underground grid connection. There is therefore potential for **indirect** effects on some of the Qualifying Interest species in this SAC as a result of the unmitigated release of fine sediments during construction work and hydrocarbons by way of

accidental spillages from machinery. These indirect effects could affect the chemical balance of the QI Oligotrophic Waters within Lough Eske and the QI Petrifying springs within the Lowerymore River (leading to eutrophication), and QI Atlantic Salmon and Freshwater Pearl Mussel populations in the Lowerymore River and Lough Eske (resulting in smothering & habitat deterioration). It is noted that the on and off-site watercourses that flow into the Lowerymore River do not support FWPM or Atlantic salmon in any of its stages or provide an optimal habitat for these species due to their high gradient and highly erosive nature.

The EIAR construction phase mitigation measures, which include a suite of water quality protection measures and a Surface Water Management Plan, would ensure that any fine sediments released during the decommissioning and construction phases, or any hydrocarbon contaminants resulting from accidental spills during the decommissioning, construction and operational phases, would not reach the SAC. None of the key attributes or targets for the relevant QI habitats and species (summarised above) would be adversely affected.

It can be reasonably concluded on the basis of best scientific knowledge therefore that the proposed development will not adversely affect the integrity of the River Lough Eske and Ardnamona Woods SAC in view of the sites' Conservation Objectives.

River Finn SAC and River Foyle & Tributaries SAC:

A section of the River Finn SAC is located c.7km to NE of the windfarm site and another section is located c.8km to the SE of the site. Both sections ultimately drain into the River Foyle system to the NE in NI. The River Finn SAC has been designated for its importance to several Qualifying Interest habitats (Oligotrophic waters, Wet heaths, Blanket bog and Quaking bog) and 2 x species (Salmon and Otter). The River Finn SAC discharges to the River Foyle and Tributaries SAC which has been designated for its importance for one Qualifying Interest habitat (Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation) and two species (Atlantic Salmon and Otter).

The N section of the site is potentially connected to the River Finn SAC via on-site drainage ditches and watercourses that ultimately drain N and then E to form a confluence with the River Foyle and Tributaries SAC c.15km to the NE of the site. The SE section of the site is also potentially connected to the River Finn SAC via on-site drainage ditches and watercourses which drain S and SE to the Derg/ Gendergan Rivers. This watercourse flows SE and then NE to connect with the N section of the River Finn SAC to the E of the site, where both watercourses merge to form part of the River Foyle and Tributaries SAC, which ultimately drains into Lough Foyle SAC to the far N of the site.

The proposed windfarm would not be located within either of these European sites and there would be no **direct** effects on the SACs because of the proposed works.

None of the QI habitats for the River Finn SAC are located immediately downstream or in close proximity to the windfarm site. Although the Ranunculion community is present downstream of the works in the River Foyle and Tributaries SAC the EIAR water quality mitigation measures and substantial separation distance are sufficient to ensure that there would be no adverse effects on this Qualifying Interest.

There is potential for **indirect** effects on water quality and some of the Qualifying Interest habitats and species in both SACs during the construction and operational phases. These indirect effects could affect Salmon (smothering & habitat deterioration) and Otter (disturbance and loss of preys) in the River Finn SAC, and the Ranunculion community (water quality) in the River Foyle and Tributaries SAC.

However, the EIAR construction phase water quality mitigation measures would ensure that any fine sediments released during the excavation and construction works, or any contaminants resulting from accidental spills or accidents would not reach the SACs. It is noted that the EIAR post construction monitoring during the operational phase would continue to protect water quality although this is not necessary to reach a conclusion of no adverse effect. None of the key attributes or targets for the relevant QI habitats and species (summarised above) would be adversely affected.

It can be reasonably concluded on the basis of best scientific knowledge therefore that the proposed development will not adversely affect the integrity of the River Finn SAC and River Foyle & Tributaries SAC in view of the sites' Conservation Objectives.

Pettigo Plateau Nature Reserve SPA:

This SPA is located c.4km to the S of the windfarm site boundary and a similar distance from the nearest off-site activity (haul route works), and it has been designated for its importance to wintering Greenland white-fronted goose (GWFG). According to the NPWS Site Synopsis, this SPA to the W of Lough Derg comprises an extensive complex of blanket bog, wet heath, lakes and pools in an area of low hills and broad basins (c.690ha). At the time this site was designated as a SPA in 1996 it was being utilised by a GWFG population, however prior to this in the 1980s the flock utilising this site largely deserted the bogs in favour of coastal grassland sites (including Durnesh Lough SPA to the W). The Site Synopsis concludes that GWFG still occurs within this site and that it is one of the few places where this species continues to utilise peatland habitats.

The EIAR carried out extensive bird surveys of the site and surrounding area which were used to inform the NIS and the survey data is summarised and assessed in the section 6.10 above. A wide variety of bird species was recorded on and in the vicinity of the windfarm site. It was concluded from the surveys that the windfarm site and environs are not regularly used by the GWFG which occupy the Pettigo Plateau Nature Reserve SPA even though the site lies inside the 8km core foraging range (as per the 2016 SNH Guidance). Furthermore, the ongoing monitoring data collected at the existing operational windfarm since 2010, which was referred to the applicant's response to the submissions received from the DHC&G (NPWS), indicate that there is no record of any collisions with turbines or fatalities for this species.

It is noted that several other SPAs, which have been designated for their importance to GWFG, are located to the SE, S and SW of the windfarm site, but well outside the 8km core foraging range for the proposed development. However, these SPAs are located in relatively close proximity to the Pettigo Plateau SPA and I consider that it

is likely that GWFG commute between these nearby sites and use the intervening peatland for foraging.

I am satisfied with the applicant's survey effort which extended over a 2-year period combined with the use monitoring data collected at the existing operational windfarm since 2010, accords with the requirements of the EU Birds Directive and relevant SNH Guidance, and it contains sufficient survey data to justify the conclusion of no significant adverse effects on GWFG which is a designated Conservation Interest for this SPA.

It can be reasonably concluded on the basis of best scientific knowledge therefore that the proposed development will not adversely affect the integrity of the Pettigo Plateau Nature Reserve SPA in view of the sites' Conservation Objectives.

Lough Derg SPA:

This SPA is located c.7km to the SE of the windfarm site and it has been designated for its national importance to Lesser black-headed Gull and Herring Gull. According to the NPWS Site Synopsis this SPA comprises a large, oligotrophic lake with several islands. A large colony of nesting gulls was discovered on Inishgoosk Island in the 1970s. A survey in 1999 estimated a population of 500 pairs of Lesser Black-backed Gull and an estimated 100 pairs of Herring Gull were also present.

The EIAR carried out extensive bird surveys of the site and surrounding area which were used to inform the NIS and the survey data is summarised and assessed in the section 6.10 above. A wide variety of bird species was recorded on and in the vicinity of the windfarm site. It was concluded that the windfarm site and environs are not regularly used by the 2 x SCI species of gull which occupy the Lough Derg SPA and that the bird surveys confirm that the site is not regularly overflow by this species. Furthermore, the ongoing monitoring data collected at the existing operational windfarm since 2010, which was referred to the applicant's response to the submissions received from the DHC&G (NPWS), indicate that there is no record of any collisions with turbines or fatalities for this species.

I am satisfied with the applicant's survey effort which extended over a 2-year period combined with the use of monitoring data collected at the existing operational windfarm since 2010, accords with the requirements of the EU Birds Directive and relevant SNH Guidance, and it contains sufficient survey data to justify the conclusion of no significant adverse effects on Lesser black-headed Gull and Herring Gull which are a designated Conservation Interest for this SPA.

It can be reasonably concluded on the basis of best scientific knowledge therefore that the proposed development will not adversely affect the integrity of the Lough Derg SPA in view of the sites' Conservation Objectives.

Appropriate Assessment Conclusion:

I concur with the conclusions reached in the NIS that the proposed windfarm development (including cable connections and hauls routes) will have no adverse effects (direct, indirect or in-combination) on the Conservation Objectives, Qualifying Interests or Special Conservation Interests for the Lough Eske and Ardnamona SAC, River Foyle and Tributaries SAC, River Finn SAC, Pettigo Plateau Nature Reserve SPA or Lough Derg SPA, or for any other European Site.

7.5 Appropriate Assessment conclusion:

I consider it reasonable to conclude on the basis of the information on the file, which I consider adequate in order to carry out a Stage 2 Appropriate Assessment, that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European site Nos. 000163, UK0030320, 002301, 004099 and 004057, or any other European site, in view of the site's Conservation Objectives.

8.0 RECOMMENDATION

I recommend that planning permission should be granted for the proposed development for the reasons and considerations set down below, subject to compliance with the attached conditions and in accordance with the following Draft Order.

Reasons and considerations

Having regard to:

a. The National Planning Framework – Ireland 2040,
b. The Climate Action Plan, 2019,
c. The Regional Spatial & Economic Strategy for the Northern & Western Region 2019,
d. the "Wind Energy Development Guidelines - Guidelines for Planning Authorities", issued by the Department of the Environment, Heritage and Local Government in June 2006 (and Draft Amendments, 2019),
e. the policies of the planning authority as set out in the Donegal County Development Plan, 2018-2024,
f. the distance to dwellings or other sensitive receptors,
g. the submissions made in connection with the planning application,
h. the likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European Sites, and
i. the report and recommendation of the Inspector.

Appropriate Assessment:

The Board considered the Screening Report for Appropriate Assessment, the Natura Impact Statement and all other relevant submissions and carried out an appropriate assessment screening exercise and an appropriate assessment in relation to the potential effects of the proposed development on designated European Sites. The Board noted that the proposed development is not directly connected with or necessary for the management of a European Site and considered the nature, scale and location of the proposed development, as well as the report of the Inspector. In completing the appropriate assessment, the Board adopted the report of the Inspector and concluded that, by itself or in-combination with other plans and projects in the vicinity, the proposed development would not be likely to have an adverse effect on any European site in view of the sites' conservation objectives.

Environmental Impact Assessment:

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

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

(b) the Environmental Impact Assessment Report (EIAR) and associated documentation submitted in support of the planning application,

(c) the submissions received from the local authority, prescribed bodies and transboundary bodies, and

(d) the Inspector's report.

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment. The Board agreed with the examination, set out in the Inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the planning application. The Board considered that the main

significant direct and indirect effects of the proposed development on the environment are, and would be mitigated, as follows:

- Noise, vibration, dust and shadow flicker during the construction and/or the operational phases would be avoided by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP) which include specific provisions relating to the control of dust, noise and shadow flicker.
- The risk of peat instability and peat erosion during the construction and operational phases which would be mitigated by the implementation of measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP) which include specific provisions relating to peat and spoil management.
- The risk of pollution of ground and surface waters during the construction phase which would be mitigated by the implementation of measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP) which include specific provisions relating to groundwater, surface water and peat erosion.
- Biodiversity impacts, including on habitats, otters, birds, bats, fisheries and aquatic invertebrates, would be mitigated by the implementation of specific mitigation to protect otters, birds, bats, fisheries and aquatic invertebrates, during the construction and/or operational phases and the implementation of a draft Habitat Management Plan.
- The increase in vehicle movements and resulting traffic during the construction phase would be mitigated by the upgraded site access, the preparation of a Construction Traffic Management Plan.
- Landscape and visual impacts would arise during the operational phase from the insertion of the turbines and met mast into the upland setting, the location and siting of which would assist in assimilating the works into the landscape.

- The impact on cultural heritage would be mitigated by archaeological monitoring with provision made for resolution of any archaeological features or deposits that may be identified.
- Positive environmental impacts would arise during the operational phase from the generation of renewable energy.

The Board completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures proposed as set out in the EIAR, and the implementation of the measures proposed in the draft Habitat Management Plan, and subject to compliance with the conditions set out below, the effects of the proposed development on the environment, by itself and in combination with other plans and projects in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions of the Inspector.

Proper planning and sustainable development:

It is considered that subject to compliance with the conditions set out below the proposed development would accord with European, national, regional and local planning and related policy, it would not have an unacceptable impact on the landscape or ecology, it would not seriously injure the visual or residential amenities of the area or of property in the vicinity, and it would 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.

9.0 CONDITIONS

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the 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 commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.
   Reason: In the interest of clarity.

2. The development shall be amended as follows:

   (a) Turbine no.3 (and all associated infrastructure), which would be located adjacent to an un-named upland dystrophic lake in the north east section of the site and within the 50m buffer zone around this lake, shall be omitted in its entirety, in to order to protect the integrity of and water quality within this lake.

   (b) Turbine no.13 (and all associated infrastructure), which would be located on lands in the SW section of the site not currently occupied by any existing windfarm infrastructure and within a section of Barnesmore Bog NHA which comprises a mosaic of EU Annex 1 heathland habitats, and within the 50m buffer zone around a watercourse, shall be omitted in its entirety, in to order to protect the integrity of this section of the NHA and water quality in the adjacent watercourse.

   Reason: To protect the environment and in the interests of the proper planning and development of the area.

3. The period during which the development hereby permitted is constructed shall be 10 years from the date of this order.
   Reason: In the interests of clarity.

4. This permission shall be for a period of 30 years from the date of the first commissioning of the wind farm.
   Reason: To enable the planning authority to review its operation in the light of the circumstances then prevailing.

5. The developer shall ensure that all construction methods and environmental mitigation measures set out in the Environmental Impact Statement, Natura Impact Statement and associated documentation are implemented in full, save as may be required by conditions set out below.
   Reason: In the interest of protection of the environment.

6. The developer shall ensure that all peat related mitigation measures are implemented in full and monitored throughout the life cycle of the construction works and monitored throughout the operational phase.
   Reason: In the interest of protection of the environment.

7. The developer shall ensure that all measures set out in the draft Habitat Management Plan and associated documentation are implemented in full, save as may be required by conditions set out below.
   Reason: In the interest of protection of the environment and to ensure the protection, restoration and enhancement of peatland habitats within Barnesmore Bog NHA.

8. The decommissioning and construction works shall be limited between 08.00- and 18.00-hours Monday to Saturday excluding Bank Holidays.
   Reason: To protect the amenities of nearby residential properties.

9. The operation of the proposed development, by itself or in combination with any other permitted wind energy development, shall not result in noise levels, when measured externally at nearby noise sensitive locations, which exceed:

   (a) Between the hours of 7am and 11pm:

      i. the greater of 5 dB(A) $L_{90,10min}$ above background noise levels, or 45 dB(A) $L_{90,10min}$, at standardised 10m height above ground level wind speeds of 6m/s or greater

      ii. 40 dB(A) $L_{90,10min}$ at all other standardised 10m height above ground level wind speeds

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

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

   Reason: In the interest of residential amenity.

10. The following shadow flicker requirements shall be complied with:

    (a) Cumulative shadow flicker arising from the proposed development shall not exceed 30 minutes in any day or 30 hours in any year at any dwelling.
    (b) The proposed turbines shall be fitted with appropriate equipment and software to control shadow flicker at dwellings.
    (c) Prior to commencement of construction, a wind farm shadow flicker monitoring programme shall be prepared by a consultant with experience of similar monitoring work, in accordance with details to be submitted to the planning authority for written agreement. Details of monitoring programme shall include the proposed monitoring equipment and methodology to be used, and the reporting schedule.

    Reason: In the interest of residential amenity.

11. The following design requirements shall be complied with:

    (a) The wind turbines including masts and blades, and the wind monitoring mast, shall be finished externally in a light grey colour.
    (b) Cables within the site shall be laid underground.
    (c) The wind turbines shall be geared to ensure that the blades rotate in the same direction.
    (d) No advertising material shall be placed on or otherwise be affixed to any structure on the site without a prior grant of planning permission.

    Reason: In the interest of visual amenity.

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

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

13. Details of aeronautical requirements shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. Prior to commissioning of the turbines, the developer shall inform the planning authority and the Irish Aviation Authority of the as constructed tip heights and co-ordinates of the turbines and wind monitoring masts.
Reason: In the interest of air traffic safety.

14. Prior to commencement of development, a transport management plan for the construction stage shall be submitted to, and agreed in writing with, the planning authority. The traffic management plan shall incorporate details of the road network to be used by construction traffic, including over-sized loads, and detailed arrangements for the protection of bridges, culverts or other structures to be traversed, as may be required. The plan should also contain details of how the developer intends to engage with and notify the local community in advance of the delivery of oversized loads. All works to the public road network shall be at the developer's expense.
Reason: In the interest of traffic safety.

15. The developer shall retain the services of a suitably qualified and experienced Ecological Clerk of Works for the duration of the construction works who shall be subject to the terms and conditions specified in the submission received from the developer by the Board on 9th day of October 2020. In addition to these terms and conditions, the Ecological Clerk of Works shall have the authority to cease construction works as considered necessary so as to prevent damage to the environment.
Reason: In the interest of protecting ecology and wildlife in the area.

16. The developer shall retain the services of a suitably qualified and experienced Ecologist to undertake pre-construction surveys at the various project elements, including any river crossings, immediately prior to commencing work in order to check for the presence of protected species in the vicinity (including nesting birds, Otter, Common lizard and Fir club moss). A 500m buffer should places around any protected species nest sites and maintained free from construction works until the nest is vacated. Any specimens of

Common lizard or Fir club moss should be removed and relocated to a similar, suitable, undisturbed nearby habitat under the direct supervision of the Ecologist and subject to a Derogation Licence where required.
Reason: In the interest of protecting ecology and wildlife in the area.

17. The developer shall retain the services of a suitably qualified and experienced bird specialist to undertake appropriate annual bird surveys of this site. Details of the surveys to be undertaken and associated reporting requirements shall be developed following consultation with, and agreed in writing with, the planning authority prior to commencement of development. These reports shall be submitted on an agreed date annually for five years, with the prior written agreement of the planning authority. Copies of the reports shall be sent to the Department of Arts, Heritage and the Gaeltacht
Reason: To ensure appropriate monitoring of the impact of the development on the avifauna of the area.

18. The developer shall retain the services of a suitably qualified and experienced bird specialist with respect to Hen Harrier to undertake appropriate monthly surveys of this site. Details of the surveys to be undertaken and associated reporting requirements shall be developed following consultation and agreement in writing with the planning authority prior to commencement of development. These reports shall be submitted on an agreed date annually for the full duration of the windfarm project, with the prior written agreement of the planning authority. Copies of the reports shall be sent to the Department of Arts, Heritage and the Gaeltacht (National Parks and Wildlife Service).
Reason: To ensure appropriate monitoring of the impact of the development on Hen Harrier.

19. The developer shall prepare an Invasive Species Management Plan for the written agreement of the planning authority and all plant and machinery used during the works should be thoroughly cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens.
Reason: In the interest of the proper planning and sustainable development of the area.

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

    (a) Notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development,
    (b) Employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and
    (c) Provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.

    In default of agreement 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 site and to secure the preservation and protection of any remains that may exist within the site.

21. Prior to the commencement of development, the community gain proposals shall be submitted to planning authority for their written agreement.
    Reason: In the interest of the proper planning and sustainable development of the area.

22. On full or partial decommissioning of the wind farm, or if the wind farm ceases operation for a period of more than one year, the wind monitoring mast, the turbines concerned and all decommissioned structures shall be removed, and foundations covered with soil to facilitate re-vegetation, all to be complete to the written satisfaction of the planning authority within three months of decommissioning or cessation of operation.
    Reason: To ensure satisfactory reinstatement of the site upon full or partial cessation of the project.

23. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to planning authority, to secure the satisfactory reinstatement of the site and delivery route upon cessation of the project, coupled with an agreement empowering the planning authorities to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authorities and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.
Reason: To ensure satisfactory reinstatement of the site.

24. The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authorities 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 authorities and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.
Reason: It is a requirement of the Planning and Development Act 2000 that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.

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Karla Mc Bride
Senior Planning Inspector
13th November 2020