



An
Bord
Pleanála

Inspector's Report

ABP-314120-22

Development	Construct 2 x turbines and all associated works.
Location	Ballybaun, Boyle, Co. Roscommon
Planning Authority	Roscommon County Council
Planning Authority Ref.	21/595
Applicant(s)	Curlew Energy Ltd.
Type of Appeal	Third Party
Submissions	Transport Infrastructure Ireland DAU/NPWS Irish Aviation Authority
Observers	None
Date of Site Inspection:	24 th October 2022
Inspector:	Karla Mc Bride

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1.0 INTRODUCTION

1.1 Context

The proposed construction of a 2-x turbine windfarm and grid connection at Ballybaun, Boyle, County Roscommon is the subject of a First Party appeal by Curlew Energy Ltd.. The appeal follows the decision of Roscommon County Council to refuse planning permission for three reasons.

1.2 Site Location and Description

The appeal site is located in NW County Roscommon close to the county boundaries with Leitrim and Sligo, and c.5km to the S of Boyle Town, c.4km N of Ballinameen Village, and c.3km W of the N61. The rural site and environs are characterised by a relatively low lying and flat coniferous forestry plantation which is surrounded by cutover bog, agricultural fields and farm buildings. The surrounding area is sparsely populated, although there are some detached houses and community buildings in the vicinity (incl. 2 x schools to the N & S). The overall lands extend to c.35.5ha. The windfarm site, which mainly comprises commercial forestry, would occupy an area of c.8.3ha. The grid connection route, which would occupy a linear area of c.27.7ha, would extend c.5km N to Boyle substation across mainly agricultural lands. The site is surrounded by a network of national, regional and local roads (incl. N61 & R361) and the vehicular access would be off the L-1248 to the W.

The Kingsland River is located to the SE, S and SW of the site, and it drains to the Breedoge River which ultimately discharges to Lough Gara SPA c.6km (straight line) to the W of the site. This SPA is designated for two species of water bird (Whooper swan & Greenland white-fronted goose). Cavetown Lough is located c.4km and c.10km to the E of the appeal site and Lough Gara SPA respectively, and there are several bogs as in the surrounding area that are designated as SACs and/or pNHAs (incl. Cloonshanville Bog & Bellanagare Bog).

There are several heritage, recreational and tourism features in the surrounding area. Boyle golf course is located to the N of the windfarm site, and it would be traversed by the proposed grid connection to Boyle substation to the N. The site

does not contain any National or Recorded Monuments or any other recorded features of archaeological or architectural interest, although there are several features of interest in the surrounding and wider area (incl. Ringforts, Mounds, Barrows & Enclosures). The Rathcroghan Archaeological Complex is located c.13km to the S of the site.

There are 3 x operational windfarms located to the far S, E and W of the site at Strokestown, Monasterarden and close to Lough Allen.

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

1.3 Planning history

There is no relevant planning history relating to the site and environs.

2.0 PROPOSED DEVELOPMENT

2.1 Documentation

The application documentation includes the following:

- Environmental Impact Assessment Report (EIAR)
- Screening for Appropriate Assessment
- Natura Impact Statement (NIS)
- Planning Drawings
- Photomontages

The EIAR was supported by several Technical Appendices which included:

- Appendix 2-1: CEMP
- Appendix 4-1: Bat Survey Report
- Appendix 4-2 & 3: Marsh Fritillary reports
- Appendix 4-4: Whooper Swan Collision Risk Assessment
- Appendix 4-5: Ornithology Report
- Appendix 6-1: Hydrology Report (Kingsland Stream)
- Appendix 10-1: LVIA Study Area
- Appendix 12-1: Traffic & Transport Assessment

2.2 Development Description

The proposed windfarm development would comprise:

- 2 x wind turbines (150m tip high & 138m rotor diameter).
- Associated foundations & hardstands.
- Total generating capacity of between 8MW & 10MW.
- 1 x permanent meteorological mast (c.80m high).
- Electrical sub-station & associated infrastructure.
- Overhead (c.3.75km) & underground (c.1.5km) grid connection to existing 38kV substation at Boyle (N).

- Temporary works along the haul route.
- New site entrance off the L-1248 local road (W).
- 1 x temporary construction compound & 4 x peat deposition areas.
- Site drainage & sediment control works.
- Site development & ancillary works.
- Forestry felling & off-site replanting.

A 5-year planning permission and 30-year operational life span is being sought.

2.3 Environmental Impact Assessment Report (EIAR)

The EIAR described the site and surrounding area; stated that the proposal would comply with EU, 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 construction, operational and decommissioning phases; identified residual impacts and interactions and assessed cumulative impacts; and had regard to climate change and 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 and Schedule of Mitigation Measures was provided.

The EIAR concluded that environmental impacts, which relate to residential and visual amenity, biodiversity, 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. The EIAR conclusions were not materially altered by the information contained in the Further Information submission.

2.5 Natura Impact Statement

A Stage 1 AA screening exercise was carried out for the proposed development 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. It identified the European sites within the potential Zone of Influence of the project and examined 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 sites and it described any likely direct and indirect effects on them along with in-combination effects, and it assessed the significance of any effects. This exercise concluded that the proposed windfarm and grid connection to the existing Boyle 38kV substation could have likely significant effects, either alone or in-combination with other plans or projects, on the Special Conservation Interests of one of the European Sites, and that progression to a Stage 2 Natura Impact Statement was considered necessary.

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 environs, and it assessed the likely significant effects on the remaining European site. It identified the potential for direct and indirect effects on this European site and proposed 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, ecological surveys, relevant EIAR Chapters and the Construction & Environmental Management Plan. (The NIS report also dealt with several European sites located in the vicinity of the proposed forestry replanting areas in other parts of the country, which will be the subject to Forestry Licence assessments and requirements.) The NIS concluded that the proposed development, by itself, or in combination with other plans or projects, will not adversely affect the integrity of any European Site.

3.0 PLANNING AUTHORITY

3.1 Planning authority decision

Following the receipt of Further Information (FI) the planning authority (PA) decided to refuse permission for 3 x reasons which are summarised below: -

1. Insufficient site-specific justification for locating the windfarm in a “Less Favoured” area for such development, given that Pol. Obj. CAFE 8.5 seeks to primarily facilitate wind energy development in areas designated as “Most Favoured”; project would set an inappropriate precedent; and undermine the core principles of the Energy Strategy & framework for renewable energy.
2. Proposed laying of electrical connecting infrastructure along the national road reservation (N61) would have an adverse impact on traffic movement which would endanger public safety by reason of a traffic hazard, irrespective of the 50-60kmph speed limit; at variance with national roads policy & guidelines (Incl. DECLG Spatial Planning & National Roads & NPF NSO2) in relation to efficiency, capacity & safety; and undesirable precedent.
3. Insufficient information provided to demonstrate that all potential environmental impacts have been sufficiently identified and appropriately mitigated against (incl. protected species & designated sites); and adverse impacts on the integrity of the Lough Gara SPA cannot be ruled out.

3.2 Further Information

Prior to making this decision, the PA sought and received FI in relation to: -

1. *Provide details of alternative cable routing to avoid impacts on the national road network (N61) – mainly overhead with c.360m underground along N61; 5 x alternative route options considered and current option was selected for environmental, technical, economic & safety reasons and it involves the least interference along the road network; no policy restrictions on laying windfarm*

GC cables under national roads, 2012 Guidelines do not apply to national roads within the 50-60kmph speed zones for towns etc., and the works would not lead to increased traffic or affect strategic capacity; short term works (under a road opening licence) will require traffic management over 2 to 3 days; pre-condition & post construction surveys will be undertaken; no operational or decommissioning impacts; and no entrances or exits required.

2. *Clarification of EIAR ecological survey & monitoring locations (incl. bats) and absence of some species from surveys (incl. deer) – bat sampling locations chosen to be representative of bat activity within the site which could not have otherwise been achieved because of the closed woodland canopy; the 2 x bird VP survey points at the periphery of the site allowed for full coverage of the swept path of the turbines; SNH Guidelines (2019) advise that bat SP detectors should be located at or close to turbine locations rather than symmetrically around the site, whilst having regard to local environmental conditions (incl. insect activity); Larval Web surveys indicate that there is no evidence of Marsh Fritillary activity or suitable habitat within the site (although there is evidence to the NE where Devil's-bit Scabious grows in damp grasslands); no deer were encountered during the surveys, or evidence of their presence and they were not considered a key ecological receptor.*
3. *Clarification of water quality surveys (incl. omission of ammonia from peat environs) & monitoring proposals (incl. for suspended solids) in relation to: -*
 - a. *Selection of monitoring points, absence of downstream sampling point & all potential discharge information – Point A was upstream and Point B was downstream of the closest works to the Kingsland Stream, and new Point C further downstream will monitor discharges from the site; only clean water will be discharged from the site via the construction phase sediment & drainage control system.*
 - b. *Details of bridging point over surface water drain – details of a clear span bottomless culvert provided; no in-stream works; and all works will comply with IFI & OPW requirements & guidance.*

- c. *Reasoning behind emphasis on some water quality parameters – phosphate & nitrogen are the main cause of algae blooms & the parameters allow for comparison with water quality regulations; and details of ammonia & suspended solid concentrations provided, which are well below mandatory Freshwater & Salmonoid values.*
 - d. *Construction compound holding tank details – WC details provided.*
 - e. *Control, monitoring & mitigation of run-off impacts from the use of brash for drain crossings & floating roads – embedded design measures will control sediment and run-off from the site (incl. sediment ponds, check dams, silt fences & drainage control system); along with ongoing weekly water quality monitoring & emergency response kits.*
 - f. *Measures to protect a drain that discharges to the Kingsland Stream – overhead grid connection with no in-stream works, and vehicles will use existing field crossing & no works within 20m of drain.*
 - g. *Clarify location of concrete chute wash out area – details provided & located with construction compound.*
4. *Clarification of removal disposal of all brash & tree roots – will accord with Felling Licence & Forestry Service requirements; and brash to be retained in bat buffer zones to minimise soil disturbance.*
5. *Details of wheel wash facility & subsequent disposal of wastewater – details of typical treatment & disposal systems provided.*
6. *Details of potable water monitoring – welfare system details provided.*
7. *Submit justification for choosing a “Less Favoured” area and address consideration of alternative locations – windfarms are open for consideration; project complies with all relevant EU, national, regional and local policies, objectives & criteria; and various alternatives considered (incl. alternative locations, layouts, turbine types, grid connections & construction methods).*

The PA considered the FI response to contain significant additional data and the requested the applicant to readvertise the project and provide new Public Notices.

3.3 Technical reports

Planner's report: the Planning Officer recommended a refusal of planning permission for 3 x reasons which are summarised above in section 3.1 above.

Boyle Area Engineer: no objection subject to normal conditions.

Environment Dept: raised concerns in relation to potential environmental impacts. Several concerns sustained following the receipt of FI (incl. inadequate assessment of deer, lack of downstream surface water monitoring data, lack of detail in relation the environmental monitoring regime; and impacts of retained brash on the site).

National Roads Design Office: project includes underground cabling on a section of the N61 within the study area for the Boyle Town Bypass which would not be affected; all works should be carried out in accordance with TII requirements.

3.4 Prescribed Bodies

TII: at variance with official policy in relation to control of development on/affecting national roads as per 2012 Guidelines and would adversely affect the operation and safety of the national road network for 3 main reasons including the laying of c.1.5km of underground cable along the verge of the N61, which could affect future maintenance & improvement requirements & have additional cost implications. No change in its opinion following the receipt of FI.

DoCH&G: raised several concerns in relation to the ecological assessment & mitigation measures for the windfarm site and forestry replanting area. Several further concerns raised following the receipt of FI in relation to: - archaeological pre-testing; and nature conservation, birds & quality of bird surveys (incl. Hen harrier winter roosts & Whooper swan at Lough Gara SPA); bats and absence of operational phase monitoring & mitigation; CEMP mitigations are generic (incl. for water quality); dark sky lighting plan required; Biodiversity Net Gain required; structural stability details along the haul routes required along with potential impacts; incorporate SUDs; and deal with the threats posed by invasive species.

IAA: had no objection subject to the submission of information in relation to turbine co-ordinates, height & horizontal extent, and lighting details.

3.5 Public submissions

One submission received from a local resident who raised concerns in relation to: - inadequate public engagement, habitat loss, noise, shadow flicker & traffic safety.

4.0 FIRST PARTY APPEAL

4.1 Grounds of appeal

The First Party appeal received from Curlew Energy Ltd. is summarised below:

Reason no.1 (Less Favoured area):

- OPR requested confirmation that windfarms are open for consideration in the “Less Favoured” category, the Council confirmed that although not the preferred area, there is no presumption against wind energy developments in this category subject to proper planning considerations, and Pol. Obj. CAFE 8.5 was amended accordingly.
- The only difference between “Most” & “Less” favoured areas is the site sensitivity which could render windfarm development problematic.
- Plan does not require the “Most Favoured” areas to be developed first.
- Outside normal planning criteria to seek a site-specific justification to demonstrate the necessity of developing a “Less Favoured” area, however this issue was nonetheless addressed in the FI response: -
 - EIAR & NIS conclude no significant adverse impacts.
 - Location justified when assessed against RES criteria.
 - Consideration of alternatives has been undertaken.
- PA’s planning report did not identify specific deficiencies in this justification but highlighted why the area was “Less Favoured” as the wider area contains some designated sites & a scenic views.
- Consistent with RES core principles, which seek to ensure that the county continues to address climate change by facilitating appropriately located renewable energy developments.
- Consistent with the RES Aims, which seek to assist in the achievement of national targets for energy from renewable energy.
- Reason for refusal creates a presumption against wind energy developments in “Less Favoured” areas unless sufficient justification is provided to demonstrate a site-specific need.
- Refusal of permission would undermine the contribution of the Plan to meeting national targets.

Reason no. 2 (Laying cables along N61):

- Refer to detailed FI response.
- TII incorrectly assert that 1.5km of the N61 will be impacted, but only 360m within the 50-60kmh zone would be affected over 2-3 days.
- All works would comply with relevant NRA & DMURS guidelines.
- Inappropriate precedent for refusing development within the National Roads Network for irrelevant considerations.
- There is already a precedent for energy infrastructure development beneath the national road network, the Foynes to Listowel gas pipeline utilises the N69 for a distance greater than 300m.
- Boyle Area Engineer & National Road Design Office had no objection, and the same stretch of road has already been utilised for services.

Reason no.3 (Biodiversity & European sites):

- Non-specific reason for refusal.
- PO's report concludes that satisfactory information has been provided, and this reason for refusal draws on the DHLGH's second submission.
- **Bats**: detailed bat report describes the site-specific bat roost survey; the coniferous forest & environs do not offer suitable foraging, roosting, or breeding habitats for bats; details of bat roost locations were provided on foot of a BCI site-specific request; embedded mitigation measures in design will minimise operational phase collision risk & barotrauma (incl. 50m clear fell buffer around turbine base & vegetation that does not attract prey insects) & post construction monitoring.
- **Birds**: refer to detailed FI response; EIAR bird surveys indicate Buzzard activity within 500m of a turbine & a single Hen harrier pass, and NPWS requested further surveys; sufficient survey information already provided for Hen harrier & Curlew; there was only one sighting of **HH** during the 30 x month VP surveys at a height of 50m within c.500m of a turbine, with no evidence of breeding or roosting HH in the vicinity and no need for further surveys to investigate potential HH communal roost sites. There was only one sighting of **Curlew** during

the 30 x month VP surveys in the flight activity area & none within the site, and no need for further surveys to investigate potential Curlew breeding activity within the area that does not contain suitable habitat; groups of Curlew were recorded to the W & E of the site at Lough Gara & Cavetown Lough & the turbines are outside the 2km foraging range.

- **Lough Gara SPA & Whooper swan:** 6 x WS flight paths recorded during the VP surveys for 2 or 3 birds at heights of 50 & 80m, with only one within the site boundary, and the hinterland surveys recorded WS at Lough Gara SPA & Cavetown Lough and the site is hydrologically linked to the SPA and the sediment & erosion control, and water quality monitoring measures will ensure that water quality will not deteriorate; and the turbines & overhead cables are outside the 5km foraging range; with no adverse impacts on the SPA predicted.
- **Birds along overhead GC route:** EIAR survey results include Peregrine falcon, Whooper swan, Kestrel & Grey heron; bird deflectors will be provided; and overhead cables traverse private lands in a similar manner too existing transmission lines & poles.
- **Tree felling & fauna:** tree felling will mainly take place outside the bird breeding season & construction will commence before the breeding season starts; felling will take place under licence & in line with relevant guidelines & works will cease if active nests are encountered; pre-construction monitoring for bats & mammals and exclusions zones will be set up if active resting or breeding places are encountered.
- **Water quality:** refer to detailed FI response in relation to sample points up and downstream of the works; the CEMP sediment & erosion control, water quality pre-construction testing & on-going monitoring measures will ensure that water quality will not deteriorate; additional sample points can be added as required; water analysis will be in line with all relevant regulatory limits & parameters; continuous monitoring equipment will be installed at 4 x points (turbidity, flow rate & depth); and the design of the clear span bottomless culvert to bridge the surface water drain & implementation of best construction practice will ensure that no adverse impacts occur & IFI did not respond to design;

- **Triggers for remediation works**: regular surface water quality monitoring & visual inspection at watercourses; trigger values will be informed by monthly baseline monitoring which will commence 6 x months prior to construction to establish trends during low & high flow conditions in order to compare with construction phase works.
- **IFI & RCC consultations**: will be notified in relation to excessive suspended solids, blockages, or damage to infrastructure.
- **Misc**: concrete lorries wash out will be in line with best practice & particulate matter will be collected & disposed of by a licenced contractor; haul route is mainly along national roads & no bridge strengthening works are required; nature based surface water management aligns with SUDS; an Invasive Species Management Plan will be prepared and best practice adhered to; silt ponds will be retained & allowed to revegetate with a resultant Biodiversity Net Gain; Marsh Fritillary area is on lands outside the applicant's ownership; and there will be no artificial lighting except for aeronautical lighting.

Conclusions:

- Windfarm located in an area suitable for windfarms.
- Sediment & erosion control, and water quality monitoring measures will ensure that water quality will not deteriorate.
- All potential environmental impacts have been assessed in the EIAR.
- EIAR concludes that site is suitable for the development proposed.
- Post construction monitoring will take place.
- No adverse impacts on Lough Gara SPA, or any other European sites.
- Only one local objection to project.

4.2 Planning Authority response

No response received to date.

4.3 Observers

No Observations received to date.

5.0 LEGISLATIVE & POLICY CONTEXT

5.1 National Policy

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 offshore wind energy). In relation to roads, NSO 2 seeks to maintain the strategic capacity and safety of the national road network.

National Development Plan, 2021-2030

This plan underpins the NPF Plan, and it sets a framework for investment priorities which includes expenditure commitments to secure a wider range of Strategic Investment Priorities.

National Energy and Climate Plan, 2021-2030

This Plan outlines Ireland's energy and climate policies in detail for the period from 2021 to 2030 and looks onwards to 2050. The NECP is a consolidated plan which brings together energy and climate planning into a single process for the first time. It envisages a target of at least 55% renewable energy in electricity by 2030.

Climate Action and Low Carbon Development (Amendment) Act, 2021

Establishes a framework to develop the transition towards a low carbon economy.

Climate Action Plan, 2023

Seeks to tackle climate breakdown and it commits Ireland to a legally binding target of net-zero greenhouse gas emissions by 2050, an emissions reduction of 51% and to meet up to 80% of electricity demand from renewables by 2030.

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 landscapes of very high sensitivity may not be appropriate for wind energy development.

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.

National Biodiversity Action Plan, 2022

The Plan sets out actions through which a range of government, civil and private sectors will undertake to achieve Ireland's 'Vision for Biodiversity' and follows on from the work of the first and second National Biodiversity Action Plans. It contains 119 x targeted actions which are underpinned by 7 x strategic objectives.

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.

The Planning System and Flood Risk Management, 2009

These Guidelines seek to avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere. They advocate a sequential approach to risk assessment and a justification test.

DECLG Spatial Planning & National Roads, 2012

These Guidelines set out planning policy considerations relating to development affecting national primary & secondary roads, including motorways and associated junctions, outside the 50-60 km/h speed limit zones for cities, towns & villages, and they seek to secure the efficiency, capacity and safety of the national road network.

5.2 Regional Policy

Regional Economic & Spatial Strategy for the Northern & Western Region 2020

This document 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. Several RPOs deal with renewable energy.

5.3 Other policy documents

- EU Energy Directives and Roadmaps and associated national targets for renewable energy by sector.
- 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

5.4 County Roscommon Development Plan 2022-2028

Chapter 8 deals with Climate Action, Energy and the Environment, and it is accompanied by a Renewable Energy Strategy, Climate Adaptation Strategy and a Landscape Character Assessment. Chapter 9 deals with Built Heritage and Chapter 10 deals with Natural Heritage. Appendix 6 deals with Climate Action, Adaptation & Mitigation. Table 1.1 sets out Strategic Aims and Table 8.1 deals with Renewable Energy Potential. Map 2.1 comprises the Core Strategy Map.

Strategic Aims:

SA1: seeks to achieve a transition to a competitive, greener, low carbon, climate resilient and environmentally sustainable county, facilitated through reducing the need to travel, by integrating land use and sustainable modes of transport, by reducing the use of non- renewable resources and by promoting and facilitating renewal energy initiatives on a domestic and commercial scale.

SA4: seeks to promote a high-quality living environment in urban & rural areas.

SA11: seeks to protect & enhance the natural assets of the County, including clean water, biodiversity, landscape, green infrastructure, heritage & agricultural land.

SA14: seeks to protect, conserve & enhance built & natural heritage & landscape.

Renewable energy:

CAEE 8.3: seeks to support developments & actions that assist in achieving national targets for renewable energy and reducing greenhouse gas emissions.

CAEE 8.4: seeks to encourage & facilitate the various forms of renewable energy development detailed in the Renewable Energy Strategy (RES).

CAEE 8.5: seeks to facilitate wind energy developments primarily in areas designated as “Most Favoured” & secondarily in “Less Favoured” areas in the RES.

CAEE 8.7: seeks to ensure that renewable energy developments are considered in the context of relevant EU & national legislation (incl. environmental protection).

CAEE 8.8: seeks to ensure that renewable energy developments do not undermine the preservation & conservation of the natural & built environment.

CAEE 8.9: seeks to work in collaboration with EirGrid and other service providers and statutory bodies to facilitate a modern electricity network within the county.

Renewable Energy Strategy

Designation	Areas Suitable for Wind Development
Less Favoured	Wind farm development will be considered, but the sensitivities revealed in these areas would render exploitation more problematic & therefore these areas are less favoured for wind energy development.

Landscape:

NH 10.25: seeks to minimise visual impacts on sensitive areas.

NH 10.26: seeks to protect important views & prospects in the rural landscape.

LCA No.	Landscape Character Area	Landscape Character	Landscape Value
No. 18	Plains of Boyle	Dry Farmland	Moderate
No. 20	Breedoge Bogland Basin	Boglands	Moderate

Protected Views & Scenic Routes:

Several in the wider area including:

- **V10:** Scenic Route View NW from along N61.
- **V12:** Protected View NW from Cavetown Lough.
- **V26:** Protected View N from Rathcroghan Mound.

Heritage:

BH 9.13: seeks to secure the preservation of artefacts (in situ or by record).

NH 10.1: seeks to ensure the protection, conservation & enhancement of biodiversity

NH 10.7/8/9/10: seeks to protect European sites & NHAs.

NH 10.11: seeks to preserve & protect sites of county geological importance.

NH 10.12: seeks to promote & facilitate the development of geo-tourism.

5.5 Heritage Designations

European sites	European sites	Ramsar sites
Cloonshanville Bog SAC Bellanagare Bog SAC Lough Arrow SAC Callow Bog SAC Tullaghanrock SAC Unshin River SAC	Bricklieve Mountains & Keishcorran SAC Lough Gara SPA Bellanagare Bog SPA Lough Arrow SPA	Lough Gara

6.0 PLANNING ASSESSMENT

The main planning issues arising in this case are:

1. Principle of development
 2. Carbon balance
 3. Cabling under N61
 4. Environmental & ecological impacts
 5. Other issues
- Section 7.0 of this report deals with Environmental Impact Assessment.
 - Section 8.0 of this report deals with Appropriate Assessment.

6.1 Principle of development

6.1.1 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 5.0 above. It would contribute to the achievement of European and National renewable energy targets, and in particular the objectives of the Climate Action Plan which seeks to tackle climate breakdown and it commits Ireland to a legally binding target of net-zero greenhouse gas emissions by 2050, an emissions reduction of 51% and to meet up to 80% of electricity demand from renewables by 2030. 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 the various measures will be addressed in more detail in section 6.3 below in relation to carbon balance, whilst other practical issues related to peatland management (incl. soils, hydrology, biodiversity, peat stability & rehabilitation) will be addressed in the relevant sections of the Environmental Impact Assessment chapter of this report.

6.1.2 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 to peat instability or adversely affect drainage patterns, cultural heritage, sensitive landscapes, the local road network or residential amenity. These practical issues will be addressed in more detail in the relevant sections of the Environmental Impact Assessment and Appropriate Assessment chapters of this report.

6.1.3 Regional planning policy

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

6.2 Compliance with local planning policy

The proposed windfarm would be compatible with the general climate change and renewable energy aspirations contained in the current Development Plan, which seek to promote sustainable development and measures to reduce energy demand and greenhouse gas emissions and adapt to climate change. The Plan also contains policies and objectives which seek to protect the environment, European sites, biodiversity, scenic landscapes, views, residential amenity, cultural heritage and the road network. These issues will be addressed in the following sections of this report.

In relation to specific local planning policies pertaining to renewable energy, the Plan seeks to support, encourage and facilitate various forms of development in line with EU and national policy, and the County Renewable Energy Strategy (CAEE 8.3, 8.4 & 8.7), facilitate such development in designated areas (CAEE 8.5), protect the environment (CAEE 8.8) and work with relevant stakeholders (CAEE 8.9).

In terms of suitable locations for wind development, Policy CAEE 8.5 seeks to facilitate wind energy developments primarily in areas designated as “Most Favoured” and secondarily in “Less Favoured” areas in the Renewable Energy Strategy. The windfarm site is located within a “Less Favoured” area where “Wind farm development will be considered, but the sensitivities revealed in these areas would render exploitation more problematic and therefore these areas are less favoured for wind energy development”.

The planning authority had concerns about the location of the proposed windfarm development within a “Less Favoured” area and it requested the applicant to submit a justification for choosing this area to consider alternative locations. The applicant’s response to the Further Information request stated that windfarms are open for consideration within a “Less Favoured” area and that the project complies with all relevant EU, national, regional and local policies, objectives and criteria. It noted that various alternatives were already considered in the EIAR (incl. alternative locations, layouts, turbine types, grid connections & construction methods).

The planning authority subsequently decided to refuse planning permission for three reasons, and Reason no.1 related to the location of the windfarm within a “Less Favoured” area, as summarised below: -

Insufficient site-specific justification for locating the windfarm in a “Less Favoured” area for such development, given that Policy Objective CAEE 8.5 seeks to primarily facilitate wind energy development in areas designated as “Most Favoured”, the project would set an inappropriate precedent and undermine the core principles of the Energy Strategy and framework for renewable energy.

The applicant’s response to this reason for refusal is summarised in detail in section 4.1 above. The applicant referred to a request from the Office of the Planning Regulator (OPR) which sought and received confirmation that windfarms are open for consideration in “Less Favoured” areas subject to proper planning considerations. The applicant’s response went on to state that the project would comply with all

policy levels for the delivery of renewable energy including the local Renewable Energy Strategy, that there is no requirement to develop the “Most Favoured” areas first, and that the main difference between “Most” and “Less” favoured areas is the sensitivity of the site and environs which could render windfarm development problematic.

I concur with this view in relation to local planning policy, and I am satisfied that the proposed windfarm is open for consideration at this location, based on its planning merits and subject to a full assessment of all potential impacts on the site, environs and wider area (incl. the environment, European sites, biodiversity, scenic landscapes, views, residential amenity, cultural heritage and the road network). These issues will be addressed in more detail in the relevant Environmental Impact Assessment and Appropriate Assessment sections of this report.

6.3 Carbon balance

The Climate Action Plan seeks to tackle climate breakdown and it commits Ireland to a legally binding target of net-zero greenhouse gas emissions by 2050, an emissions reduction of 51% and to meet up to 80% of electricity demand from renewables by 2030. The proposed windfarm development would generate renewable energy which would in turn result in reduced CO₂ emissions to the atmosphere over the lifespan of the project. However, a balance needs to be struck between the carbon emitting construction activities (incl. turbine & concrete production and transport), the loss of any carbon storage capacity in excavated soils (i.e. peatlands), and the generation of renewable energy from non-carbon emitting sources.

The proposed windfarm would be mainly located within a disturbed peatland environment. The proposed development of 2 x turbines would contribute between c.8 and 10MW to the national grid per year and between c. 240 and 300MW over 30-years. The EIAR noted the difficulties associated with predicting carbon savings within a highly modified and afforested peatland environment. However, it estimated the total carbon losses associated with the proposed windfarm (c.17,022 tonnes CO₂ equivalent) which takes account of several variables including turbine manufacture, concrete production, tree felling, replacement forestry and all associated

transportation. This carbon savings would comprise a substantial amount over 30 years with a “pay-back” time of just under 2 years. I consider the carbon balance results to be reasonably reliable, and I am satisfied that there would be ample carbon savings over the 30-year lifespan of the project when balanced against the construction related carbon emissions, in line with national policy and guidelines.

6.4 Cabling under N61

The proposed windfarm would be connected to the existing 38kV substation at Boyle c.5km to the N of the site via a part overground and part underground grid connection cable. The overground section would mainly traverse agricultural land. The c.1.5km underground section would be laid under Boyle Golf Course and under a small part of the verge of the N61 national road to the SE of Boyle. The underground cable would extend for c.360m along the N61, within the 50-60kmph speed zone for town, and no openings to the national road from the surrounding lands are proposed.

Transport Infrastructure Ireland (TII) raised concerns in relation to works along the national road network. It submitted that the laying of underground cables along the N61 would be at variance with official policy in relation to control of development on and/or affecting national roads as per the 2012 Guidelines. It stated that the works would adversely affect the operation and safety of the national road network, and the laying of c.1.5km of underground cable along the verge of the N61 could affect future maintenance and improvement requirements, with resultant additional cost implications. The Boyle Area Engineer had no objection to the project subject to normal conditions. The National Roads Design Office noted that although a section of the grid connection route would be located within the study area for the Boyle Town Bypass, and that this project would not be affected by the underground cabling, subject to compliance with TII requirements.

The planning authority had regard to the TII’s concerns and requested the applicant to provide details of alternative cable routing to avoid impacts on the national road network (N61). The applicant’s response to the Further Information request stated that:- the underground section would be c.360m; five alternative route options were considered and the current option was selected for several reasons (incl.

environmental, technical, economic, safety & least interference along the road network); there are no policy restrictions on laying such cables under national roads; the 2012 Guidelines do not apply to national roads within the 50-60kmph speed zones for towns; the works would not lead to increased traffic or affect strategic capacity given their small scale and short term duration (c. 2 to 3 days); and no entrances or exits to the road national road network are required. TII did not change its opinion following the receipt of Further Information.

The planning authority subsequently decided to refuse planning permission for three reasons, and Reason no.2 related to the location of a section of underground cabling along the N61, as summarised below: -

The proposed laying of electrical connecting infrastructure along the national road reservation would have an adverse impact on traffic movement which would endanger public safety by reason of a traffic hazard, irrespective of the 50-60kmph speed limit; at variance with national roads policy and guidelines (Incl. DECLG Spatial Planning & National Roads & NPF NSO2) in relation to efficiency, capacity & safety; and setting of an undesirable precedent.

The applicant's response to this reason for refusal is summarised in detail in section 4.1 above (refer also to the detailed FI response summarised above). It confirmed that only 360m and not 1.5km would be affected by the works within the 50-60kmh zone over 2-3 days, which would in turn comply with all relevant NRA and DMURS guidelines. It stated that there is already a precedent for energy infrastructure development beneath the national road network (incl. the Foynes to Listowel gas pipeline under a c.300m section of the N69). And it noted that the Boyle Area Engineer and National Road Design Office had no objection to the works, and that the same stretch of road has already been utilised for services.

I have taken account of the concerns raised by TII and the planning authority, and the applicant's response to them in my consideration of whether it is appropriate to lay a c.360m section of grid connection cable under the verge of the N61 national road which is located within the 50 to 60km speed limit zone on the approach to the town of Boyle.

The second reason for refusal refers to the underground cabling being at variance with NPF National Strategic Outcome 2 (NSO2). This objective seeks to achieve Enhanced Regional Accessibility by building on a more compact approach to urban development requirements, enhancing connectivity between centres of population and strengthening public transport connectivity between cities and large growth towns. I am not convinced that laying a c.360m section of cable under the verge of the N61 national road on the approach to the town of Boyle would in any way conflict with this objective, particularly give the small scale and limited duration of the works.

The second reason for refusal also refers to the underground cabling being at variance with the Spatial Planning and National Roads Guidelines, 2012. These Guidelines set out planning policy considerations relating to development affecting: - national roads outside the 50/60km per hour speed limit zones for cities, towns and villages; lands adjoining the 60km/hr zone; transitional zones along approach roads; and lands adjoining 50km/hr zone; in relation to the creation of additional access points from any new development.

The section of the N61 that would be affected by the underground cables lies within 50 to 60km speed limit zone on the approach road to the town which is described as a Transitional Zone in the 2012 Guidelines. A limited level of direct access may be provided within this zone to facilitate orderly urban development, subject to a road safety audit carried out in accordance with the NRA's requirements. The proposed development does not propose any access points to or from the N61. I am not convinced that laying a c.360m section of cable under the verge of the N61 national road within a Transitional Zone on the approach to the town would in any way conflict with this aspect of the Guidelines. And the same logic applies to lands adjoining 50km/hr zone where access may be considered in accordance with normal road safety, traffic management and urban design criteria for built up areas.

Having regard to the small scale and short duration of the works (c.360m of underground cables laid over 2-3 days), I am also not convinced that the works would give rise to a traffic hazard, subject to normal licensing requirements and the implementation of traffic management measures, or that the project would affect the strategic carrying capacity of the national road network at any stage.

6.5 Environmental and ecological impacts

Reason no.3 of the planning authorities' decision to refuse planning permission stated that there was insufficient information provided to demonstrate that all potential environmental impacts have been sufficiently identified and appropriately mitigated against (incl. protected species & designated sites); and adverse impacts on the integrity of the Lough Gara SPA cannot be ruled out. These issues are addressed in detail in section 7.0 (EIA) and section 8.0 (AA) of this report.

6.6 Other 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 construction and future decommissioning phases in relation to the 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 7.6 for a more detailed assessment of potential impacts on population and human health.

Visual amenity: Having regard to the scale and location of the proposed development within a relatively low-lying rural area and the height of the two turbines, the windfarm has the potential to impact the visual amenities of the area in relation to landscape character, protected views and views from scenic routes. Refer to EIA section 7.4 for a more detailed assessment of potential impacts on the landscape and visual amenity.

Movement and access: The proposed development has the potential to impact on the national, regional and local road network during the construction and future decommissioning phases mainly in relation to the delivery and removal of the windfarm components, the delivery of construction materials and worker vehicles. Refer to EIA section 7.5 for a more detailed assessment of potential impacts on the road network.

Flood risk: The proposed development has the potential to affect soil hydrology and surface water flow patterns in the surrounding area during the construction, operational and decommissioning phases. Refer to EIA section 7.8 for a more detailed assessment of potential impacts on the water regime.

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 development in-combination with the grid connection route, other windfarms, and plans or projects in the vicinity.

Environmental services: The sanitary arrangements are considered acceptable.

Forestry: Tree felling, timber transport and replanting should be carried out in accordance with the terms and conditions of the Forestry Licence requirements.

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.

7.0 ENVIRONMENTAL IMPACT ASSESSMENT

7.1 Introduction

This section of the report deals with the potential environmental impacts of the proposed development during the construction, operational and decommissioning phases. An EIA is required for proposed wind energy developments comprising more than 5 wind turbines or having a total output greater than 5MW or more (EIA Directive, Annex 2 & Schedule 5 Part 2 of the P&D Regs). The proposed 2 x turbine development would have stated output of between 8MW and 10MW and submission of an EIAR is therefore a mandatory requirement.

This section should be read in conjunction with Section 6.0 (Planning Assessment) and Section 8.0 (Appropriate Assessment).

7.2 Compliance legislative requirements

Directive 2011/92/EU was amended by Directive 2014/52/EU. The applicant has submitted an Environmental Impact Assessment Report (EIAR) which is presented in a 'grouped format' comprising the following:

- 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 course of the application. A summary of the planning authority's considerations, the submissions made by prescribed bodies, and the First Party appeal have been set out in Sections 3.0 and 4.0 of this report.

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 windfarm locations and grid connection routes considered, is provided and 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. The content and scope of the EIAR is considered to be acceptable and in compliance with Planning Regulations.

The EIA identifies and summarises the likely significant effects of the proposed development on the environment with respect to a number of 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. No likely significant adverse impacts were identified in the EIAR following mitigation.

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.

7.3 Consideration of Reasonable Alternatives

Chapter 2.15 of the EIAR dealt with the consideration of alternatives. These included the “Do-nothing” Scenario. The main windfarm alternatives considered related to location, site layout and design, and alternative turbine designs, and the main grid connection route option alternatives related to alternative underground and overhead routes to Boyle 38kV substation, all of which were assessed against key environmental and planning considerations related to the wind resource, grid proximity, planning policy, environmental considerations (incl. landscape, views, site stability, water quality, ecology, birds & heritage), road access, and distance from settlements and dwelling houses. The EIAR concluded that proposed development would represent the best option having regard to the aforementioned considerations.

7.4 Landscape (Visual Impact)

7.4.1 Project description

The proposed development would be located within a relatively low-lying rural area which is mainly characterised by coniferous forestry plantations and agricultural land, and the wider surrounding area is undulating in character. The main elements of the windfarm project that have the potential to affect the landscape and visual amenity would comprise the 2 x turbines, met mast, substation and overhead grid connection to the existing Boyle 38kV substation to the N of the site.

7.4.2 Locational context

The windfarm site occupies an attractive rural location in N County Roscommon c.5km S of Boyle close to the Sligo and Leitrim borders, and it is mainly characterised by a commercial forestry plantation surrounded by pockets of broad-leaved trees, farmland and cutover bog. The surrounding area is sparsely populated although there are a small number of dispersed houses and farms along the local roads to the SW and N of the site. The surrounding lands slope down from N to S and the windfarm infrastructure would occupy a relatively flat afforested site. The lands are traversed by drainages ditches that drain SE, S and SW to the Kingsland Stream and River, which flows in to the Breedoge River and hence Lough Gara SPA to the W. There are several elevated areas in the wider area including Curlew Mountains to the N, Cavetown Lough to the E, and Rathcroghan archaeological site to the S. There are several small villages and settlements, community features, amenity areas and recreational attractions in the wider area. These include two schools, Boyle Golf Course, Lough Key Forest Park and walking routes through the Curlew Mountains. The Dublin to Sligo Road (N4) is located to the N of Boyle and there are some small operational windfarms in the wider area.

7.4.3 Environmental Impact Assessment Report

Chapter 10 of the EIAR and associated Technical Appendices dealt with landscape, views 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) and Photomontages, along with a Viewpoint Assessment Summary. Some 14 x viewpoints were assessed at several sensitive receptors which represented views from Protected Views, Scenic Routes, heritage sites, community and amenity areas, the main road network and the wider rural environment, as well as from nearby houses.

The EIAR stated that the windfarm has been designed to minimise landscape and visual effects as far as possible. ranked the Visual Impact Magnitude at each location as ranging from Negligible to Moderate. It concluded that the visual impacts would be more pronounced in the immediate vicinity of the site, ranging from Slight and neutral to Moderate and adverse for views within a medium distance of the site, and Negligible to Slight-Moderate in the wider landscape.

The EIAR stated that the separation between the Protected Views, Scenic Routes heritage and amenity areas, lakes and elevated locations, taken in conjunction with the siting and location of the turbines within a low-lying area, the undulating character of the surrounding landscape and the presence of forestry screening would ensure that the turbines would not significantly detract from views across the site from any of these locations. This included an area to the N and S of the site within which several community facilities, farms and houses are located, and surrounding scenic areas at the Curlew Mountains, Lough Key, Cavetown Lough and Lough Gara, as well as the further afield Rathcroghan Mound, and local road network. It concluded that there would be no significant cumulative effects, and that the visual impacts would diminish with distance.

7.4.4 Policy context

The 2006 Wind Energy Guidelines recommend that turbines should be set back 500m from the nearest sensitive receptor, whilst the 2019 Draft Guidelines recommend a separation distance of 4 x times the tip height between the closest turbine and the nearest point of the curtilage of the any house, in the interests of visual amenity. The 2006 Guidelines advise that locating the turbines on ridges or plateaus is preferable, as is a regular spacing pattern and staggered linear layout on

elongated ridges, and that the intermittent visibility of two or more wind energy developments is usually acceptable.

In relation to the current County Roscommon Development Plan, the site and environs lie within the Breedoge Bogland Basin Landscape Character Areas (LCA) and to the E of the Elphin Drumlins, which have a Moderate landscape value. The nearest LACs of Exceptional sensitivity are located at Lough Key and River Boyle network (LCA 16) to the N and the Tulsk and Rathcroghan Plateau (LCA 28) to the far S. The overhead grid connection would skirt the High value Boyle and Curlew Mountains (LCA 17).

There are several designated Scenic Routes and Viewpoints with the 20km study area (incl. Roscommon, Sligo & Leitrim). The closest Protected View is from Cavetown Lough (V26) and from along the N61 (V10) to the E and SE which look to the NW and SW of the windfarm site, and the highly sensitive views from Lough Key Forest Park (V6 & R4) to the NE of the site. Further afield Protected Views include those from Rathcroghan Mound (VP 12) c.12 km to the S, and from Monasteraden village and Lough Gara (R68 & R70) c.8km and 3km to the W. The respective Development Plans contain policies and objectives which seek to protect and manage the landscape and views. The windfarm site is also located within an area designated as “Less Favoured” for windfarm developments.

7.4.5 Assessment

I surveyed the wind farm site, the surrounding area and the wider regional and local road network in County Roscommon and the neighbouring counties over a 2-day period in October 2022. I had regard to the EIAR visual impact studies which are summarised in section 7.4.3 above. I had regard to any concerns raised in relation to landscape and visual amenity, and to any issues addressed in the applicant’s Further Information response submission. I also had regard to relevant national, regional and local planning policy, which is summarised in section 5.0.

Receiving landscape:

Wind turbines, by virtue of their height and scale, will undoubtedly have an impact on the receiving landscape. The proposed windfarm would not be located within a designated sensitive landscape although there are some sensitive landscapes located to the far N, S and W of the site at Lough Key, Curlew Mountains, Rathcroghan Mound, and Lough Gara. There are several Protected Views and Scenic Routes in the wider area, including the view NW from Cavetown Lough which skirts the N periphery of the windfarm site. The proposed turbines would be set back from the local road, and they would be arranged in an orderly fashion to take account of the topographical features of the landscape. The position of the turbines within the site would accord with the 2006 Guidelines recommendations in relation to layout and spacing. The proposal would therefore be acceptable in terms of visual amenity and landscape character.

Protected Views & Scenic Routes:

There are several mainly long-distance Protected and Scenic Views towards the site and its environs, including one from Rathcroghan to the S (V12), two over a short distance from Cavetown Lough to the E of the site (V26) and from along the N61 to the SE (V10), and two from Monastweaden Village and Lough Gara to the W (R68 & R70). The two turbines and overhead grid connection would not be highly visible when viewed over a long distance from Lough Key (N) and Rathcroghan (S) because of the substantial separation distance. The turbines would be intermittently visible from Monasteraden village and Lough Gara Scenic Routes to the W of the site however the visual impact would not be overly dominant, and their presence would not detract from the amenity of the Scenic Routes. The Protected View (V26) from Cavetown Lough is directed towards an area to the NW of the windfarm site which does not lie within the arc of the view. The Scenic View (V10) from Along the N61 is directed towards an area to the SW of the windfarm site which also does not lie within the arc of the view. Although the turbines would be visible when viewed from Boyle Golf Course and from along the local road to the N at Leam, and both the turbines and overhead cables would be intermittently visible from along surrounding road network, including the N61 to the E, the views from these locations are not protected and the surrounding landscape value is classified as Moderate. Overall,

having regard to the small number of turbines, the visual impact on the receiving landscape, surrounding area (incl. Protected Views & Scenic Routes) would not be overly dominant. No significant adverse visual impacts are anticipated, having regard to the separation distances, surrounding undulating Drumlin topography to the E, and forested character of the surrounding and/or intervening landscape.

Heritage sites:

There are no recorded heritage sites within the windfarm site and environs, although there are several archaeological features located within 5km of the site boundary and along the overhead grid connection routes (incl. ringforts, barrows & enclosures). There are some further afield heritage features located in and around Boyle to the N and the megalithic Rathcroghan Mound is located to the S. Although there would be intermittent views of some of the turbines (nacelle and/or blades) from these locations, the overall impact on the surrounding landscape and on visual amenity would not be significant. As previously stated, the visual impact of the turbines would decrease with distance and having regard to the undulating character of the surrounding landscape and the level of forestry screening, I am satisfied that any impacts on intermittent views towards the windfarm site from nearby and further afield heritage areas would be negligible.

Built-up areas:

The proposed windfarm would be located within a sparsely populated rural area that is at a remove from densely built-up areas. However, there are several small towns and villages located within a c.10km radius of the of site boundary (incl. Boyle, Monasteraden, Frenchpark, Ballinameen & Carrignacarragh). Although there would be intermittent views of the turbines from these locations and also from along the surrounding road network the overall impact on the surrounding landscape when viewed from these locations, and on visual amenity would not be significant. Furthermore, the visual impact of the turbines would decrease with distance. And having regard to the undulating character of the surrounding landscape and the level of forestry screening, I am satisfied that any impacts on intermittent views towards the windfarm site from surrounding towns and villages would be negligible.

Dwelling houses:

The settlement pattern for dwelling houses along the surrounding local road network is dispersed and low density, although there is a concentration of one-off houses located along the local road to the N of the windfarm site at Leam, and there are a small number of houses located to the immediate SW of the site entrance. Although there will be views of the turbines from these houses, and intermittently from along the surrounding local roads, I am satisfied that the turbines will not be overly dominant, and they will not adversely impact visual amenity to any significant extent. The separation distance between the houses and the nearest turbines would exceed the 2006 Guideline of 500m and the Draft 2019 Guideline of 600m (4 x 150m max tip height). Having regard to European and National policy in relation to renewable energy and to the exceedance of minimum separation guidelines, on balance, I am satisfied that the proposed windfarm is acceptable at this location and that dominant views of the turbines from any nearby houses would not constitute a reason to refuse permission of alter the turbine layout.

Recreational, amenity, tourist & scenic areas:

The turbines and the overhead grid connection would be intermittently visible from a number of recreational, tourist and scenic areas (incl. amenity areas, walking trails & golf courses). However, the overall visual impact would not be significant having regard to the intervening undulating topography of the wider area which would only afford intermittent views of the turbines, and the separation distances which would serve to moderate the visual impacts on many of the views towards the site. Although some of the upper sections of the turbines would be highly visible from within Boyle Golf Course to the N which would also be underlain by the grid connection, the scale of the visual impact would not warrant either a refusal of planning permission or an alteration to the turbine layout or grid connection route. Although the turbines would be intermittently visible along amenity areas at Curlew Mountains, Lough Gara and Cavetown Lough, there is no empirical evidence to confirm that windfarms have negative impacts on recreation and tourism, whilst some studies indicate a net positive impact. Having regard to European and National policy in relation to renewable energy, on balance, I am satisfied that the proposed windfarm is acceptable and that any intrusive views of the turbines and/or overhead

grid connection would not constitute a reason to refuse permission of alter the layout of the turbines.

Other nearby views:

The turbines would be intermittently visible from along the surrounding local road network (incl. regional & local roads) however none of these views are protected. Although the upper sections of the turbines (nacelle and/or blades) would be intermittently visible, there would be no significant adverse visual impacts on the surrounding landscape.

Long distance Views:

There would be some long-distance views towards the proposed windfarm from the outer perimeter of the 20km radius to the N, S, E and W (incl. counties Roscommon, Sligo & Leitrim). The visual impacts of the turbines when viewed from these locations would range from non-existent, through to Negligible and Low, with no significant visual impacts on the landscape or views anticipated, having regard to the extent of the substantial separation distances, the undulating character of the surrounding and intervening landscape, and the level of natural screening.

Cumulative impacts:

The EIAR also deals with the potential for in-combination effects with some other smaller operational windfarms in the wider area. Some of the proposed and operational turbines would be visible from several further afield elevated locations which would extend to the outer perimeter of the 20km Study Area. No significant adverse cumulative impacts are anticipated for short distance views towards the windfarm site, and although the turbines would be slightly visible from further afield elevated areas, they would not form a dominant feature because of the separation distance and intervening undulating landscape. Although there is some potential for in-combination effects, they are not expected to be significant with no adverse cumulative impacts anticipated.

Conclusion:

Overall, on balance, the proposed development would not be unduly visually intrusive having regard to the undulating character of the wider and intervening landscape, level of forestry coverage, the separation distances between the viewpoint locations and the windfarm site, and also the distance between the proposed and existing windfarm developments. Therefore, the proposed turbines would not constitute an unacceptable dominant feature on the landscape or interfere with long distance views towards and across the site, with no significant in-combination visual impacts anticipated.

7.4.7 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: I have considered any written submissions made in relation to the landscape and visual amenity, 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 most significant visual impacts would be from within the site itself and its immediate environs, intermittently from along the surrounding local and regional road network and from several dispersed houses that are located to the SW and N of the site. There would also be minor intermittent views from some further afield heritage sites, towns, villages and amenity areas. The proposed development would not adversely affect the visual amenities of the area or interfere with any protected views 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 elsewhere having regard to the overall scale of the site, the undulating character of the surrounding landscape, and the level of natural screening from the surrounding afforested areas.

7.5 Material Assets (Movement and access)

7.5.1 Project description and location

The proposed windfarm would be located to the S of Boyle with indirect access off the N4 to the N, N61 to the E and the R361 to the SW, and along the local road network. The project comprises the construction of a 2 x turbine windfarm and all associated infrastructure. The potential movement impacts relate to the removal of felled timber from the site and the delivery of construction materials and turbine components to the site along the national, regional and local road network, and the subsequent removal of turbine components during the decommissioning phase.

The main infrastructure elements include:

- Minor local road works long the haul routes.
- Upgrade of the site access off the L-1248 to the W.
- New internal access tracks / service roads (c.1,304m).
- Laying grid connection cables under a section of the N61 (c.360m).

7.5.2 Environmental Impact Assessment Report

Chapter 12 of the EIAR and associated Technical Appendices dealt with the traffic and transport effects of the proposed windfarm on the road network during the construction, operational and future decommissioning phases. Various traffic studies were undertaken, and a Traffic Management Plan will be prepared. The turbine delivery route from Galway Port will be along the M9, and then the N4, N61 and local road network to an existing and upgraded site entrance off the L-1248. The timber removal and construction materials delivery routes would be similar to the turbine delivery route. The regional road network to the SW would also be utilised.

The EIAR described the characteristics of the road network, delivery vehicle specifications required to transport the abnormally large components and it identified sections of the local road network that require remedial works. It also identified a

number of sensitive receptors along the haul route (incl. community facilities, dwelling houses & heritage features). The EIAR carried out traffic counts along the road network which were used to describe existing traffic volumes, assess the impacts of traffic generation and the capacity of the road network to accommodate additional construction phase traffic (incl. abnormally large vehicles). It highlighted the extent of the remedial works required along the haul route and at the main site access off the L-1248 to improve visibility. It noted that the grid connection cabling works along a section of the N61 will have localised impacts on the road network for a small number of days.

During the c. 8-month construction phase, a substantial number of loads (c.3,643) will be delivered to and from the site (incl. the removal of felled trees) ranging from 19 to 129 loads per day. Concrete deliveries account for the bulk of the movements during this period, followed by aggregate and turbine deliveries. Staff movements are estimated to be c. 40 x 2-way trips day on average. HGV traffic volumes are predicted to reduce capacity on the national road network from 74% to 70% which still leaves a adequate spare capacity, which will give rise to a marginal reduction in capacity, which is predicted to be insignificant. The traffic impacts on the regional and local road network are expected to be negative but short term during the construction phase. The works at the site entrance off the L-1248 are predicted to have a negligible effect on rural traffic volumes.

The EIAR concluded that the road network has sufficient spare capacity to accommodate the anticipated increase in traffic volumes during the construction phase. During the operational phase the increase in traffic will be limited to a small number of visiting maintenance employees. It is anticipated that the future decommissioning impacts on the road network will be less significant than during the construction phase impacts as they will not include the delivery of concrete and construction materials to the site.

The EIAR concluded that only short-term temporary impacts during the construction phase are predicted and that the mitigation measures (incl. a Traffic Management Plan, liaison with the County Council & local communities, and a pre & post construction Road Condition Survey) will minimise the impacts on the road network

during each phase. The EIAR did not predict any cumulative impacts in-combination with other plans and projects in the surrounding area, or any other significant adverse impacts during the operational or future decommissioning phases.

7.5.3 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area, and the wider road network over a 2-day period in October 2022. I had regard to the relevant EIAR traffic and movement studies which are summarised in section 7.5.2 above and the concerns raised by the Council and Prescribed Bodies (incl. TII) which are summarised in section 3.0, and the applicant's response to these concerns in the Further Information and Appeal submissions. Their concerns related to general disturbance, traffic safety and cabling works under national roads. I also had regard to relevant national, regional and local transportation and planning policy, which is summarised in section 5.0. The County Council initially had no specific objections to the proposed development, however the second reason to refuse planning permission took account of TII concerns in relation to the project been at variance with official policy in relation to control of development on/affecting national roads, with respect to the laying of cables under a section of the N61, which would in turn adversely affect the operation and safety of the national road.

Vehicular access:

Vehicular access to the proposed development during the construction phase would be off the L-1248 at a point to the W of the site and via the wider local, regional and national road network. Any traffic risks associated with the use of this section of the road network and any upgrade of the infrastructure would be managed by the EIAR mitigation measures which are outlined above, and subject to compliance with Council requirements. These measures include minor road works, 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. Vehicular access to the operational windfarm would also be directly off the upgraded entrance off the L-1248. The surrounding local road network has adequate spare capacity to accommodate the anticipated increase in traffic, and no significant impacts on traffic volumes or road safety are anticipated during any of the phases (construction,

operational or future decommissioning). I am satisfied that the vehicular 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 motorway network from Galway Port via the M9 and N4 to the site is an acceptable delivery route for the turbine components and construction materials. However, some works may be required along the local roads 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 construction and decommissioning phases.

TII referenced the strategic importance of the national road network, had no objection in principle to the proposed delivery route, 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. The capacity of all structures along the delivery route should also be checked and a technical load assessment is required and any works to the road network should be at the developer's expense following completion of the project. These outstanding concerns could be addressed way a planning condition which requires compliance with TII and RCC requirements. TII and Council concerns in relation to the cabling along the N61 on the approach to Boyle are addressed below in section 6.3 above.

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 CEMP and Traffic Management Plan, and a range of temporary traffic control measures which should be put in place with the agreement of the County Council. Abnormally large or wide loads should be delivered when traffic volumes are low with no significant impacts on traffic volumes or road safety anticipated as a consequence. 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. The 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 local road network.

Site access & internal access tracks:

The proposed development would utilise and upgrade the existing site entrance, which is considered acceptable subject to compliance with County Council requirements in relation to visibility and traffic safety. 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 site stability, water quality and ecology will be addressed in the following sections of this report.

7.5.5 Conclusions:

Residual Effects: There will be a short-term increase in traffic movements during the construction and future decommissioning phases but no significant increase during the operational phase. Residual impacts are not predicted to be significant.

Cumulative Impacts: Any cumulative traffic impacts during the operational phase when taken in combination with other 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 route or plans and projects in the area.

7.6 Population, Human Health, Air & Climate

7.6.1 Project description:

The project would comprise the construction of 2 x turbine windfarm and associated infrastructure including a met mast, substation, temporary construction compounds upgraded site access, peat depositories, underground and overhead cabling and associated site works. The visual impacts have been assessed in section 7.4 above and the traffic impacts have been assessed in section 7.5. 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.

7.6.2 Locational context

As previously stated, the windfarm site occupies a rural location to the S of Boyle, NE of Frenchpark and W of the N61. The site and environs are mainly characterised by commercial forestry plantations, cutover bog and agricultural fields. The surrounding rural area is sparsely populated although there are several detached houses and farm buildings along the surrounding local road network to the N and SW of the site, with the highest density of housing along the local road to the N at Leam. There also 2 x schools to the NW and far S of the site, and the grid connection route would run under Boyle golf course to the N enroute to the 38kV Boyle substation. There are houses and community buildings along the proposed turbine delivery and materials haul route to the site with increasing residential densities on the approach roads to various towns and villages along the routes.

7.6.3 Environmental Impact Assessment Report

Chapters 3, 7, 8, 9, 10 and 12 of the EIAR and associated Technical Appendices dealt with the human environment including: - population & human health (economic activity, tourism & employment); air and climate; noise and vibration; shadow flicker; visual amenity; and material assets (traffic). These chapters identified the potential impacts on residential amenity and the wider human population during the construction, operational and future decommissioning phases.

Chapter 3 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 stated that there would be positive health and environmental effects related to a reduction in the use of fossil fuels to generate energy. The EIAR identified c.19-20 sensitive receptors (dwelling houses) within a 1km radius of the proposed windfarm and noted that the nearest houses (H1 & H7) are located over 600m from the turbine locations (T1 & T2). The nearest towns are located between c.5km and 9km to the N and SW of the windfarm (Boyle & Frenchpark) and there are several small villages / settlements within c.5km to 10km of the site. 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, the proposed windfarm would not result in any significant adverse effects on human beings in the surrounding area.

Chapter 7 of the EIAR and Technical Appendices dealt with **air quality and climate**. It stated that there would be no emissions from the wind farm development, and given the nature of the project, there would be no adverse long-term impacts on air quality. It stated that there could be short-term impacts by way of dust during the construction phase with regard to delivery vehicles, excavations and construction works, but noted that the nearest dwellings are over 600m away. There would be some loss of carbon storage capacity as the mainly afforested site is underlain by peatland soils, which are highly modified. However, the renewable energy project would result in the offset of a substantial amount of carbon emissions over its 30-year operational lifespan, with an estimated “pay-back” period of just under 2 years. The EIAR did not predict any adverse impacts on air and climate subject to mitigation measures (incl. best construction practice, traffic management & vehicle maintenance).

Chapter 8 of the EIAR and Technical Appendices dealt with **noise and vibration**, and it concluded that there would be minimal disturbance from construction and operational noise (incl. from site excavations, access tracks, turbines & substation) at the nearest noise sensitive locations. The assessment included desktop and field studies and had regard to existing 2006 Guidelines. The EIAR identified c.19-20

noise sensitive locations (dwelling houses) located within a 1km radius of the windfarm, which are mainly located to the N and SW, and it excluded some unhabitated properties. It identified the nearest sensitive properties at H1 to the SW and H7 to the N of T1. It carried out a Baseline Noise Survey and constructed a Noise Contour Map, and noise monitoring surveys were undertaken at 2 x sensitive locations including NSL1 (H15) to the E and NSL2 (H5) to the NW. Background measurements were recorded, and a variety of wind speeds and wind shear corrections formed part of the prediction model for day and night-time noise during the operational phase.

Construction phase:

Worst case construction noise levels were predicted at the nearest noise sensitive locations. The predicted noise levels for access road and substation construction at H1, which is located within c.300m and c.450m of these works, was predicted to be 61dB(A) and 60dB(A) respectively, with no vibratory impacts anticipated. The worst case predicted noise levels for construction related HGV traffic during concrete pouring at the turbine bases was predicted to be 69dB(A). The EIAR did not predict any adverse noise or vibration impacts during the construction phase subject to mitigation measures (incl. best construction practice & adherence to relevant guidance & standards).

Operational Phase:

Operational noise levels at were predicted at a 10m height at varying wind speeds up to 8m/sec (adjusted for wind shear) at all dwelling houses located within 1km of T1 and T2, based on the lowest background noise levels measures at 2 x Noise Sensitive Locations (NSL1 x H15 & NSL2 x H5) to the E and NW of the site. A noise contour for standard mode operation rated at 8m/s wind speed was applied (worst-case scenario). No exceedance of noise levels (40dB(A)) at any of the wind speeds was predicted for noise sensitive receptors in the surrounding area. The EIAR predicted that noise levels would not exceed the accepted criteria for day and night-time noise, in line with current guidance, with no noticeable effects identified at any of the properties over various wind speeds. The EIAR states that the choice of turbine type would avoid Tonal Noise, Infrasound or Low frequency Noise

disturbance, and that the operational substation would not cause noise disturbance at the closest sensitive receptor (H1) to the SW.

Chapter 9 of the EIAR and Technical Appendices dealt with **shadow flicker**. The computer modelling examined the potential for shadow flicker occurrence at 50 x properties located within 1.38km of the turbines (10 x rotor diameter of 138m as per 2006 Guidelines). The nearest inhabited dwelling (H1) is located over c.600m SW of T1. The assessment concluded that in the unmitigated Worst-Case Scenario there is potential for shadow flicker to occur at c.21 of the 50 properties (30 minutes per day and/or 30 hours per year, with 100% sunshine where the shadow of the turbine passes over the structure). It stated that this would be an extremely rare occurrence and when reduction factors are factored into the model, there would be no exceedance of current guidelines under the Realistic Scenario. The EIAR did not predict any adverse shadow flicker impacts subject to mitigation measures (incl. monitoring, logging complaints & the use of a turbine control/shutdown system to prevent operation at times when shadow flicker might cause a disturbance).

7.6.3 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area over a 2-day period in October 2022. I had regard to the relevant EIAR air quality, noise, shadow flicker and traffic assessments which are summarised in section 7.6.2 above. I had regard to any concerns raised in relation to residential amenity, and the applicant's Further Information and Appeal response submissions. I also had regard to relevant national, regional and local planning policy, which is summarised in section 5.0.

The proposed windfarm will provide employment opportunities during the construction phase although post construction employment would be limited a small number of 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 visual amenity, and traffic and movement have been assessed in sections 7.4 and 7.5 above.

Dust & air quality:

The proposed excavation and construction work, and the activities associated with the access upgrade 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 N and SW the site. 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 – construction phase:

Given the nature and scale of the proposed development, the construction works have the potential to give rise to noise disturbance during the construction phase. This disturbance would mainly relate to the delivery of large components and materials along the local road network and road works which include upgrading the site entrance and constructing a new internal access road. It would also include excavation and construction works within the site for the turbines and substation (incl. concrete pouring) and the construction of new and upgraded access tracks throughout the site. Although these works would be short term and temporary, they have the potential to adversely affect residential amenities in nearby houses in the surrounding area and along the local roads around the site, and along the main delivery and haul routes. The proposed works along the cross-country grid connection route to the N could also give rise to disturbance at nearby houses and road crossings where mitigation measures would be implemented, although most of this route is sparsely populated, and the works would be of a short term duration.

It is noted that the surrounding area is not densely populated although there are c.20 properties (incl. 2 x uninhabited at H17 & H18) located within a 1km radius of the project mainly to the N and S of the site along the local road network. Most properties are located in excess of 1km from the nearest turbine and the nearest inhabited sensitive properties are located over 600m to 800m from T1 (H1-4) and c.850m from T2 (H19). It is noted that although the overall construction phase for the windfarm would take c.8 months to complete, most of the site-specific works would

occur over a much shorter time span and any adverse noise impacts on nearby properties would be localised, short term and temporary.

Given the results of the construction phase noise assessment, which are considered to be robust, and having regard to the separation distances to the nearest noise sensitive properties, the construction work impacts would be mainly related to noise and disturbance along the delivery route which would also 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 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), that the daytime level of the LA90,10min 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 LA 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 LA90 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 (incl. 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 1km Operational Noise Study Area around the proposed windfarm, it identified c.20 noise sensitive receptors (mainly inhabited dwelling houses) within this buffer zone where operational noise levels were predicted, and it set up noise monitoring locations at 2 x locations to the NW and E of the site at H5 and H15. The results of this assessment are summarised in section 7.6.3 above and it concluded that even under the worst-case scenarios, noise levels would not exceed 40dBA at any house under any wind speed circumstances. There are no occupied dwelling houses located within 600m of the proposed turbines. I am satisfied, based on the results of the Operational Noise Assessments, that the predicted noise levels would not significantly exceed the accepted criteria for day and night-time noise at any of the properties which is in line with the current 2006 Guidelines. However, a planning condition should be attached to ensure that acceptable noise levels are not exceeded at any nearby houses, particularly under extreme weather conditions.

The proposed development also complies with the Draft Revised Wind Energy Guidelines which was issued in December 2019. The maximum predicted noise levels at the nearest noise sensitive locations under high wind conditions within the surrounding rural area would not exceed the 43dB (A) absolute limit set out in the 2019 Draft Amended Guidelines. Compliance with other elements of the 2019 Draft Amendments (incl. monitoring & reporting) could be addressed by way of a planning condition in addition to the previously suggested curtailment strategy.

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 receptors in the surrounding area by way of noise disturbance, subject to compliance with the EIAR mitigation measures and the recommended planning conditions.

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 x rotor diameters the potential for shadow flicker is very low. The 2019 Draft amendments to the Guidelines require the submission of a shadow flicker 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 applied the 10-x rotor blade diameter equation (10 x 138m) and identified 50 potential shadow flicker receptors within c.1.38km of a turbine (T1 & T2). The computer modelling examined the potential for shadow flicker occurrence at these properties and concluded that c.21 properties could be affected by shadow flicker under worst case conditions (incl. 100% sunshine, clear skies & no natural screening) and none under realistic conditions (incl. 28% annual sunshine & cloudy skies). Given that optimum weather conditions are unlikely to occur, I am satisfied that the rotating blades would not cause a disturbance at neighbouring sensitive properties. Notwithstanding this conclusion, the applicant should be required to use a control system to pre-programme the turbines to prevent them operating at times of the day and year when shadow flicker could cause a nuisance. This could be addressed by way of a planning condition.

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 receptors in the surrounding area by way of shadow flicker, subject to compliance with the EIAR mitigation measures and any 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 turbines would occupy a low-lying rural landscape and by virtue of their height and position they would be visible from a variety of locations in the surrounding area. The EIAR identified c.20 properties within a 1km radius of the proposed development which are mainly located to the N and SW of the site. None of the houses are located within either 500m or 600m (150m x 4) of the proposed turbines (in line with the 2006 Guidelines and 2019 Draft amendments), although some are located just over c.600m (H7 & H1). Although most of the houses would be located outside a 1km radius of the windfarm, they would have partial views of the turbines because of their elevated position relative to the site, although this would mainly relate views of the upper sections of the turbines (blades and/or nacelles) but not the entire structures.

Having regard to my assessment of the site and surrounding area, the physical characteristics of the terrain, the absence of dwelling houses within either a 500m or 600m radius to the turbines, the substantial separation distances between the proposed windfarm and most of the houses, I am satisfied that although the turbines would be intermittently visible from the surrounding area, the proposed development would not have an adverse impact on the visual amenities of dwelling houses or community buildings in the vicinity. Although the visual impacts would be higher from a small number of locations (incl. Leam to the N), the resultant effects on residential amenity would not warrant a refusal of permission or an alteration to the turbine layout, having regard to national and regional policy in relation to renewable energy.

Conclusion:

Having regard to all of 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, vibration or visual intrusion.

7.6.6 Conclusions:

Residual Effects: There will be some increase in noise, and/or 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 any of 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.

7.7 Land, Soil & Geology (incl. Site stability)

7.7.1 Project description & location

The proposed windfarm would comprise extensive excavation works associated with the construction of the 2 x turbines and associated infrastructure including underground cabling and access tracks within a rural area that is mainly characterised by coniferous forestry plantations, cutover/raised bog and agricultural fields. The relatively flat and predominantly peaty soils are underlaid by a bedrock of Carboniferous limestone and the site lies within the S end of an Area of Geological Heritage (Boyle Drumlins). The site and environs mainly drain SE, S and SW to nearby watercourses (Kingsland Stream and Kingsland & Breedoge rivers) via on-site forestry drainage ditches.

7.7.2 Environmental Impact Assessment Report

Chapter 5 of the EIAR deals with lands, soils and geology and the associated Technical Appendices contain the results of desktop studies (incl. GSI & EPA), walkover surveys and ground investigations (incl. peat probing & peat depth mapping), a Peat Stability Risk Assessment Report (PSRA), and a Construction and Environmental Management Plan (CEMP). Chapters 4 and 6 of the EIAR deals with biodiversity and hydrology & hydrogeology, and issues related to water quality and aquatic ecology will be assessed in section 7.8 below.

The EIAR described the **ground conditions** at the windfarm site and grid connection route as consisting of highly modified peaty soils underlaid by a bedrock of Carboniferous limestone and till. The GSI maps indicate that there are no underlying karst features at the windfarm site although there are several features (incl. enclosed depressions / dolines) along the grid connection route. The underlying groundwater body is classified as a Regionally Important Aquifer-Karstified (conduit). The nearest drumlin features are located a substantial distance away to the N, W and E. The survey results indicate that soil depths vary across the site (c.0.4m to over 5m), the deepest section is located at the site entrance, and the depths at the

turbine locations range from less than c.1m at T2 to less than 2m at T1. The lands are in a mix of mainly commercial forestry and agricultural use.

The **GSI Landslide Susceptibility Maps** indicate that the landslide risk over the relatively flat site is categorised as Low, there are no recorded landslide events on the GSI online landslide event database, and the nearest recorded landslide occurred c.10km from the site at the Bricklieve Mountains to the NW.

The **Peat Stability Risk Assessment** contains desk and site investigations. It confirmed that peat depths vary across the site (c.0.4m to 5.8m), the deepest section is located at the site entrance, the depths at the turbine locations range from less than c.1m at T2 to less than 2m at T1, and that the slopes across the site are less than 3 degrees. The PSRA used Infinite Slope Stability Analysis to calculate the Factor of Safety (FOS) across the entire site, under both drained and un-drained conditions. Taking account of the gentle slopes, the assessment concluded that there was a Low risk of instability, and that normal detailed design and construction mitigation would be adequate, including ongoing site supervision. The EIAR did not identify any other stability issues along the haul route, grid connection route or access tracks, subject to general construction control measures.

The EIAR states that the **excavation works** will give rise to peat (c.12,000m³) and subsoils (c.6,000m³) which would be reused as fill material (c.1,000m³) or stored within 4 x peat storage/deposition areas within the site. Some 25,000m³ of stone would be imported from a local quarry for use on the site for turbine hardstands and internal access tracks. The EIAR states that during the **construction phase** contamination of groundwater, bedrock and soils could arise from leakages, spillages and tree felling, but with no significant adverse impacts subject to mitigation measures (incl. 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** could arise from vehicle movements, surface water runoff and wind action, but with no significant adverse impacts subject to mitigation measures (incl. adherence to the CEMP, Method Statements, floating roads & monitoring).

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

7.7.3 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area in over a 2-day period in October 2022. I had regard to the relevant EIAR studies which are summarised in section 7.7.2 above. I had regard to any concerns raised in relation to land, soil and geology and to any issues addressed in the applicant's Further Information and Appeal submissions. I also had regard to relevant national, regional and local planning policy, which is summarised in section 5.0.

The proposed windfarm would be located within a low-lying and relatively flat rural area (c.100mAOD) which mainly comprises commercial forestry plantations, cutover/raised bog and agricultural land. The proposed grid connection route slopes gently up from S to N towards the Boyle 38kV substation (c.80m to 120mAOD) over mainly agricultural lands. The windfarm lands mainly drain SE, S and SW to the Kingsland Stream and River, and hence to the Breedoge River, and ultimately Lough Gara to the W. According to the GSI Landslide Susceptibility Maps, the risk of landslides is Low across the site and the two turbines would be located in areas where the Landslide Risk is Low, and on lands described as stable in the Peat Stability Risk Assessment. The site elevations (c.100mAOD) and slope gradients (c.2-3 degrees) do not vary significantly across the site nor at the location of the turbines. The substation and met mast would also be located on relatively flat land, as would the access tracks, whilst the grid connection would traverse a moderately undulating area to the N of the site.

Average soil depths across most of the site vary from c.0.4m to c.5.8m. The peat based organic soil, which has been highly modified by commercial afforestation, is underlain by Limestone bedrock, and the two turbines would be located within areas where the soil depth is quite shallow and less than 1m or 2m. None of the turbines would be located in areas there is a recent history of landslides or soil slippages.

The proposed works would require the excavation and movement of substantial quantities of peat and subsoil from across the site and it is estimated that a small proportion would also be reused within the site during the construction phase, although most of the excavated peat would be stored in 4 x peat deposition areas. The peat and subsoil excavation and movement works have the potential to affect soil hydrology and drainage patterns in the area (refer to section 7.8 below). The unregulated excavation and construction work, particularly on deeper soils or N facing slopes, could give rise to instability and possible slippage, with resultant serious adverse impacts on the environment.

However, an extensive range of site suitability tests were undertaken at the site of the various project elements, and as previously stated, the results indicate a varied peat depth across the site. The 2 x turbines would occupy positions where the Landslide Susceptibility Risk is rated as Low, where the peat depths are moderated (c.1-2m), where the slope angles are also low (c.2-3 degrees), the aspect is mainly SW facing and the soils are relatively firm, which would further reduce the risk of instability and slippage in the surrounding lands. It is noted that the Peat Stability Risk Assessment concluded that the risk of stability issues arising at the turbine locations was Low. Site conditions and soil depths at the met mast, substation 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 /subsoil storage and reuse and prevent erosion and slippage. The proposed arrangements are considered acceptable in terms of mitigating the risk of soil 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.

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, substation, and any new or upgraded access tracks. I am satisfied that the results of the Peat Stability Risk Assessment

are robust and that the proposed works would not give rise to soil or peat instability or slippage, subject to the stringent implementation of EIAR mitigation measures and any recommended conditions, along with on-going site inspections and monitoring for the lifespan of the windfarm project. Although the excavation of bedrock and soil would have a permanent direct impact on soils and geology, the impacts on the environment would not be adverse.

7.7.4 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 any written submissions made in relation to Land and Soil in addition to those specifically identified in this section of the report and 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 soil/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.

7.8 Hydrogeology & hydrology (incl. Water quality & ecology)

7.8.1 Project description

The proposed development would comprise the excavation works associated with the construction of 2 x turbines and associated infrastructure including temporary construction compounds, substation, met mast, access tracks, peat depositories, underground cabling and grid connection to the N, along with minor road works along the delivery and haul routes. The underground section of the grid connection would not cross any significant watercourses/drainage ditches to the N of the site.

7.8.2 Locational context

The windfarm site and grid connection route are located within the Shannon River Basin District, and at regional level the lands are located across the River Boyle and Upper Shannon Catchments. The relatively flat and poorly drained soils are underlain by a bedrock of Carboniferous limestone with several karst features along the grid connection route (incl. dolines). There are several lakes in the wider area, including Lough Gara SPA to the W, and Clogher and Cavetown Loughs to the E. There are several peatland habitats to the S, E and W of the windfarm site including the further afield Bellanagare Bog, Callow Bog and Cloonshanville Bog SACs, which are located in excess of 5km from the site.

In relation to **surface waters**, the site mainly drains SE, S and SW to nearby watercourses (Kingsland Stream, Kingsland River & Breedoge River) via on-site forestry drainage ditches to ultimately discharge into Lough Gara to the W. The low-lying windfarm site and environs (c.100mAOD) are characterised by commercial forestry plantations, cutover/raised bog and agricultural lands. The grid connection route, which slopes up gently from S to N (c.80m to 120mAOD) across mainly agricultural land would not traverse any significant watercourses. The receiving watercourses are under pressure from several sources (incl. urban wastewater, agricultural run-off & food processing factories). EPA River Water Quality status is described as varying between Moderate and Good Status (Q3-4 & Q4), whilst Biological Water Quality status varies Poor and Moderate Status.

The site overlies the Carrick-on-Shannon **groundwater body (GWB)** which is fed diffusely through percolation and at specific swallow hole points. There are several lakes in the wider area (incl. Loughs Gara, Clogher & Cavetown) and several peatland habitats (incl. Bellanagare, Callow & Cloonshanville Bogs), which are under the hydrological influence of this GWB. The WFD status for this waterbody is classified as Good in terms of water quality, groundwater movement is localised which reflects the relatively flat topography of the area, and mainly drains SW. The underlying groundwater body is classified as a Regionally Important Aquifer-Karstified (conduit), and the vulnerability varies between Low and Extreme. There are no Groundwater Protection Zones or mapped wells within or close to the windfarm site, although there are several wells located to the N of the windfarm and to the E and W of the grid connection route. The N section of the grid connection route overlies an area that forms part of the Rockingham Source Protection Area that serves the Boyle/Ardcarn public water supply, which is of regional importance.

According to the OPW's river and coastal 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 confined to the area surrounding stream channels.

7.8.3 Environmental Impact Assessment Report

Chapters 4, 5 and 6 of the EIAR and associated Technical Appendices dealt with and aquatic ecology, geology, hydrogeology, hydrology and water quality, and several desktop studies and field surveys were undertaken. Chapter 5 of the EIAR dealt with geology, soils, land and soil stability, which are assessed in section 7.7 above. Chapter 4 dealt with Biodiversity and issues related to terrestrial ecology and birds will be assessed in sections 7.9 and 7.10 below.

The EIAR described the receiving environment (incl. topography, soils & geology, surface & ground water, and water quality & aquatic ecology), and it had regard to the EPA and WFD water quality reports and studies, OPW Flood Maps and the GSI groundwater database. A range of desktop and field investigations were undertaken

including a hydrological walkover survey and drainage mapping; biological and chemical surveys; habitat and ecological assessments for fisheries, aquatic invertebrates; an identification of flood risk; and an assessment of groundwater quality, flow paths, abstraction points and wells was undertaken. It stated that water quality in the receiving watercourses is of Moderate and Good Status (Q3-4 & Q4) and that the waterbodies support a variety of freshwater invertebrates, fish (incl. Salmon) and plant species. Groundwater conditions were described as Good.

The EIAR 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 site work locations (incl. turbines, access tracks, peat depositories, substation & grid connection) and along sections of the haul route. It proposed a range of mitigation, avoidance, inspection and monitoring measures as part of a Construction and Environment Management Plan (CEMP), adherence to best practice and compliance with relevant Guidelines. The main potential impacts and proposed mitigation measures in relation to the turbines, associated infrastructure, grid connection and delivery routes are summarised below.

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, wells or public abstraction points, 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 operational or future decommissioning phase.

7.8.4 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider riparian environment over a 2-day period in October 2022. I had regard to the relevant EIAR studies and field investigations which are summarised in section 7.8.3 above. I had regard to any concerns raised in relation to hydrogeology and hydrology (incl. water quality & ecology), brush management, water quality monitoring (pre &

post construction), and to any issues addressed in the applicant's Further Information and Appeal submissions. I also had regard to relevant national, regional and local planning policy, which is summarised in section 5.0.

The excavation and movement of large quantities of soil and spoil around the site has the potential to release fine sediments into the network of drainage ditches that traverse the site via surface water runoff. Tree felling, vegetation clearance and brush management also have the potential to release fine sediments and nutrients into surface waters. The on-site forestry ditches drain into nearby waterbodies that discharge to larger waterways in the surrounding area to SE, S and SW, including the Kingsland Stream and Kingsland and Breedoge Rivers, and ultimately Lough Gara. The excavation of bedrock for turbine foundations and any resultant dewatering has the potential to adversely affect ground and surface water levels, recharge and flow rates across the site and surrounding environs.

The unregulated release of sediments and nutrients could have an adverse long-term impact on water quality and aquatic ecology within and downstream of the site, and any dewatering at excavation sites could affect ground water levels. Such uncontrolled events could also adversely impact the chemical balance and the biological composition of the receiving surface and ground waters downstream, with resultant adverse impacts on water supplies and drinking water quality (incl. abstraction points & wells), water quality, habitats and species (incl. Salmon). Accidental fuel spillages from storage areas, machinery, vehicles and directional drilling equipment also have the potential to contaminate surface and groundwater. The underground cabling works for sections of the grid connection, and improvement works along the delivery route also have the potential to release sediments into nearby watercourses, which could affect drinking water quality and cause disturbance to aquatic wildlife.

The potential impact of the proposed works on geology, soils and site stability is dealt with in section 7.7 above and the potential impacts on terrestrial ecology will be assessed in sections 7.9 below.

In relation to design and layout of the windfarm infrastructure, the turbines, ancillary structures and associated infrastructure would be mainly located a substantial distance from any nearby watercourses and tree felling would not take place close to them. The proposed over and underground grid connection would not traverse any significant watercourses, however the N section would overlie the regionally important Rockingham Source Protection Area that serves the Boyle/Ardcarn public water supply scheme.

The EIAR also proposes a comprehensive suite of mitigation measures to control and manage the release of fine sediments and hydrocarbons into surface and groundwater to prevent pollution of nearby water courses and underlying groundwater bodies. These measures are summarised in section 7.8.3 above they mainly include layout and design features, buffers around drainage ditches (c.20m), and a series of avoidance measures as part of a Construction Environmental Management Plan (incl. surface water management), along with ongoing site inspections and water quality monitoring, and strict adherence to all relevant water quality protection requirements. The number of watercourse monitoring points was increased in response to concerns raised by the County Council. And any outstanding Council concerns in relation to the management of surface water and related site matters (include brush management) could be addressed in the final CEMP, and by compliance with normal council requirements for the management of surface water run-off and water quality.

The EIAR and associated Technical Appendices contain the results of desktop and field surveys of the windfarm site and grid connection route, and the surrounding watercourses that they drain into. The surveys did not record the presence of any sensitive aquatic invertebrate species or prey species for fish within the on-site drainage ditches or in the immediately downstream watercourses.

The construction works would largely avoid the on-site drainage ditches which discharge to the aforementioned watercourses and ultimately Lough Gara, except for one that would be protected by a 20m buffer zone. The 2 turbines, associated infrastructure and grid connection works would be located on relatively flat land and within areas where the Landslide Susceptibility and Soil Instability risks are Low, and

the EIAR assessments concluded that standard detailed design and construction mitigation would be adequate. Any dewatering would be managed and controlled by mitigation measures with no resultant adverse impacts on surrounding groundwater levels and flows, abstraction points or wells anticipated. Having regard to the foregoing, I am satisfied that the proposed suite of mitigation measures would adequately protect water quality, public water supplies, aquatic ecology and fisheries in the vicinity of the windfarm works, associated tree felling, brash clearance, ancillary infrastructure works and along the grid connection and delivery routes. This would be subject to ongoing monitoring of water quality at all of the outfall points identified in the original application and subsequent submissions.

The results of the EIAR desktop and field water quality and aquatic ecology surveys are considered to be robust. The mitigation measures are considered acceptable as they will prevent any serious long-term damage to water quality, public water sources and aquatic ecology, and ultimately Lough Gara SPA. I am also satisfied that the various EIAR studies were undertaken in substantive accordance with the relevant guidance for such works. However, the EIAR 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.

Conclusions:

I have had regard to the separation distance between the windfarm site, grid connection and delivery route from the nearest recorded locations of sensitive aquatic species, and to the layout and siting of the project elements, which would be avoid any nearby watercourses. I am satisfied, that subject to the stringent implementation of the EIAR mitigation measures, including ongoing inspections and monitoring, and adherence to relevant water quality and water protection requirements, in-combination with any recommended conditions for the construction and operational phases, the proposed works would not have a significant adverse impact water quality, water supplies, water quality, sensitive aquatic species, or any other sensitive ecological sites in the area. Finally, notwithstanding the characteristics of the underling bedrock (incl. Carboniferous limestone) which is relatively permeable and the relatively vulnerable nature of the underlying Aquifer, I

am satisfied that the proposed works would not have an adverse impact on groundwater quality, flows or any ground water abstraction points or wells in the wider area. This would be subject to the stringent implementation of the EIAR mitigation measures and any recommended conditions, and adherence to EU and national standards to protect water quality, during the construction and operation phases of the project.

7.8.5 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, monitoring and aquatic ecology, 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 tree felling, turbines and associated infrastructure and the underground sections of the grid connection would not have a significant adverse effect on water quality, aquatic ecology, public water supplies, water quality 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.

7.9 Biodiversity (Terrestrial ecology – excl. birds)

7.9.1 Project description

The proposed development would comprise construction works associated with 2 x turbines and associated infrastructure including temporary construction compounds, substation, met mast, access tracks, peat depositories and underground cabling, along with minor road works along the delivery and haul routes.

7.9.2 Locational context

As previously stated, the windfarm site occupies a flat and relatively low-lying location, the grid connection lands slope down gently from N to S, and there are several protected European and National sites in the wider area. The windfarm site is mainly characterised by a commercial forestry plantation, cutover bogs and farmland. The lands drains SE, S and SW to the Kingsland Stream and River, and hence the Breedoge River via a network of on-site drainage ditches and watercourses which ultimately discharge to the Lough Gara SPA to the W. The grid connection to the existing 38kV Boyle substation would be mainly located over an agricultural area that is mainly characterised by fields and hedgerows. Other protected and/or sensitive sites in the wider area include lakes, bogs and woods, and it is possible that mobile species from further afield sensitive sites visit the site and environs (incl. birds).

7.9.3 Environmental Impact Assessment Report

Chapters 4 of the EIAR, associated Technical Appendices and Further Information Response dealt with Biodiversity within the windfarm site and environs, and along the grid connection and delivery routes. Desktop studies, walkover surveys and field investigations were undertaken and used to inform the conclusions of the EIAR and NIS. The EIAR identified sensitive sites located within the Zone of Influence/c.15km radius of the site (SACs, SPAs & pNHAs). It mapped habitats, identified plant species and conducted field surveys for mammals and invertebrates within and close to the site and environs. It identified the main potential impacts as habitat loss and degradation (mainly conifer plantations, cutover bogs & improved agricultural

grasslands), disturbance to various plant and animal species during construction, and bat and bird collisions with turbines when operational. It proposed several mitigation measures (incl. avoidance, buffer zones, seasonality & timing of works & pre-construction surveys), and concluded that there would be no adverse residual or cumulative impacts post mitigation. The EIAR Appendices contains the results of several ecological surveys (incl. habitats, vegetation, mammals & invertebrates).

Designated sites: the windfarm site and environs are located within a commercial forestry plantation, cutover bogs and agricultural lands which are not within a European or National site. There are several designated sites in the wider area (c.15km) which have the potential to be affected by the works (incl. lakes & bogs).

Habitats: the site and environs are mainly occupied by coniferous a forestry plantation in various stages of maturity, cutover bog and improved agricultural grassland (incl. hedgerows), along with improved agricultural grassland and amenity grassland along the grid connection, delivery and haul routes.

Flora: no protected plant species were recorded.

Bats: desktop and field surveys were carried out around the site and along the grid connection route, and no suitable roosting or nesting habitat was identified. Passive automated seasonal dusk and dawn bat surveys were undertaken between 2017 and 2020 around the site, along with a transect survey along the surrounding local road network. Several species of foraging and commuting bats were recorded present in the area.

Other mammals: a mammal survey, which concentrated on protected species (incl. Fallow deer, Badger, Otter, Red squirrel & Pine marten), did not record any evidence of their presence, or any suitable resting, breeding or nesting sites.

Invertebrates: the desktop surveys noted the presence of Marsh fritillary in the wider area, and Habitat Condition Assessment and Larval Web Surveys were undertaken.

EIAR Conclusions:

The EIAR identified potential impacts during the construction and operational phases (incl. habitat loss & species disturbance), 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, seasonal works, avoidance measures around construction sites and operational turbines. The EIAR concluded that there would be no adverse cumulative impacts in-combination with other plans or projects in the wider area.

7.9.4 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area over a 2-day period in October 2022. I had regard to the relevant EIAR environmental and ecological studies which are summarised in section 7.9.2 above and the concerns raised by the Prescribed Bodies which are summarised in sections 3.0 and 4.0 above (incl. NPWS). Their concerns related to potential impacts on protected sites, habitats, protected species, and the quality of the surveys. I had regard to the Applicants' response to these concerns which is also summarised above, and to relevant national, regional and local planning policy. The windfarm site is not located within a European site although there are several sensitive sites (incl. SACs, SPAs & pNHAs) within a 15km radius of the works, and there is an aquatic connection to the Lough Gara SPA to the W via on-site forestry drainage ditches and off-site watercourses.

The proposed windfarm would be mainly located within a coniferous forestry plantation which is surrounded by cutover bog and agricultural lands which are defined by hedgerows, and the site is traversed by forestry drainage ditches. The grid connection route would mainly cross agricultural and amenity lands (incl. Boyle golf course). The proposed excavation and construction work could result in the loss or disturbance to parts of these habitats. The windfarm site and environs are used by several species of mammal (incl. deer which I observed exiting the site). The surrounding area has commuting and foraging potential for several species of bat, and the proposed works could result in disturbance, displacement, fatalities, barotrauma and loss of support habitat. Remnants of support habitat for Marsh

fritillary, which is a protected invertebrate species, are located to the far S and NE of her site. 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 7.8 above, the impacts on birds will be assessed in section 7.10 below. Issues related to European sites will be addressed in Section 8.0 (Appropriate Assessment).

Natural Heritage Areas (NHAs):

The proposed development would not be located within a designated NHA or proposed NHA. Although there are several proposed NHAs in the wider area (incl. lakes, bogs & woods), they do not have the potential to be affected by the works because of the nature and characteristics of the site, the absence of an aquatic connection with the development site, and the extent of the separation distances.

Habitats and flora:

The receiving environment is mainly characterised by coniferous forestry, cutover bog and agricultural land that is defined by hedgerows, and these habitats are of relatively low conservation value. The proposed tree felling, excavation and construction work have the potential to adversely affect several habitats (incl. habitat loss, and changes to hydrology & groundwater conditions) in the absence of mitigation, and operational phase maintenance could give rise to habitat disturbance.

In relation to **habitat loss**, most of the habitats that will be permanently lost due to hard infrastructure, buffers around the turbine and substation, and along the grid connection and delivery and haul routes, mainly comprise coniferous forestry, improved agricultural grassland, hedgerows and amenity grassland. Most of these habitats are of moderate local value, and their loss would not have a significant adverse impact on biodiversity. It is noted that the commercial forestry plantation would be felled at some stage in the future, irrespective of the windfarm proposals.

The proposed tree felling, excavation and construction work also have the potential to adversely affect the surrounding environment and any further afield sensitive habitats by way of ***disturbance to soil 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 7.7 and 7.8 above in relation to soil stability, erosion control and surface water management. In the long term, it is also possible that the habitats could be further restored in the future after decommissioning.

Other habitats: There is a myriad of forestry, agricultural and amenity grassland habitats located within the windfarm site, in the vicinity of the access road, and along the grid connection and delivery and haul routes which would be marginally affected by the proposed works. However, having regard to the low conservation value of these habitats, I am satisfied that there would not be any significant loss of or damage to any other habitats, subject to the implementation of mitigation measures and adherence to best construction practices.

Flora: No protected plant species were recorded within the site during the desk top studies and field surveys, with no adverse impacts anticipated.

Mammals:

Bats:

The NPWS raised concerns in relation to the quality of the bat surveys and the absence of mitigation and monitoring measures, and the further information provided by the applicant is summarised in sections 3.0 and 4.0 above.

The windfarm site does not offer optimum conditions for any of the bat species recorded foraging and commuting in the surrounding area which is characterised by agricultural fields defined by hedgerows and cutover bog (incl. Common & Soprano pipistrelle, Leisler's bat, Brown long-eared bat & Myotis spp.).

The proposed windfarm would undoubtedly cause a temporary disturbance to various bat species during the ***construction phase***. No roost or nursery sites were recorded in the vicinity with no adverse impacts anticipated on breeding populations.

The proposed tree felling and construction works have the potential to adversely affect and disturb bats in the absence of mitigation. Most of the bat species that frequent the surrounding area commute and forage along hedgerows, and the dense cover of the commercial forestry plantation provides less than optimal foraging and commuting opportunities, although their presence was recorded in low numbers. I am satisfied that there would be no adverse impacts on bats during this phase.

During the **operational phase** the turbines could give rise to a collision risk and barotrauma in bats. The EIAR carried out a Collision Risk Assessment for 3 x high risk species (Common & Soprano pipistrelle and Leisler's bat) which are present in relatively low numbers around the site based on the survey results. The risk of collision was calculated as relatively low with no significant adverse impacts at local level. The collision risk for the remaining bat species was also considered to be low with no significant impacts anticipated. (incl. Brown long-eared bats & Myotis spp.).

The main **mitigation measures** comprise the provision of 50m buffer zones from blade tip to the nearest forestry/treeline/hedgerow around all turbines, and these vegetation free zones would deter foraging activity in the vicinity due to the resultant absence of prey species. Other measures that could be considered to lessen bat fatalities include pitching the blades out of the wind (Feathering) which can reduce fatality rates by up to 50% according to SNH. This procedure could be required by way of a planning condition. It is noted that Leisler's bat is less habitat dependent than the other species as it favours aerial hawking and is therefore at a higher risk of collision with turbines. Curtailment should also be considered as a mitigation measure between mid-April to mid-October, between sunset and sunrise, at certain windspeeds and temperatures. This procedure could also be required by way of a planning condition with precise details to be agreed with the planning authority. Pre-construction bat surveys and post construction monitoring should also be required. Having regard to the main mitigation measures and recommended conditions (incl. buffer zones, feathering, curtailment, surveys & monitoring), I am satisfied that the risk of collision and/or barotrauma for bats would not be significant during the operational phase.

There would be little or no **artificial lighting** at night during the operational phase, except for aviation lights which research to date concludes would not be problematic for foraging bats. I am satisfied that bats would gradually habituate to the windfarm with no significant adverse long-term impacts anticipated.

Other mammals: The works would give rise to disturbance and displacement during the construction phase, however there would be no significant loss of foraging grounds and affected mammal species (incl. Fallow deer, Badger, Irish hare, Otter, Red squirrel & Pine marten) would gradually habituate to the windfarm after the works are completed. Although it is possible that Otter may commute across the site via the on-site drainage ditches and nearby watercourses there is no physical evidence that they use the site on a regular basis. Given that the drainage ditches and nearby watercourses would not be affected by in-stream works, and that a 20m buffer would be provided around nearby ditches, no significant adverse impacts are anticipated for Otter in terms of loss of foraging grounds or prey species. Having regard to the concerns of NPWS in relation to the presence of Fallow deer within the site and environs, and notwithstanding the applicants' submissions, based on my site inspection, I am satisfied that this species does utilise the site as commuting route. However, the lands and environs are not covered by any sensitive designations that include deer as a Qualifying Interest species and given that the commercial forestry plantation will ultimately be felled at some stage in the future, I am satisfied that that the presence of Fallow deer in the locality would not justify a reason to refuse permission for the project. Notwithstanding this conclusion a pre-construction mammal survey should be carried out before works commence.

Amphibians & reptiles: Except for Common frog, the desk top studies and field surveys did not record any evidence of amphibian or reptilian species within the site, although it is possible that some reptilian species frequent the area including along the forestry tracks (incl. Common lizard). However, I am satisfied that the proposed development would not have a significant adverse impact on any of these species.

Invertebrates: No rare or protected invertebrates were recorded within the site or immediate environs during the field surveys. However, Marsh fritillary, along with remnants of supporting habitat including Devils bit scabious and larval webs were

recorded during the surveys, but at isolated locations to the NE (damp grassland) and S (cutover bog) of the site. I am satisfied that the proposed development would not have an adverse impact on this protected species. No other rare or protected invertebrates or suitable support habitat was recorded during the surveys.

Fisheries & aquatic species: Potential impacts are assessed in section 7.8 above.

Bird species: Potential impacts are assessed in section 7.10 below.

Invasive species: Invasive plant species may occur along the haul route and in the surrounding area, appropriate measures should be put in place to prevent the spread of such species during the construction phase, and an Invasive Species Management Plan should be required by way of a planning condition.

7.9.5 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 any written submissions made in relation to biodiversity including sensitive habitats and protected species, included those of the NPWS, 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, would not have any significant, adverse, long term residual impacts on any sensitive sites, habitats, flora

or fauna in the area, subject to the full implementation of the EIAR mitigation measures, any recommended conditions and adherence to 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.

7.10 Biodiversity (Terrestrial Ecology – incl. Birds)

7.10.1 Project description:

The proposed development would comprise the excavation and construction work associated with the erection of 2 x turbines and associated infrastructure including a met mast, substation, peat depositories, and over and underground cabling, along with minor road works along the delivery route.

7.10.2 Locational context

As previously stated, the site occupies a relatively flat and low-lying location, and there are several protected European and National sites in the wider area. The windfarm site and environs are mainly characterised by commercial forestry plantations, cutover bog and agricultural land, and the surrounding lands slope down gently to the N and S. The lands drains SE, S and SW to the Kingsland Stream and River and hence the Breedoge River via a network of on-site drainage ditches and watercourses which ultimately discharge to the Lough Gara SPA to the W. The cross-country over and underground grid connection to the existing 38kV Boyle substation to the N would be mainly located in an agricultural area characterised by fields and hedgerows. Other protected and/or sensitive sites in the wider area include lakes, bogs, fens and woods, and it is possible that mobile species from further afield sensitive sites visit the site and environs (incl. several species of bird).

7.10.3 Environmental Impact Assessment Report

Chapter 4 of the EIAR and associated Technical Appendices dealt with birds within the windfarm site, its environs and the wider area. It identified the main potential impacts as habitat loss, disturbance, displacement and collision risk. Several desktop studies, walkover surveys and detailed seasonal field surveys (incl. Vantage Point, Transect & Hinterland surveys) were undertaken over various seasons (2017-2021) and Targeted surveys were undertaken. Breeding status was determined for several species and several designated sites in the wider area were identified.

The EIAR recorded the infrequent but regular presence of c.17 x Target and Secondary species in the survey area, including raptors (Buzzard, Peregrine Falcon, Kestrel, Sparrowhawk, Hen harrier & Short-eared owl) and waterbirds (Whooper swan, Mute swan, Curlew, Lapwing, Snipe, Mallard, Grey heron & Lesser black-headed gull). All species registered a low bird count at the site and within the surrounding survey area. An occasional Whooper swan flight path between Lough Gara and Cavetown Lough (2-3 birds) was identified to the N of the proposed turbines, and Greenland white-fronted geese was not recorded during the surveys. Both species are SCI species for the Lough Gara SPA.

The EIAR stated that although there would be **Habitat loss** during the construction phase as a result of coniferous tree felling, and that the overall impact on foraging, nesting or breeding birds would be minimal having regard to the low ecological value of this habitat. There was some potential for **Disturbance or Displacement** effects during the construction phase which would be managed by the mitigation measures contained in the Construction and Environmental Management Plan. **Collision Risk** Modelling (Appendix 4-4) over a 30-year period was undertaken for target species identified in the bird surveys (Whooper swan). The risk of collision with the c.3.7km long overhead cables was estimated as negligible based on the survey results and the agricultural character of the area which does not provide optimal foraging opportunities for key species. It concluded that the risk of collision with turbines and overhead cables was negligible for all recorded species. It also considered **in-combination** effects and it identified several sensitive sites, plans, projects and windfarms within a 20km radius of the site. It concluded that the project would not have a significant adverse effect on wintering or migratory waterbirds or contribute to **a barrier effect** as the area 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 construction and future decommissioning stages; seasonality and timing of works; avoidance of bird breeding season for tree felling; pre-construction & construction phase bird surveys; installation of bird deflectors; appointment of an Environmental Manager; and post construction and operational monitoring.

EIAR conclusion: The EIAR concluded that there would be disturbance during the construction phase, 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.

7.10.4 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area over a 2-day period in October 2022. I had regard to the relevant EIAR ornithology studies which are summarised in section 7.10.3 above. I also had regard to the concerns raised by the NPWS which is summarised above which related to the potential adverse impacts on sensitive sites and SCI bird species. I then 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 5.0.

The potential impact of the proposed works on aquatic and terrestrial ecology (excl. birds) have been assessed in sections 7.8 and 7.9 above and issues related to European sites will be addressed in Section 8.0 (Appropriate Assessment).

The windfarm site is not located within a European site although there are several SPAs in the wider area, including the Lough Gara SPA to the W which is designated for Whooper swan and Greenland white-fronted Goose, and Cavetown Lough to the E. The proposed underground and overhead grid connection would traverse mainly agricultural land to the N. There are several further afield sensitive sites (SACs, SPAs & p/NHAs) within a wider radius of the site which are designated for their importance to birds (incl. resident, breeding, migratory, water & wintering birds). The proposed works have the potential to affect bird species during the construction, operational and future decommissioning phases through loss of, damage to, or fragmentation of habitat, noise disturbance, displacement, and turbine an/or overhead cable collision risk. The windfarm also has a minor potential to contribute to cumulative barrier effects in combination with other windfarms in the wider area.

The EIAR carried out extensive seasonal bird surveys over a c.4-year period which concluded that the site does not offer optimal or suitable conditions for a foraging and ground nesting birds, although several species were recorded in the surrounding area (incl. Snipe to the S). The results are summarised in section 7.10.3 above and I am satisfied that the survey effort substantially accords with current SNH Guidance and other relevant site and species-specific guidelines.

The proposed development will undoubtedly cause a disturbance to birds during the construction phase as a result of the works and resultant loss of habitat, and temporary species displacement may occur. During the operational phase, the project has the potential to affect bird mortality rates in several species as a result of colliding with turbine rotor blades and/or overhead cables, and to act in-combination with other windfarms in the wider area to create a barrier effect for foraging and commuting species.

Raptors:

The EIAR surveys observed a small number of raptor flights (incl. Hen harrier & Buzzard) over the survey area but not over the windfarm site. None of the flights were recorded at an equivalent collision risk height and Collision Risk Modelling was not carried out for any of the raptor species. The surveys did not record any breeding activity or nests within or close to the site. Although a Hen Harrier winter roost was recorded in the wider area, there is limited foraging and nesting potential because of the mainly closed canopy coniferous tree cover. The EIAR mitigation measures provide for pre-construction and operational phase surveys, tree felling activity will be avoided during the bird breeding season, and bird deflectors will be installed along the overhead section of the grid connection route to avoid collisions. However, the temporary cessation of work if a Hen Harrier nest is discovered and/or the creation of a 500m buffer around any identified nests, along with on-going monitoring during and after construction should be required by way of a planning condition. The mitigation measures and recommended conditions would ensure that the proposed development would not have any adverse effects on raptor species (incl. Hen harrier & Buzzard) at the site or the wider area. No significant adverse long-term impacts are anticipated in terms of habitat loss, displacement or mortality, and raptor species would gradually habituate to the area post construction.

Wintering & migratory waterbirds:

There are several European and nationally sensitive waterbodies in the wider area (c.15km) which are designated for their conservation importance for wintering and migratory waterbirds. These sites have been designated for their importance as freshwater or peatland habitats, although they also frequented, and/or flown over and/or between by some species of waterbird (incl. Whooper swan, Mute swan, Lesser Black-backed Gull, Curlew & Grey heron). The Lough Gara SPA to the W has been designated because of its importance for wintering and migratory waterbirds of conservation interest (Whooper swan & Greenland White-fronted Goose).

Whooper swan was not recorded in significant numbers on or close to the windfarm site, along the overhead section of the grid connection route, or at rotor blade height. Collision Risk Modelling over a 30-year period was undertaken for this species which recorded an avoidance rate of 99.5% and a predicted collision rate with operational turbines of 0.02 per year and 0.6 over 30 years. The risk of collision with the c.3.7km overhead cables was estimated as negligible based on the survey results and the agricultural character of the surrounding area, although mitigation (bird deflectors) would make the cables more visible. **Greenland White-fronted Goose** was not recorded at all during the site surveys, there is no evidence that it has visited Lough Gara for several years, and Collision Risk Modelling was not undertaken for this species. Potential effects of the proposed development on European sites and their SCI species are addressed in Section 8.0 of this report (Appropriate Assessment).

Several **other species** of waterbird that frequent the lakes and waterbodies within a c.15km radius of the windfarm site were not recorded as frequent visitors to the site and environs in abundant numbers. Collision Risk modelling was not undertaken as there is a negligible risk of collision with turbines during the operational phase over the 30-year lifespan of the windfarm, given their low survey numbers.

In conclusion, no significant adverse long-term impacts on wintering and migratory waterbirds are anticipated in terms of loss of foraging or breeding habitat, species displacement, or increased mortality as a result of collisions with turbine rotor blades or overhead cables.

Other species:

Most species recorded within the site and environs will gradually habituate to the works after the construction phase is completed, and the windfarm is operational. The risk of collision with turbine rotor blades would be low and no significant adverse long-term impacts are anticipated in terms of habitat loss, displacement or mortality.

Barrier & cumulative effects:

There are three windfarms within a 20km radius of the windfarm site, and several infrastructure projects are planned for the wider area. The EIAR VP surveys indicate that the windfarm site is not regularly foraged or overflowed by migratory species associated with the further afield European and national sites although it could lie within or close to an occasional flightpath for low numbers of Whooper swan between Lough Gara (W) and Cavetown Lough (E). However, there would be no cumulative impacts or barriers to movement as a result of any in-combination effects. 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.

7.10.5 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, including those of the NPWS, 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.

7.11 Cultural Heritage & Material Assets (Tourism & Heritage)

7.11.1 Project description

The proposed windfarm would comprise the construction of 2 x turbines along with associated site works which would include new and upgraded entrance and internal access tracks, underground cabling and overhead transmission cables, substation, met mast, temporary construction compounds and peat depository areas, along with minor works along the delivery and grid connection routes. The proposed works would therefore inevitably give rise to ground disturbance.

7.11.2 Project location

The proposed windfarm would occupy a relatively low-lying and flat rural location in NW Roscommon, close to the county boundaries with Sligo and Leitrim. The appeal site lands are mainly characterised commercial forestry plantations and cutover bog surrounded by farmland, with several dispersed houses and farms along the local roads. There are cultural heritage features and walking routes in the wider area.

7.11.3 Environmental Impact Assessment Report

Chapter 11 of the EIAR dealt with archaeology and cultural heritage and several desktop and field studies were undertaken. The EIAR did not identify any National or Recorded Monuments or recorded artifacts within the site but noted that the underlying soils may have archaeological potential, particularly along the grid connection route in the vicinity of Boyle Golf Course. It noted the presence of several features of archaeological interest within a c.2.5km radius of the site (incl. ringforts, barrows & enclosures), and the wider area which include Crannogs in Cavetown Lough (c.3.5km E) and Rathcroghan megalithic complex (c.12km S). The EIAR concluded that no sites of archaeological interest would be adversely affected by the proposed works subject to mitigation measures (pre-testing along the GCR within Boyle Golf Course, archaeological monitoring during construction, and preservation by record & avoidance). The EIAR did not identify any Protected Structures or NIAH sites within the site or surrounding environs.

Parts of **Chapter 3 and 10** of the EIAR dealt with Tourism and Amenity in relation to employment, attractions, amenity areas, landscapes, lakes, views, driving and walking routes (Refer to Sections 7.4 and 7.5 above). It concluded that the tourism and amenity 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 connections, environmental services, waste management 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 archaeology, cultural heritage, tourism, or material assets, subject to mitigation measures with no residual or cumulative impacts predicted.

7.11.4 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area over a 2-day period in October 2022. I had regard to the relevant EIAR archaeological, cultural heritage, tourism, amenity and material assets studies which are summarised in section 7.11.3 above. I had regard to any concerns raised and to any response of the applicant to them in the Further Information and Appeal submissions. I also had regard to relevant national, regional and local planning policy, which is summarised in Section 5.0 above.

Archaeology:

There are no National or Recorded Monuments or known sites of archaeological interest within the windfarm site and the immediately surrounding area. However, there are several features in the wider area and along the overhead grid connection route, particularly in the vicinity of Boyle Golf Course and environs (incl. ringforts, barrows & enclosures). The EIAR mitigation measures would ensure that the groundworks along the underground section of the grid connection located within the golf course are pre-tested, however the pre-testing should be extended to the wider area. It is also possible that the windfarm site may contain as yet undiscovered artefacts, given that it lies within a peatland environment. All of the ground works at the windfarm site and along the grid connection route should be monitored during the

construction phase in accordance with the mitigation measures. Any discoveries should be recorded and preserved by record. The proposed development would not have any significant adverse impacts on the character or setting, and/or views from the further afield Crannogs within Cavetown Lough to the E or Rathcroghan megalithic complex to the S. It is noted that the County Council did not raise any specific concerns in relation to archaeology.

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, but none of particular note. There are also several features of interest located along the delivery and haul routes (incl. bridges) where care should be taken to ensure that no damage occurs to structures in the wider area. It is noted that Council did not raise any specific concerns in relation to cultural heritage.

Tourism:

The main tourism issues relate to the visual impact of the proposed windfarm on the surrounding landscape, protected views and scenic routes along with the consequent impact on tourism, recreation and amenity (incl. walking, driving, cycling & golfing). There are intermittent views towards the site from the surrounding local road network and from some further afield heritage and amenity sites (incl. the Curlew Mountains & Lough Key Forest Park to the N, and Rathcroghan megalithic complex to the S). It is noted that recent research on the impact of windfarms on tourism and recreational activities is varied and inconclusive. However, having regard to the conclusions reached in section 7.4 (Landscape & Visual Amenity) above, I am satisfied that the proposed development would not have a significant impact on tourism, amenity or recreation. Furthermore, the proposed windfarm and overhead grid connection would not interfere with the character or setting of any heritage features which form part of the tourism and amenity offer of the county (and surrounding counties) 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 to the nearest airport and subject to compliance with standard aviation conditions. It is noted that the IAA had no objections subject to its standard visibility requirements. I am satisfied that there would be no significant impacts from electromagnetic interference given the dispersed settlement pattern in the surrounding area. However, measures (Incl. 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 which would have a positive environmental impact (refer to section 6.3 of the Planning Assessment of a more detailed assessment). It is also noted that the County Council did not have any specific concerns in relation to telecommunications or aviation. The proposed windfarm would also not interfere with agriculture or fisheries and felled forestry would be replaced (refer to sections 7.7 & 7.8 above for a more detailed assessment of potential impacts on soils, water quality & fisheries).

7.11.5 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 any 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, amenity 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.

7.12 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.

7.13 Consideration of cumulative impacts

There are several existing and permitted plans and projects located within a 20km radius of the proposed development which have the potential to act in-combination with the proposed development, particularly in relation to water quality in the surrounding surface and ground water bodies. These include a number of agricultural, commercial, water supply, wastewater treatment and urban projects as well as three further afield operational windfarms. I am satisfied that any in-combination effects can be avoided, managed and mitigated by the measures which form part of the proposed development and any recommended planning conditions. There is, therefore, nothing to prevent the granting of permission on the grounds of cumulative effects.

7.15 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.

7.16 Reasoned Conclusion on Significant Effects

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

- 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 sediments and other materials during excavation and construction and the necessity to undertake construction activities in the vicinity of existing drainage ditches. 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; sediment and erosion control; and drainage management.
- The ***risk of soil erosion and soil instability during the construction and operational phase*** through a lack of control over, or mismanagement of the excavation and soil/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.
- ***Biodiversity impacts*** arising from habitat loss and fragmentation, changes to the vegetation on the site, loss of foraging habitat and disturbance to birds and bats, 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, Bat & Mammal Surveys; Water Quality protection measures (as above); an Invasive Species Management Plan; and the appointment of an Ecological Clerk of Works.

- 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 and noise 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 a turbine curtailment strategy and 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.

8.0 APPROPRIATE ASSESSMENT

8.1 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.

8.2 Natura Impact Statement

The application was accompanied by a Stage 1 AA Screening Report and a Stage 2 NIS. The report described the site and the proposed development, and utilised the extensive data collected as part of the EIAR desk and field surveys. The reports confirmed that the proposed development would not be located within a European site. The AA screening exercise identified several European sites within a potential Zone of Influence, it had regard to the EIAR ecological surveys and assessments [water quality, aquatic & terrestrial ecology, bird and bat surveys (incl. collision risk assessments)], and it screened out the sites which would not be affected by the proposed development. The NIS report also dealt with several European sites located in the vicinity of the proposed forestry replanting areas in other parts of the country, which will be the subject to separate Forestry Licence requirements.

The **AA Screening** exercise identified the following European site that has the potential to be affected by the proposed windfarm development:

- Lough Gara SPA

The **Natura Impact Statement** listed the Conservation Objectives and Special Conservation Interests for this site. It identified the potential sources of direct and indirect impacts on the site, assessed the potential impacts relative to its Conservation Objectives. It had regard to the EIAR water quality assessments and ecological surveys (incl. a Whooper Swan Collision Risk Assessment). It concluded that the risk for the bird species which are designated as Special Conservation Interest for the European site was minimal subject to the implementation of the EIAR mitigation measures to protect water quality avoid collision with overhead cables.

The desk top studies and site surveys described the site and surrounding area along with potential connections to nearby and further afield European sites. The reports assessed the site and their environs for terrestrial, aquatic and mobile species of Special Conservation Interest and Qualifying Interest and for the European sites. The ecological characteristics of the sites were described as was the recorded presence of any QI and SCI species, and various water quality data for the receiving watercourses was provided.

The NIS formally concluded that, in the light of best scientific knowledge the proposed development by itself and in-combination with other plans or projects, will not adversely affect the integrity of any of the European Sites concerned.

Having reviewed the NIS and supporting documentation, I am satisfied that it provides adequate information in respect of the baseline conditions, does clearly identify the potential impacts, and does use best scientific information and knowledge, and details of mitigation measures are provided. I am satisfied that the information is sufficient to allow for the appropriate assessment of the proposed development, subject to the further consideration of European sites located within an enlarged Zone of Influence (further analysis below).

8.3 AA Screening Assessment

The main issues related to ecology, the planning authority's consideration of the proposed development and the concerns raised by the Prescribed Bodies (incl. NPWS) and the applicants response are summarised and addressed in sections 3.0 and 4.0 of this report. Section 7.0 contains an environmental impact assessment, and Sections 7.8 to 7.10 should be read in conjunction with this assessment.

The European sites within the Zone of Influence (i.e the area over which an impact can have a potential effect in relation to proximity of European sites and the mobility of faunal species from further afield sites) of the proposed works and approximate separation distances are set out below. The applicant's bird surveys recorded the presence of bird species flying over or close to the appeal site that may be of Special Conservation Interest for some further afield European sites.

However, having regard to the characteristics of the subject site and environs, the substantial separation distances between the proposed works and the European sites in-combination with the specific features and requirements for many of the recorded bird species (incl. habitat preference, dietary needs & foraging distances), only the European sites that have a realistic and pragmatic mobile connection to the site will be included in this Screening assessment.

The proposed windfarm 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 European sites are located within the Zone of Influence of the windfarm site and their Qualifying Interests and Special Conservation Interests and approximate separation distances from the site are listed below.

European sites	Site code	Qis & SCIs	Separation distances	Aquatic or mobile link
Lough Gara SPA	004048	Whooper Swan Greenland white-fronted Goose	c.6km W c.9km aquatic	Yes
Lough Arrow SPA	004050	Little Grebe & Tufted Duck Wetlands & Waterbirds	c.11km N	No
Bellanagare Bog SPA	004105	Greenland white-fronted Goose	c.11km SW	No

Cloonshanville Bog SAC	000614	Active & Degraded raised bogs Depressions on peat substrates Bog woodland	c.6.5km SW	No
Bellanagare Bog SAC	000592	Active & Degraded raised bogs Depressions on peat substrates	c.10.5km SW	No
Callow Bog SAC	000595	Active & Degraded raised bogs Depressions on peat substrates	c.10.5km SW	No
Lough Arrow SAC	001673	Hard mesotrophic waters	c.11km N	No
Bricklieve Mountains & Keishcorran SAC	001656	Turloughs Semi-natural dry grasslands Lowland hay meadows Calcareous screes Marsh fritillary White-clawed Crayfish	c.11km NW	No
Tullaghanrock SAC	002354	Active & Degraded raised bogs Depressions on peat substrates	c.13.5km W	No
Unshin River SAC	001898	Floating river vegetation Semi-natural dry grasslands Molinia meadows Alluvial forests Salmon & Otter	c.15 NW of substation	No

The potential effects relate to:

- Release and transport of pollutants in ground or surface water flowing into the European sites via on-site tributaries and watercourses.

- 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, including: -
 - Loss of habitats used by QI/SCI species.
 - Loss of foraging & commuting areas used by QI/SCI species.
 - Noise disturbance to QI/SCI species during construction.
- Interference with flight lines of species associated with the European sites or mortality related to collision with operational turbines and overhead grid connection transmission cables.
- Impacts on vegetative composition of habitats and/or support habitats as a result of colonisation by invasive species

Based on my examination of the NIS report and supporting information (incl. the desktop studies & field surveys), NPWS website, the NPWS and County Council submissions, aerial and satellite imagery, the scale of the proposed works and nature of the likely effects, the substantial separation distance and functional relationship between the proposed works and the European sites and their conservation objectives, the site specific characteristics, the species specific characteristics and requirements (incl. habitat preference, diet & foraging distances), and the absence of suitable support habitats or an aquatic connection between the European site and the proposed works, taken in conjunction with my own assessment of the subject site and surrounding area, I conclude that a Stage 2 Appropriate Assessment is required for the following European site which I consider to be within the Zone of Influence by reason of potential mobile and aquatic connections.

- Lough Gara 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 and NIS 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 one of the European sites, having regard to the conservation objectives of this site, and that progression to a Stage 2 Appropriate Assessment is required.

8.4 Appropriate Assessment:

The details for the remaining European site within the Zone of Influence of the proposed development is summarised below.

Site name	SCIs	Conservation Objectives	Attributes & Targets
Lough Gara SPA	Whooper swan Greenland white-fronted goose	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.	Population trends & Distribution (Generic).

Favourable Conservation Status for species is achieved when:

- 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 Gara SPA:

This European site lies within the Zone of Influence of the proposed works as it has an aquatic connection to the site via a network of on-site drainage ditches, tributaries and watercourses, and the SCI bird species may also utilise and/or fly over the appeal site and environs.

European site description:

Lough Gara is located on the Counties Sligo/Roscommon border SW of the Curlew Mountains and between the towns of Boyle and Ballaghaderreen. It is a shallow medium-sized lake, and the main inflowing rivers are the Rivers Lung and Breedoge,

while the main outflow is the Boyle River to the NE. The windfarm lands are drained by the Kingsland Stream and River which drain into the Breedoge River that flows into Lough Gara from the SE. The lough is reported to be used regularly by internationally important populations of Greenland White-fronted Goose and Whooper Swan, along with a wide range of other waterbird species. It is also a Ramsar Convention site and a Wildfowl Sanctuary.

Qualifying Interest habitats and species:

The Lough Gara SPA is designated for its importance to 2 x species of bird (Whooper swan & Greenland white-fronted goose) and the Conservation Objective seeks to maintain or restore their favourable conservation condition.

Potential direct effects: The proposed development would not be located within a European site, and it is not relevant to the maintenance of any European site. No potential for direct effects having regard to the location and scale of the proposed development and to the separation distance between the works and the SCI species.

Potential indirect effects: There is potential for indirect effects on this European site and its SCI species during the ***construction phase*** as a result of loss of foraging habitat and water pollution. The unmitigated release of fine sediments during construction works and hydrocarbons by way of accidental spillages from machinery, could give rise to water pollution in the Kingsland Stream and River, and Breedoge River with resultant impacts on the availability of biomass for the SCI species Whooper swan & Greenland white-fronted goose. The uncontrolled introduction of invasive species from works vehicles could give rise to the colonisation of support habitats by invasive species, with resultant impacts on the SCI species, in the absence of mitigation. There is also potential for additional significant indirect adverse effects during the ***operational phase*** when the works are complete in relation to the operational turbines and overhead power cables (incl. barrier effects & collision risk).

Mitigation measures:

The NIS mitigation measures (incl. design & management), which would serve to protect the European site and its SCI species from adverse effects, include: -

- Preparation of a CEMP.
- Timing & seasonality of works.
- Appointment of an Environmental Manager.
- Adherence to best construction practices.
- Monitoring (pre & post construction) for birds.
- Fitting bird deflectors to overhead cables.
- Surface water management measures to protect water quality, including:
 - Regular surface water monitoring
 - Tree felling in accordance with licence requirements
 - Control of refuelling on site
 - Management of stockpiles & peat deposition areas
 - Waste management plan & off-site waste disposal

Whooper swan:

According to the NPWS Site Synopsis, Lough Gara SPA supports an internationally important population of Whooper Swan, and it is located c.6km to the W of the windfarm site. The site drains to the Kingsland Stream and River which flow SW into the Breedoge River before it discharges to Lough Gara to the W over an aquatic distance of c.9km. Any diminution of water quality or loss of feeding biomass during the construction phase would be mitigated by the measures contained in the EIAR, CEMP, Surface Water Management Plan, and Invasive Species Management Plan (as recommended by way of condition).

The non-designated Cavetown Lough, which is located c.3km to the E of the windfarm site, is intermittently frequented by Whooper Swans. The straight-line distance between the Lough Gara and Cavetown Lough is c.9km. This species was recorded flying over or close to the windfarm site during the 2 x years of Vantage Point surveys (6 x flight paths for 2 or 3 birds at heights of 50m & 80m) but not at or close to collision risk height, or in the vicinity of the proposed turbine locations.

Collision Risk Modelling over a 30-year period was undertaken for this species which recorded an avoidance rate of 99.5% and a predicted collision rate with operational turbines of 0.02 per year and 0.6 over 30 years.

The proposed windfarm site and Cavetown Lough also lie well beyond the key 5km foraging range for the SPA SCI population, and although there may be a collision risk associated with the overhead grid connection transmission cables, they would be fitted with bird deflectors with no adverse impacts predicted. No long-term impacts on the Whooper Swan population are anticipated in terms of loss of foraging habitat or biomass, species displacement or increased mortality as a result of collisions with turbine rotor blades or overhead grid cables. No adverse impacts on the generic Attributes and Targets (incl. Population trend & Distribution) are anticipated.

Greenland white-fronted Goose:

According to the NPWS Site Synopsis, Lough Gara SPA supports an internationally important population of Greenland white-fronted Goose, and it is located c.6km to the W of the windfarm site. The site drains to the Kingsland Stream and River which flows SW into the Breedoge River before it discharges to Lough Gara to the W over an aquatic distance of c.9km. Any diminution of water quality or loss of feeding biomass during the construction phase would be mitigated by the measures contained in the EIAR, CEMP, Surface Water Management Plan, and Invasive Species Management Plan.

The non-designated Cavetown Lough is located c.3km to the E of the windfarm site and c.9km to the E of Lough Gara. The proposed windfarm site lies within the key 5km to 8km foraging range for the Greenland White-fronted Goose population, and it is likely that during winter floods when the flood area covered by Lough Gara expands, that Cavetown Lough could lie within the extremities of the foraging range. However, the windfarm site, which is characterised by coniferous plantations, does not offer optimal foraging grounds for this species, although the surrounding agricultural fields and cutover bogs may have some potential.

This species is classified as a migratory, non-breeding, overwintering population that is known to return to established or traditional sites for both roosting and foraging. However, desk top surveys (since c.2016) indicate that this species no longer frequents either Lough Gara or Cavetown Lough on a regular basis. The EIAR bird surveys did not record its presence at either location during the survey effort (except for a small flock at Lough Gara, c.9km to the SW of the site in 2018), and there were

no observations of this species flying over or close to the windfarm site and environs during the Vantage Point Surveys.

This SPA SCI species is therefore unlikely to be adversely impacted by the operational turbines, and although there may be a collision risk associated with the overhead grid connection transmission cables, they would be fitted with bird deflectors with no adverse impacts predicted. No adverse impacts on the generic Attributes and Targets (incl. Population trend & Distribution) are anticipated.

Potential in-combination effects: Potential indirect in-combination effects relate to damage to SCI species and support habitats because of accidental spillages and sediment run off during the works, and the accidental introduction of invasive species by construction vehicles. This could give rise to pollution, contamination and/or colonisation with resultant impacts on water quality for Whooper swan and Greenland white-fronted goose, having regard to the various plans or projects in wider area (Incl. agriculture, food processing, domestic discharges & recreation) in the absence of mitigation. However, having regard to the implementation of the aforementioned mitigation measures and recommended conditions (see below), I am satisfied that there would be no adverse cumulative effects on the European site or its SCI species.

Potential in-combination effects: There are three small operational, permitted and planned windfarms within a 20km radius of the site and several infrastructure projects are planned for the surrounding area. The EIAR Vantage Point surveys indicate that the overall site could lie to the S of a flight path for Whooper Swan which was recorded in small numbers, however it concludes that there would be no cumulative impacts or cumulative barriers to movement as a result of in-combination effects, based on the survey results and collision risk modelling. Given the lack on any local impacts on this species, it is unlikely that the windfarm would contribute to cumulative impacts in the wider area in-combination with other projects.

Suggested conditions: A Project Ecologist should be appointed to oversee the works. Pre and post construction monitoring should take place. All plant and machinery used during the works should be cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens.

Conclusion: I am satisfied that the proposed development individually or in combination with other plans or projects would not adversely affect the integrity of these European sites in light of its Conservation Objectives, subject to the implementation of mitigation measures outlined above.

Other European sites:

It is noted that several other SPAs and SACs, which have been designated for their importance for a variety of bird species, are located well outside the core foraging range for the designated species (incl. Tufted Duck & Little Grebe). The further afield European sites located in the vicinity of the proposed forestry replanting area (which were screened in by the applicant) are outside the scope of this assessment as they would be subject to Forestry Licence assessments.

Appropriate Assessment Conclusion:

I concur with the conclusions reached in the NIS that the proposed windfarm development (incl. cable connections, delivery & haul routes) will have no significant adverse effects (direct, indirect or in-combination) on the Conservation Objectives, Qualifying Interests or Special Conservation Interests for the Lough Gara SPA, or for any other European Site.

8.5 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 No. 004048 or any other European site, in view of the site's Conservation Objectives.

9.0 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, 2023,
- c. The Regional Spatial & Economic Strategy for the North and West Region, 2020,
- d. the “Wind Energy Development Guidelines - Guidelines for Planning Authorities”, issued by the Department of the Environment, Heritage and Local Government in June 2006 (Draft Amendments, 2019),
- e. the policies of the planning authority as set out in the Roscommon County Development Plan, 2022 to 2028,
- 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.

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, renewable energy, other 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.

Appropriate Assessment:

The Board agreed with the screening assessment and conclusion carried out in the Inspector's report that the Lough Gara SPA is the only European site for which there is a possibility of significant effects and must therefore be subject to Appropriate Assessment.

The Board considered the Natura Impact Statement and all other relevant submissions and carried out an appropriate assessment of the implications of the proposed development for European Sites in view of the site's Conservation Objectives for the Lough Gara SPA. The Board considered that the information before it was sufficient to undertake a complete assessment of all aspects of the proposed development in relation to the site's conservation objectives using the best available scientific knowledge in the field.

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

- (i) Site Specific Conservation Objectives for this European Site,
- (ii) Current conservation status, threats and pressures on the qualifying interest / special conservation interest features,
- (iii) likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,
- (iv) view of the Department of Arts, Heritage and the Gaeltacht,

(v) mitigation measures which are included as part of the current proposal,

In completing the AA, the Board accepted and adopted the Appropriate Assessment carried out in the Inspector's report in respect of the implications of the proposed development on the integrity of the aforementioned European Site, having regard to the site's Conservation Objectives.

In overall conclusion, the Board was satisfied that the proposed development would not adversely affect the integrity of European sites in view of the site's Conservation Objectives and there is no reasonable scientific doubt as to the absence of such effects.

Environmental Impact Assessment:

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

- (a) the nature, scale, location and extent of the proposed development on a site,
- (b) the Environmental Impact Assessment Report (EIAR) and associated documentation submitted in support of the application,
- (c) the report of the planning authority,
- (d) the submissions received from the prescribed bodies, and
- (e) the Inspector's report.

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment. The Board agreed with the examination, set out in the Inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the application. The Board considered 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 Construction and Environment Management Plan (CEMP) which include specific provisions relating to the control of dust, noise and shadow flicker.
- The risk of soil instability and soil 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 Construction and Environment Management Plan (CEMP) which include specific provisions relating to 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 Construction and Environment Management Plan (CEMP) which include specific provisions relating to groundwater, surface water and soil erosion.
- Biodiversity impacts, including on habitats, mammals, birds, bats, fisheries and invertebrates, would be mitigated by the implementation of specific mitigation to protect mammals, birds, bats, fisheries and invertebrates, during the construction and/or operational phases.
- 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 an afforested rural 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 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.

10.0 CONDITIONS

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, including the further information received by the planning authority on the 7th day of April 2022, 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 period during which the development hereby permitted is constructed shall be 5 years from the date of this order.

Reason: In the interests of clarity.

3. 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.

4. The developer shall ensure that all construction methods and environmental mitigation measures set out in the Environmental Impact Assessment Report, Natura Impact Statement, Further Information response submission and all 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.

5. The developer shall ensure that all soil and water quality related mitigation measures are implemented in full and monitored throughout the life cycle of the construction works and monitored throughout the operational phase, and that excavation of the on-site peat depositories does not extend below winter water table levels.

Reason: In the interest of protection of the environment.

6. 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 wind speeds of 5m/s or greater
 - ii. 40 dB(A) $L_{90,10min}$ at all other wind speeds
 - (b) 43 dB(A) $L_{90,10min}$ at all other timeswhere wind speeds are measured at 10m above ground level.

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

Reason: In the interest of residential amenity.

7. 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.

8. The following design requirements shall be complied with:

- (a) The wind turbines will have a maximum tip height of 150 metres and a maximum rotor diameter 138m.
- (b) Final details of the turbine design, hub height, tip height and blade length complying with the maximum limit and within the range set out in the application documentation, along with details of colouring, shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.
- (c) Cables within the site shall be laid underground.
- (d) The wind turbines shall be geared to ensure that the blades rotate in the same direction.
- (e) 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.

9. 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.

10. 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.

11. 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 roads, 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. Any works, including reinstatement works, works to existing junctions on the national road network, and grid connection cable excavations under the national road network shall comply with Transport Infrastructure Ireland (TII) standards as outlined in TII Publications, County Council roads requirements, and shall be subject to Road Safety Audit as appropriate.

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

12. The developer shall retain the services of a suitably qualified and experienced Ecologist to undertake pre-construction surveys at the various project elements, immediately prior to commencing work in order to check for the presence of protected species in the vicinity (incl. badgers, otters, deer, nesting birds and bats). A 500m buffer should be placed around any protected bird species nest sites and maintained free from construction works until the nest is vacated. Derogation licences shall be obtained as required.

Reason: In the interest of protecting ecology and wildlife in the area.

13. 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.

14. The developer shall implement mitigation measures to lessen the potential for bat fatalities arising from collision with rotating turbine blades which shall include Feathering or pitching the blades out of the wind, and Curtailment between mid-April to mid-October, between sunset and sunrise, at certain windspeeds and temperatures. Details of the Curtailment shall be developed following consultation with, and agreed in writing with, the planning authority prior to commencement of development, and post construction monitoring shall be undertaken.

Reason: To ensure appropriate monitoring of the impact of the development on the bat species of the area.

15. 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.

16. The construction and future decommissioning and works shall be limited between 08.00-hours and 18.00-hours Monday to Saturday excluding Bank Holidays.

Reason: To protect the amenities of nearby residential properties.

17. 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.

18. 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.

19. 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.

20. 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.

21. 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.

11. Professional Declaration

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Karla Mc Bride
Senior Planning Inspector
24th March 2023