An Bord Pleanála

Inspector's Report

ABP-308019-20

Development	Windfarm & ancillary works
Location	Derrybrien, County Galway
Planning Authority	Galway County Council
Applicant	Gort Windfarms Ltd. (ESB)
Type of Application	Substitute Consent, Section 177E.
Submissions	Galway County Council Inland Fisheries Ireland Commission for Railway Regulation Transport Infrastructure Ireland An Taisce Friends of Derrybrien Environment South Galway Flood Relief Committee Kevin Deering & Peter Crossan Michael Gallagher Michael Mahony Martin Collins VP Shields Solicitors
Date of Site Inspection:	14th to 16th February 2021
Inspector:	Karla Mc Bride

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1.0 INTRODUCTION

1.1 Introduction

This report refers to an application for Substitute Consent under section 177E of the Planning and Development Act, 2000 (as amended) in respect of an application made by Gort Windfarms Limited for the regularisation of an existing operational windfarm and ancillary works at Derrybrien, County Galway. Gort Windfarms Limited submitted this application following receipt of a Notice served by Galway County Council under Section 177B of the Planning and Development Act, 2000, as amended. The Notice was dated 9th June 2020.

The Notice informed the developer/owner/operator of the final judgement of the European Court of Justice (C-215/06) in relation to previous permissions granted by Galway County Council and An Bord Pleanála for several projects that would have required the submission of an Environmental Impact Statement. It directed the developer/owner/operator to apply to An Bord Pleanála for substitute consent and to provide a Remedial Environmental Impact Assessment Report. The Notice advised that a Remedial Natural Impact Statement may also be required.

The application relates to a 70-turbine windfarm, substations, overhead grid connection, associated infrastructure, tree felling and site works, including emergency and remedial works undertaken following the occurrence of a peat slide in October 2003. The submitted documents describe the spatial extent of the windfarm and the peat slide, and they deal with the construction (before & after the peat slide), operational and decommissioning phases of the development.

1.2 Site location and description

The windfarm site is located within the N Slieve Aughty Mountains in S County Galway, to the S of Loughrea, E of Gort and W of Portumna. The site occupies the upper slopes of Cashlaundrumlahan Mountain which is characterised by a mix of blanket bog, commercial forestry plantations and turf cutting areas. The lands slope up from c.325mOD c.365mOD, and the site mainly comprise deforested blanket bog with turf cutting in the SE section. The site is bound to the N, W and SW by forestry plantations and to the SE by turf cutting areas.

The windfarm site contains an existing operational 70-turbine windfarm and substation along with associated infrastructure (including internal site roads, access tracks, met masts and drainage). The associated infrastructure also includes the emergency works that were installed on- and off- site to contain the 2003 peat slide (including several barrages). The overhead grid connection extends steeply downslope from the Derrybrien substation over c.7.8km to the Agannygal 110kV substation to the S which is located within an elevated section of a forestry plantation. This substation is connected to the pre-existing Ennis-Agannygal - Shannonbridge 110kV overhead powerline.

The upland site is located to the N of Derrybrien village, and the surrounding area is sparsely populated with several houses dispersed along the local road. Vehicular access to the site was originally off the N18 to the W, and then via the R353 Gort to Derrybrien road to the S, NE along Black Road, and W along an internal track that also provides access to the forestry plantations and turf cutting areas. The M6 to the N and M18 to the W, which were completed after the windfarm became operational, also provide access to the site from the motorway network.

The site is traversed by a network of drainage and watercourses that mainly drain SE to the Owendalulleagh River which discharges to Lough Cutra to the SW, and N to the Boleyneendorrish River, which both ultimately discharge to Galway Bay at Kinvarra. A very small section of the site drains E to the River Duniry which ultimately discharges to Lough Derg. The lands traversed by the overhead grid connection and on which the Agannygal substation is located, also mainly drain to the Owendalulleagh River.

The Owendalulleagh River supports several species of fish (including brown trout, stone loach, eel and lamprey) and it drains into Lough Cutra SAC and SPA to the SW which are designated for 2 x species (Lesser horseshoe bat & Cormorant). Lough Cutra is drained by the Beagh/Gort Rivers which discharge to the sea at Kinvarra and ultimately Galway Bay SAC and SPA, which are designated for variety of coastal habitats and bird species.

The windfarm site lies completely within the Slieve Aughty Mountains SPA which was designated two bird species (Hen harrier & Merlin) several years after the windfarm became operational. There are several other natural heritage sites in the wider area including bogs, lakes, woodlands caves and turloughs, and several sections of the Slieve Aughty Mountains are designed as an NHA for peatlands.

The windfarm site and overhead grid connection route do not contain any Recorded Monuments or any significant features of archaeological, historic, or architectural interest although there are several features of heritage interest in the surrounding area and along the road network including some bridges. The nearest National Monument is located to c.10km to the NW (Kelly Castle) and there is a possible Cashel site adjacent to an access road in the NW section of the site. The Slieve Aughty Mountains are no longer covered by any scenic amenity designations. There are protected views towards the site from Lough Rea c.10km to the N and from Lough Derg c.20km to the SE. There are several walking and cycling routes in the wider area, including the East Clare way to the S.

There are several other infrastructure projects in the wider area including 2 x operational and permitted windfarms to the N and W of the site (Sonnagh Old & Keelderry), Tynagh thermal power station to the E, Gort regional water supply and flood relief schemes. Other nearby projects include commercial forestry, peat extraction and quarries. The M18 and M6 motorways were completed after the windfarm became operational.

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

1.3 Peat Slide Event

A peat slide event occurred in October 2003 during excavation work in the vicinity of T68 on the S side of the site. Approximately 450,000 tonnes of peat were disturbed over an area of c.25ha and it resulted in the mass movement of c.250,000 tonnes of material downslope in a SE arc on to lands located between the windfarm site and Flaggy Bridge along the R335 via Black Road. The event was exacerbated by heavy rainfall in late October 2003 which in turn extended the spatial extent of the slippage

along the Owendululleagh River, with fine peat sediments reaching Kinvarra Bay to the NW via Lough Cutra and the Gort/Beagh river systems.

The slippage resulted in the deposition of peat along the banks (and environs) of the Owendululleagh River and its tributaries, fish kills, smothering of aquatic species and diminution of water quality. A series of emergency stabilisation and containment works were undertaken in the immediate aftermath of the slippage including the construction of 8 x barrages and peat repositories which were used to contain and store the mobile material (4 barrages remain in place). When construction works resumed in 2004 following extensive geotechnical and peat stability surveys, it was decided to omit T16 and some access tracks as a precautionary measure.

1.4 Planning history

1.4.1 Application site:

Phase 1: Boleyneendorrish & Derrybrien West

PL07.106290: Permission granted by ABP for a 23-turbine windfarm & ancillary works at Derrybrien West & Boleyneendorrish following a 3rd party appeal (97/3470). EIS submitted.

Reg.Ref.03/5642: Permission granted by the Council for an extension of appropriate period until March 2005.

Reg.Ref.05/316: Permission granted by the Council for an extension of appropriate period until June 2006.

Phase 2: Caheranearl, Derrybrien North

PL07.106292: Permission granted by ABP for a 23-turbine windfarm & ancillary works at Caheranearl, Derrybrien North following a 3rd party appeal (97/3652). EIS submitted.

Reg.Ref.03/5637: Permission granted by the Council for an extension of appropriate period until March 2005.

Reg.Ref.05/317: Permission granted by the Council for an extension of appropriate period until June 2006.

Phase 3: Toormacnevin, Bohaboy & Derrybrien North

PL07.122803: Permission granted by ABP for a 25-turbine windfarm & ancillary works at Toormacnevin, Bohaboy & Derrybrien North following a 3rd party appeal (00/4581). EIS submitted.

Reg. Ref. 02/3560: Permission granted by the Council for a change of turbine type.

Grid connection:

Reg. Ref. 99/2377: Permission granted by Council for a 110kV transmission line.

Reg.Ref.04/4085: Permission granted by the Council for an extension of appropriate period until December 2005.

1.4.2 Slieve Aughty Mountains:

Reg.Ref.00/3234: Permission granted by the Council for 10-turbine windfarm at Sonnagh Old c. 3.5km NW of Derrybrien windfarm (9-turbines constructed).

PL07.125978: Permission granted by ABP for a 48-turbine windfarm at Keelderry c.3km W of Derrybrien windfarm (00/5248) and extension of duration of permission granted by the Council under 07/3345 (not constructed).

Reg.Ref.03/2943: Permission granted by the Council for a 400MW Combined Cycle Gas Turbine Power Station at Tynagh Mines, c.10km to the E of the site.

1.4.3 Related projects:

Related projects include replacement forestry planting in Counties Roscommon and Tipperary (c.119ha) in lieu of the clear-felling and non-replanting of Lodgepole pine and Sitka spruce within the Derrybrien windfarm site under a Forest Service Felling Licence (Ref FL 3983).

1.4.4 Other projects in surrounding area:

Other projects on the surrounding area include: - extensive commercial forestry plantations; turf cutting/turbary; overhead transmission lines (Moneypoint to Oldstreet 400kV & Ennis to Shannonbridge 110kV); M18 motorway; Gort Regional Water Supply Scheme; flood relief works (Gort, Kiltartan & Kinvarra); quarries (Derrybrien & Ballynakill); and works at Beagh Bridge at Lough Cutra to the SW.

1.5 CJEU Judgement/s

Case C-215/06: In July 2008, the Court of Justice of the European Union (CJEU) delivered a judgement against the Irish State finding issues with how the state had implemented the Environmental Impact Assessment (EIA) Directive. The judgement specifically refers to the Derrybrien Windfarm.

Case C-261/18: In November 2019, a further CJEU judgement found that the State had not complied with the 2008 judgement and required remedies to comply with the ruling.

2.0 DEVELOPMENT

2.0 Documentation

The application documentation includes the following:

- Statutory Documents Report
- Planning Report
- Remedial Environmental Impact Assessment Report (rEIAR)
- Remedial Natura Impact Statement (rNIS)
- Consideration of Article 12 of Habitats Directive Report
- Planning Drawings & Photomontages

The rEIAR is supported by 18 x Technical Appendices which include:

- Appendix 5: Noise & Vibration
- Appendix 6: Shadow Flicker
- Appendix 7: Biodiversity (Terrestrial Ecology)
- Appendix 8: Aquatic Ecology & Fisheries
- Appendix 9: Landscape & Visual
- Appendix 10A: Soils, Geology & Land
- Appendix 10B-F: Geotechnical Stability (including PSRAs)
- Appendix 11: Hydrology & Hydrogeology
- Appendix 11A: Flood Risk Assessment
- Appendix 11B: Flood Assessment of Turlough Flooding
- Appendix 12: Air & Climate (including carbon emission calculations)
- Appendix 13: Material Assets
- Appendix 14: Traffic & Transportation
- Appendix 15: Cultural Heritage

2.2 Development Description

The development consists of the constructed:

1. Derrybrien windfarm (Phases 1, 2 & 3)
2. A 110kV electricity grid connection
3. Ancillary works (including works related to the 2003 peat slide event)

1. The **Derrybrien windfarm** comprises the following main elements:
    - 70 x wind turbines (60m high & 75m tip height)
    - 2 x meteorological masts (49m high)
    - 1 x sub-station & ancillary works (including underground cables)
    - Construction compound
    - Access & service roads, and local road improvements
    - Borrow pits, quarries & peat repositories.
    - All associated site works (including excavations & drainage)

2. The **110kV grid connection** comprises the following main elements:
    - Overhead electrical lines (7.8km long)
    - Connection from Derrybrien substation to Agannygal substation.
    - Connection from Agannygal substation to Ennis Ennis-Shannonbridge 110kV overhead line.
    - Overhead electrical connector supported on 45 support structures:
        - 24 x double wooden pole sets
        - 4 x end masts
        - 6 x angle masts
        - 1 x intermediate mast
    - Agannygal substation (110kV) & ancillary works

3. The **Ancillary works** comprise the following main elements:
    - Tree felling (c.220ha)
    - Temporary & permanent accessways
    - Temporary construction work sites

- All works carried out in response to peat slide event including:
    - Engineering & drainages works.
    - Construction of in-stream barrages.
    - Development of borrow pits, quarries & peat repositories.
    - Works to access roads, roads & bridges.
    - Drainage works.

2.3 **Remedial Environmental Impact Assessment Report (rEIAR)**

The rEIAR described the site and surroundings including the scale and extent of the 2003 peat slide event; stated that the development would comply with relevant European, national, regional and local planning and energy policy; considered alternatives; and provided a detailed project description.

The main body of the rEIAR described the receiving environment; outlined the study methodologies; assessed the impacts that have occurred, impacts that are occurring and potential future impacts on the receiving environment under the usual range of headings; set out mitigation measures for the construction (before and after the peat slide), operational and decommissioning phases for all elements of the project (including the windfarm, grid connection, substations, ancillary works and replacement forestry). It identified residual impacts post mitigation, assessed cumulative impacts, and described potential interactions and interrelationships. It also had regard to the risk of major accidents and natural disasters.

The rEIAR was informed by several detailed technical appendices which included extensive geotechnical investigations, peat stability risk and flood risk assessments, and a visual impact analysis. A Non-Technical Summary was also provided.

The rEIAR concluded that the environmental impacts associated with the historic peat slide event during the initial construction phase were significant in the short term with regard to habitat loss, water quality, aquatic ecology and fisheries. It concluded that the scale and extent of the impact was managed by a series of emergency interventions that were put in place (including several barrages, borrow

pits & peat repositories), and that the subsequent mitigation measures which were put in place to manage site drainage and peat stability minimised any future impacts.

The rEIAR concluded that environmental impacts associated with the construction phase (after the peat slide event) and the operational phases (to date), along with the continued operational and decommissioning phases would be minimal post mitigation; that the main identified risks which relate to peat stability, water quality, aquatic ecology, fisheries, birds and bats will be managed by mitigation measures. It stated that the development would comply with climate change, carbon storage, renewable energy and planning policy; that it would not adversely affect amenities (residential, visual, heritage or material assets) or give rise to a traffic hazard.

The rEIAR provided details of professional competence and difficulties encountered mainly related to the absence or quality of surveys conducted prior to 2000.

2.5 Remedial Natura Impact Statement (rNIS)

A remedial Stage 1 AA screening exercise was carried out for the development (including the windfarm, grid connection, substations, tree felling & replacement forestry, and the peat slide event). A remedial Stage 2 NIS was prepared.

2.5.1 Remedial Stage 1 AA Screening Report

The remedial AA Screening exercise identified 30 x European sites within the Likely Zone of Influence and concluded that the development could have and could potentially affect the Qualifying Interests and Conservation Objectives of 2 x European Sites (Lough Cutra SPA & Slieve Aughty Mountains SPA), and progression to a Stage 2 assessment was considered necessary for those sites.

2.5.2 Remedial Natura Impact Statement Report

The rNIS described the windfarm project and baseline ecology of the site and it assessed the likely effects on the 2 x European sites (Lough Cutra SPA & Slieve Aughty SPA Mountains). It identified the potential for direct and indirect effects on the European sites, proposed a range of mitigation measures, and assessed the potential for cumulative effects in-combination with other plans and projects in the

area. It concluded that the windfarm project did not, and would not adversely affect the integrity of any European Site.

2.5 Article 12 of EU Habitats Directive Report

This report dealt with the elements of the CJEU Judgement (2008) and CJEU Opinion (2019) that relate to Article 12 of the Habitats Directive in relation to the strict protection afforded to species listed in Annex IV and the implementation of measures to achieve this protection. Article 12(1)(b) refers to the deliberate disturbance to species and Article 12(4) refers to the incidental killing of species. The report identified several Annex IV species that had the potential to be disturbed (bats & otter) or incidentally killed (bats) by the development.

3.0 STRATEGIC POLICY

3.1 National Policy

3.1.1 National Planning Framework Plan, 2018-2040

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

3.1.2 Climate Action Plan, 2019

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

4.1.3 National Peatlands Strategy, 2015

This document sets out a national strategy for the sustainable management of peatlands and section 5.3 deals with Peatlands and Climate Change. It describes the role of natural undrained peatlands as carbon stores, and it references the EPA

report *Carbon Reserve -The Potential of Restored Irish Peatlands for Carbon Uptake and Storage 2007-2013* in terms of how peatland management might be used to enhance carbon sequestration and reduce emissions. It provides advice in relation to the management of non-designated peatlands to halt carbon loss and recommends restoration measures to stabilise eroding surfaces, re-establish peatland vegetation and encourage waterlogged conditions to enable peat formation.

4.1.4 Wind Energy Development Guidelines - Guidelines for PAs, 1996

The Guidelines, which were in place when the original applications for the Derrybrien windfarm were considered, identified the main areas of concerns as visual amenity, noise, electromagnetic interference and a range of environmental factors.

4.1.5 Wind Energy Development Guidelines - Guidelines for PAs, 2006

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

4.1.6 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.

4.1.7 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.

4.2 Regional Policy

4.2.1 Regional Spatial & Economic Strategy for the N & W Region, 2022

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

RPO 9.1: seeks to support the development of safe, secure and reliable electricity network and the transition towards a low carbon economy centred on energy efficiency and growth projects outlined and described in this strategy.

RPO 8.3: seeks to support the necessary integration of the transmission network requirements to allow linkages with renewable energy proposals at all levels to the electricity transmission grid in a sustainable and timely manner.

4.3 Other relevant policy documents include:

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

4.0 LOCAL POLICY

4.1 Current Local Planning Policy

County Galway Development Plan 2015-2021

Strategic Objectives:
Council strategic policies and objectives seek to ensure environmental protection, sustainable development and climate change adaptation.

Renewable energy & windfarms:
Council policy seeks to reduce greenhouse gas emissions, increase renewable energy generation and ensure security of supply. The site is located within an area that is Not Normally Permissible for windfarms. Policies and objectives contained in sections 7.2 to 7.5 and the Wind energy development standards (Appendix IV) set out council policy and standards for windfarm development which take account of environmental and amenity considerations. Section 8.0 sets out council policy in relation to climate change.

Objective ER4: seeks to support and facilitate the sustainable development and use of appropriate renewable energy resources and associated infrastructure within the County, including wind energy.

Objective ER 5: seeks to promote and facilitate wind farm developments in suitable locations, having regard to areas of the County designated for this purpose in the County Galway Wind Energy Strategy. The Planning Authority will assess any planning application proposals for wind energy production in accordance with the County Galway Wind Energy Strategy, the DoEHLG Guidelines for Planning Authorities on Wind Energy Development, 2006 (or any updated/superseded documents), having due regard to the Habitats Directive and to the detailed policies, objectives and Development Standards set out in the Wind Energy Strategy.

Objective ER 6: states that the policies, objectives, and development management guidelines/standards set out in the Wind Energy Strategy shall be deemed to be the policies, objectives and development management guidelines/standards for the purposes of the Galway County Development Plan 2015-2021.

The Wind Energy Strategy (2011) supports a plan led approach to wind energy development in County Galway and sets out Strategic Areas, Acceptable in Principle Areas, Areas Open for Consideration and Not Normally Permissible Areas. It Council policy to maximise wind energy development in the first three of these areas, on a case-by-case basis, subject to meeting specific requirements and guidance contained within the strategy. An aim of the strategy is to meet a minimum target of 500 MW of wind energy in County Galway and to generate the equivalent of over 70% of its electricity needs from wind energy. The site is located within a ***Not Normally Permissible Area*** which are "generally not suitable for wind farm development due to their overall sensitivity and constraints arising from landscape, ecological, recreational, settlement, infrastructural and/or cultural and built heritage resources, based on strategic level assessment. Wind farm developments in these areas will be discouraged, unless project level HAD and EIA can demonstrate to the satisfaction of the PA that environmental; and other impacts can be successfully avoided, minimised and/or mitigated."

Landscape & protected views:

The site is not located within a designated sensitive landscape or scenic amenity area although there are several such features in wider area. The site is located within Landscape Character Area 6 (Slieve Aughty Mountains) which has Medium Landscape Value and Sensitivity Ratings. There is a designated Focal Point/View at Lough Rea which extends S to the Slieve Aughty Mountains. Policies and Objectives contained in sections 9.10 to 9.13 seek to ensure the protection of sensitive landscapes, scenic amenity areas and focal points/views.

Natural heritage:

The site is located within the Slieve Aughty Mountains SPA and there are many SACs, SPAs and NHAs in the wider area, including a Ramsar site at Inner Galway Bay. Policies and Objectives contained in sections 9.8 & 9.9 seek to ensure the protection and/or enhancement of designated sites and biodiversity.

Cultural heritage:

Several Recorded Monuments, sites of archaeological interest, protected structures & NIAH features in the surrounding area. Policies and objectives contained in sections 9.4 to 9.7 seek to ensure their continued protection and/or enhancement.

Forestry:

The Slieve Aughty Mountains are characterised by extensive commercial forestry plantations and policies and objectives contained in sections 11.8 and 11.9 deal with the management of these areas.

4.2 Previous Local Planning & Energy Policy

4.2.1 County Galway Development Plan 1997-2003

Rural Areas Obj.13: sought to require that windfarm development comply with the DoE Guidelines (1996), particularly in policy statement at ss.3.2 and the main considerations set out in S.4 (Visual Amenity, Noise, Electromagnetic Interference and other environmental factors).

High Scenic Amenity Areas: Slieve Aughty Mountains designated as a Category 2 HSAA with the objective "To restrict development which would detract from the amenity value of the zoned areas where such development would be visually inappropriate and out of character, or could not be satisfactorily blended into its surroundings"

4.2.2 County Galway Development Plan 2003-2009

***Landscape Character Assessment 2003*:** formed the basis of Council's landscape, visual amenity and energy policy, it identified zones of varying suitability for windfarms (Strategic, Areas for Consideration & No-Go Areas), it characterised the Slieve Aughty Mountains LCA as being capable of accommodating developments such as windfarms and associated works and classified it as a Strategic Zone.

4.2.3 County Galway Development Plan 2009-2015

Landscape Character Assessment 2003: continued to form the basis for wind energy policy until 2011 when the Wind Energy Strategy was adopted (by Variation).

Wind Energy Strategy 2011: sought to address issues related to security of energy supply, emission targets and biodiversity in addition to wind resource and landscape concerns. It removed the Slieve Aughty Mountains from the Strategic Zone and reclassified it as a Not Normally Permissible Area, but with some sections Open for Consideration. Not Normally Permissible Areas are not considered suitable for windfarm development unless project level EIA & AA conclude no adverse impacts/effects. (Note: Slieve Aughty Mountains was designated an SPA in 2007).

4.2.4 County Galway Development Plan 2015-2021

Wind Energy Strategy: included as Appendix IV (refer to section 4.4.1 above).

4.3 Natural Heritage Designations

European sites - SACs:

SAC site name	Site code	Proposal date	Statutory Instrument
Cahermore Turlough	002294	02/03	17/05/16
Ballinduff Turlough	002295	02/03	12/10/16
Carrowbaun, Newhall & Ballylee Turloughs	002293	12/03	03/06/16
Lough Cutra	000299	03/03	12/10/17
Kiltartan Cave (Coole)	000286	01/02	17/05/16
Ardrahan Grassland	002244	01/02	22/10/19
Lough Derg NE Shore	002241	01/02	06/02/18
Caherglassaun Turlough	000238	01/02	None
Galway Bay Complex	000268	08/99	None
Gortacarnaun Wood	002180	09/99	17/05/16
Drummin Wood	002181	12/99	17/05/16
Coole-Garryland Complex	000252	05/98	None
Lough Rea	000304	05/98	12/10/17
Pollogona Bog	002126	08/97	29/11/19
Pollnaknockaun Wood Nature Reserve	000319	08/97	17/05/16
Derrycrag Wood Nature Reserve	000261	08/97	17/05/16

Rosturra Wood	001313	08/97	17/05
Loughatoric South Bog	000308	11/97	20/09/19
Sonnagh Bog SAC	001913	11/97	17/12/19
Cloonmoylan Bog	000248	11/97	None
Glendree Bog	001912	11/97	None
Barroughter Bog	000231	11/97	None
Peterswell Turlough	000318	11/97	None
Lough Coy	002117	11/97	None

European sites - SPAs:

SPA site name	Site code	Proposal date	Statutory Instrument
Slieve Aughty Mountains	004168	03/07	21/03/12
Lough Rea	004134	02/07	19/02/10
Coole-Garryland	004107	10/96	26/05/10
Lough Cutra	004056	11/95	26/05/10
Lough Derg (Shannon)	004058	11/95	02/07/19
Inner Galway Bay	004031	11/94	16/10/19

Natural Heritage Areas:

Slieve Aughty Bog (20/09/2005)	Maghera Mountain Bogs
Lough Cultra pNHA	Glendree Bog
Lough Atorick District Bogs	Lough Graney
Derryoober Bog	Lough O'Grady
Lough Rea	Pollnaknockaun Wood Nature Reserve
Soonagh Bog	Rosturra Wood
Peterswell Turlough	Cloomoylan Bog
Kiltartan Cave	Derrycrag Wood Nature Reserve
Coole-Garryland	Lough Derg
Pollduagh Cave, Gort	Loughatorick Bog
Cahermurphy Wood	Cloonamirran Wood

Ramsar sites: Inner Galway Bay

5.0 SUBMISSIONS

5.1 Galway County Council

The response of the Planning Authority described the site location, development and peat slide event, summarised the legislative and policy context, noted the contents of the rEIAR and rNIS, stated that it had no objections and recommended conditions.

The main points are summarised below:

- No objection to a grant of substitute consent.
- Acknowledge that the generation & distribution of electricity to the region is of paramount importance, in line with EU & national energy policy, which has been reflected in the CDP.
- Acknowledge the environmental damage caused by the peat slide and the subsequent works to manage & rectify the damage.
- Acknowledge efforts made to comply with national & regional renewable energy policies & objectives, and the strategic aims of the CDP.

The recommended conditions are summarised below:

1. Development should accord with submitted plans & particulars including all mitigation & monitoring measures; permission should be for 20 years.
2. No storage of oils/fuels or vehicle maintenance within 100m of watercourses; roadside drains should not intercept large volumes of water from ground above.
3. Turbine noise should not exceed 5dB(A) above background noise levels, or 43dB(A) L90, 10m; submit noise compliance monitoring programme.
4. Shadow flicker shall not exceed 30hrs/year or 30 mins/day.
5. No interference with TV & radio signals.
6. On decommissioning, all masts, turbines, and foundations shall be dismantled & removed, and all roads should be reinstated.
7. Regular bird & bat monitoring should be undertaken.
8. Financial contribution for the reinstatement of damaged public roads.
9. Bond to ensure reinstatement of the site.
10. Submit details for the treatment of hydrology & hydrogeology.

11. Submit a full Environmental Management Plan, with specific reference to the geotechnical aspects of the decommissioning phase.

5.2 Prescribed Bodies

Inland Fisheries Ireland:

The environmental impact that the development of the windfarm had on the Owendalulleagh River/Lough Cutra catchment is summarised below.

- Owendalulleagh River holds good stocks of wild brown trout & is an important spawning river for Lough Cutra, and the peat slide is likely to have had a long-term effect on the regeneration of the trout population.
- Investigations after the peat slide indicated that c.50,000 fish mortalities occurred in a 18km stretch of this river down to Lough Cutra (Brown trout, Brook lamprey, Gudgeon, European eel & Stone loach).
- Downstream water samples of the river at Flaggy Bridge & where it enters Lough Cultra showed suspended solids results to be 436- & 110-times above background levels.
- Peat slide released c.6,000m3 of peat/silt into the river which affected downstream fish populations & fisheries habitats (clogging gills & feeding; siltation & scouring spawning & substrates; smothering of redds; habitat alteration, invertebrate prey mortalities & excessive plant growth; and release of orthophosphates in the river & lake).
- EPA records from 2000 state that the Owendalulleagh River was of high quality along its length (Q4-5); and biological surveys after the peat slide state that the upper 5km was effectively wiped out.
- The 2013-18 WFD catchment status for the Owendalulleagh ranged from High & Good (Upper) to Moderate (close to Lough Cultra).
- The current WFD Risk Cycle 3 indicates that the upper stretch has deteriorated and is at Risk.
- Imperative that high quality waterbodies are protected & moderate watercourses are restored to at least good status.

An Taisce:

As a result of the attached Supreme Court Judgement of 1st July 2020, the substitute consent process has been struck down. Request the Board to address this.

Transport Infrastructure Ireland:

No objection. Request Board to have regard to Ch.3 of DoECLG Spatial Planning & National Roads Guidelines.

Commission for Railway Regulation:

No objection, subject to appropriate consultation in relation to works close to railways, trespass risks & road rail interfaces.

5.3 Observers

A total of 7 x submissions were received form 2 x interest groups and 5 x individual members of the public, and their concerns are summarised below.

Friends of Derrybrien Environment (Martin Collins):

- Note CJEU Case C-215/06 and subsequent CJEU and Supreme Court rulings in relation to Derrybrien windfarm.
- As a result of the Supreme Court Judgement of 1st July 2020, the substitute consent process has been struck down, invalid application.
- Note that the applicant has also submitted information related to an application for Leave to Apply for SC under S.177(c).
- Inadequate consultations with local community.
- Inadequate public participation in EIA process & difficult for lay person to meaningfully engage with the rEIAR documents.
- Query the conclusion of no significant adverse impacts for all chapters.
- NPWS 2015 Hen harrier survey of the Slieve Aughty Mountains found that there had been a 50% decline in the HH population since 2005.
- Note recorded decline in Derrybrien population in 2016 Census.
- No details provided of Waste Licence referred to in Public Notice.

- Query serving a second Notice under S.177(b) by the Council where a previous notice under the same section was withdrawn.
- Inaccurate Public Notice in relation to Item 3 “ancillary works” which include “Tree Felling” when c.263ha of deforestation occurred; Council failed to mention deforestation in the S.177B Notice & ABP satisfied with content of Public Notice; application is therefore invalid.
- Extensive deforestation occurred under a Forestry Service Felling Licence in the absence of planning permission & EIA.
- Previous permissions did not cover or extend fully to the deforestation as accepted by the Supreme Court, Appeal No. 51/2009, Point 68 (appeal subsequently dismissed).
- Permission cannot be granted for this unauthorised development under S.177B (which relates to developments previously granted permission which would have required an EIA/AA but none was undertaken), as no previous permission was granted for deforestation.
- Note long history of state involvement in the evolution of this case since c.1997 and original assessment by GCC planning department.
- Environmental impacts require proper & independent assessment.
- Query rNIS conclusion of no significant effects on the SPA despite the deforestation, peat slide, fish kills and decline in HH population.
- Habitats Directive identifies habitat loss & degradation as the most serious threats to the conservation of wild birds; no known incidences of persecution or poisoning; EU initiated HH Project launched in 2017.
- NPWS informed GCC & ABP that the EIS (97/3470) was deficient in relation to flora, fauna, soil & water, and highlighted impacts on HH & Merlin (protected under the Wildlife Acts & EU Directives).
- Condition of PL07.122803 required HH surveys for research purposes which indicates an experimental approach that has gone wrong; no survey data submitted to GCC prior to construction commencing.
- Slieve Aughty SPA was designated in 2007 for HH & Merlin, research indicates that HH population has declined since then for a myriad of reasons including windfarms, request details of carcass surveys.

- Query on what basis was permission granted in 1998 & 2001 if 1998 has now been identified for the baseline environment, when the upland blanket bog was extensively forested with huge water storage capacity.
- Non-compliance with 1997 CDP which identified Slieve Aughty Mountains as a Category 2 High Scenic Amenity Area and sought to protect it from inappropriate development; and windfarms no longer normally permissible in this area.
- Note contents of Windfarms & Blanket Peat 2005 report by Lindsay & Bragg in relation to mandatory EIA, "salami slicing" & project splitting with respect to the 3 separate applications for the windfarm, and the quality of the EIA, and in particular hydrology & peat stability.
- Query the use of a SC permission to justify future re-powering.
- Query the quality of rEIAR drainage & flood risk assessments, conclusion that the impacts of draining 1200ac of bog would be insignificant & the volume of run-off imperceptible at the Gort Lowlands; the CO2 balance sheet; and the habitat & botanical impacts.
- Query lack of assessment of the impacts of forest plantations & drainage networks on the quality & integrity of blanket peat, cumulative impacts, the rationale for floating roads and the construction methods.
- Inadequate consideration and explanation of Alternatives & query the 2040 decommissioning date, given that the land lease ends in 2028; and given the scale of the impacts it should be decommissioned now.
- The barrages constructed after the peat slide were largely ineffective.
- Query the realistic benefits and wide extent of the Community Benefit Fund, and the funding structure should have been similar to RESS1.
- Summary provided of CJEU judgements & other court cases.
- Query CO2 emissions balance sheet calculations and submit that the positive impacts on carbon storage have been very low.
- Non-compliance with conditions attached to previous planning permissions (including compliance conditions).
- Main quarry in operation was not identified through planning process.
- Need to protect integrity of EU & Irish environmental protection laws.

South Galway Flood Relief Committee (David Murray):

Flood Risk Assessment:

- rEIAR Hydrology & Hydrogeology chapter & Flood Risk Assessment Report contain inaccurate & incomplete information.
- Desk top study referenced OPW historic flood data which contains a disclaimer that the information might not be accurate.
- The nearest downstream area affected by severe flooding is Dereen & Beagh (10km & 12km) and not Gort (20km); flooding in these areas was brought to the ESB's attention in 2017 (letter & report attached), but SGFRC was not invited to engage in the rEIAR process.
- Incomplete data on which to base flood impact conclusions, especially given the aquatic connection to many SACs, sometimes via farmyards.

Cumulative effects of deforestation:

- Impact of tree felling associated with the windfarm project was considered but not in-combination with other felling planned or carried in the area during construction & following commissioning.
- Non-compliance with NPWS "AA of Plans & Projects in Ireland, Guidance for PAs" in relation to in-combination effects.
- Extensive afforestation & deforestation occurred in vicinity of windfarm & Owendalulleagh Catchment before & after windfarm construction.
- The rEIAR should consider the Catchment Forestry operations that have progressed alongside the windfarm development.
- There may be hydrological changes due to site preparation & clear-felling which can lead to substantial increases in hydraulic flow (c.15%) that can also give rise to stream surge resulting in physical impacts in receiving streams leading to bank erosion & stream widening, and open forestry drains can continue to have a negative impact for up to 10 years; in-combination impacts not assessed.
- rEIAR states that the link between forests & river flooding remains conflicted, and in the absence of adequate information to assess impact, the worse-case scenario should be applied.

- rEIAR does not address the correlation between forest cover, increased run-off and the age of the forest stand, the 10% run-off increase rate contradicts the 15% reference in the WFD.
- rEIAR estimates that the project has resulted in a 1.8% increase in the peak mean annual flow rates in the Owendalulleagh Catchment but disagree with the “conservative estimate & analysis”.
- Disagree with rEIAR conclusion that impacts of felling on flow regimes would have been slight to moderate & temporary to short term during the construction phase, given that the analysis only relates to felling in the windfarm site and not the wider area within a restricted timeframe, and the cumulative incremental impacts were not considered.
- At peak rainfall then having an additional c.10% run-off could be enough to flood Derreen, Beagh & Gort (former missing from the FRA).
- Appropriate site-specific mitigations measures are therefore required to negate the impact of increased flow (including stilling ponds to reduce flow velocity of discharge water & provide storm water attenuation).
- Inaccurate & understated description of scale & extent of on-site drainage network, although there are no records of flooding issues since commissioning, the combined drainage network would have had a significant impact on the site, given that this is a high run-off site.
- Combined windfarm works have resulted in increased levels of exposed soil and siltation in the Slieve Aughty Catchments with resultant impacts on the Coole-Garryland Complex SAC, despite the NIS conclusion of not significant effects, and a proper assessment of the effects of silting on underground networks is required.
- Inadequate remedial mitigation measures in rNIS.
- Project has increased flood run-off rate over former forestry & turbary uses from a high to very high run-off, which could along with other cumulative effects be responsible for a significant impact and flooding at Dereen, Bragh & Gort, but no mitigation measures are proposed.
- Disagree with rNIS conclusion of no significant impacts related to hydrological & hydrogeological regime/downstream impacts given the:

- Incomplete historical data,
- Lack of consideration of cumulative impacts including historic & future forestry operations,
- The incorrect assumption that an increase in run-off will have a slight to moderate impact, and
- The lack of best practice mitigation measures.

Other matters:

- Inadequate public consultation, participation & engagement.
- Quality of EIA reduced by lack of meaningful public participation.
- Contradiction of EU Legislation
- Non-compliance with CJEU & Supreme Court judgements.

Individual submissions:

Submissions were received form the following:

- Kevin Deering & Peter Crossan
- Michael Gallagher
- Michael Mahony
- Martin Collins
- VP Shields Solicitors

Kevin Deering & Peter Crossan, Michael Gallagher & Michael Mahony:

The collective concerns of are summarised below:

- As a result of the attached Supreme Court Judgement of 1st July 2020, the substitute consent process has been struck down.
- Invalid application.
- Inadequate public participation in the EIA process.

Martin Collins: This submission raised no new issues over and above those already raised by Mr. Collins on behalf of Friends of Derrybrien Environment.

VP Shields Solicitors:

- Seeks clarification as to validity of SC application following Supreme judgements in respect of S.177, and whether or not ABP intends to proceed with assessing the application.
- The applicant is a subsidiary of Hibernian Wind Power, both are directly associated with the ESB, which is an emanation of the state for the purposes of European Regulations.
- Query serving a second Notice under S.177(b) by the Council where a previous notice under the same section was withdrawn, with respect to the conditions attaching to such a withdrawal, request full disclosure and the application may therefore be invalid.
- Note that the applicant has submitted information related to an application for Leave to Apply for SC under S.177(c), if such an application exists then it should not proceed considering the Supreme Court Judgement.
- Subsequent correspondence from VP Shields Solicitors requested a response from the Board in relation to the above issues.

(***Note:*** The Board responded by stating that the application has been accepted as valid & will be processed in the normal manner, and that concerns about the Notice are a matter for the Council & not the Board.)

5.4 Applicant's response to submissions

The applicant's response to the concerns raised are summarised below.

General:

- Some submissions contain commentary in relation to the original EIAs although this is a new application under S.177B & is accompanied by an rEIAR, and such comments are immaterial.

Galway Co. Co.:

- Request amendments to Condition no.6 in relation to decommissioning to take account of rEIAR timeframes (24 months v 3 months) & decision to retain sub-surface structures in the interest of peat stability.

Inland Fisheries Ireland:

- IFI reference "the current WFD Risk Cycle 3 that indicates that the upper stretch (Owendalulleagh_010) has deteriorated and is at risk", however this site was last monitored by the EPA in 1990 when it was Q4-5 High Status and is located upstream of the windfarm.
- Every EPA river quality survey since 2006 (incl. 2018 & 2019) on the main channel of the Owendalulleagh downstream of the windfarm have returned High Status results (Q4-5/Q5), except at the most downstream site close to Lough Cutra (Q4 in 2006) but Q5 since then.

Kevin Deering & Peter Crossan, Michael Gallagher & Michael Mahony:

- Extensive public consultations were undertaken (para. 2.4 of Planning Report & S.1.9 of rEIAR).
- Supreme Court decision concerned the validity of S.177(2)(c) & S.177D(1)(a) in relation to the entitlement of the public to participate in an application for leave to apply for SC, and not S.177E & S177B in relation to an application for SC as a response to a Notice served.

An Taisce:

- As above in relation to legal standing of the SC process.

Martin Collins:

- As above in relation to legal standing of the SC process.
- As above in relation to public consultations.
- Application complies with all legislative requirements & covers the entire life cycle of the project (construction to decommissioning).
- Assessments (rEIAR & rNIS) are comprehensive, reflect best practice guidance & scientific evidence to support conclusions.
- S.5.2.1.1 of rNIS deals with decline in HH population in the Slieve Aughty SPA & the influencing factors and cites the 2015 HH survey.
- S.5.5.1.1 o rNIS describes how the alteration of habitat on site from forestry to open upland habitat has had a positive impact on HH.
- Site notices fully comply with all requirements, broad range of activities in Item 3 are correctly described as "ancillary" as they facilitate the primary activity (construct a windfarm connected to the national grid).
- Appropriate licences will be put in place as per the Waste Legislation.

- Commentary on historic assessments & their adequacy is immaterial to this SC process which are based on the CJEU Judgements.
- The 2009 Supreme Court appeal ([2015] IESC 77) was dismissed following a High Court decision ([2005] IEHC485) which concluded that it was clear that the windfarm project envisaged the removal of forestry and the change of use of forestry lands to a windfarm use.
- Commentary on historic planning assessments is immaterial to this SC process and the rEIAR & rNIS now before the Board.
- The surveys using dogs as part of the Bat fatality survey, are ongoing and the details to date are in S.7.2.6.3.2 of the rEIAR.
- Confirm that the baseline year used is 1998 and the rEIAR provides a robust description of the prevailing conditions at that time.
- References to the historic CDPs are noted however the Board will determine the application in the context of the current CDP.
- S.2.8.3 of rEIAR states that the windfarm has an average annual capacity of factor of c.25% (of the theoretical maximum output) reflecting the wind resource & location), which is typical of similar developments & not an indication of deficiency.
- IWEA note that windfarms generate c.31% of such capacity annually, compared with c.50% for conventional power stations; and SEAI note that it fluctuated between 24% & 30% between 2005 & 2018.
- Consideration of Alternatives prepared in compliance with all legislative requirements & guidelines and note that repowering is an alternative considered for all windfarms, and a new application would be required.
- No end date for existing permissions & 2140 has been chosen as the operational lifespan of a windfarm is c.35 years; S.3.4.1 of the rEIAR deals with the “do-nothing” option (cease operation & decommission).
- References to historic FRAs are immaterial, the Observer has not referred to the drainage assessments set out in Ch.11 & TAs.
- S.2.6.7, 2.7.3 & 2.10.1 of the rEIAR deals with the barrages (function, construction & decommissioning).
- S. 4.3.1.5 of the rEIAR deals with the Community Benefit Fund which is independently managed & available to fund projects in the wider area;

the application of RESS 1 (and the mandatory CBF) is not relevant as Derrybrien was not listed as a successful RESS 1 Project.

- No further comment in relation to references to historic judgements which predate the S.177B Notices.
- The CO2 balance is dealt with in Ch.12 of the rEIAR, the carbon cost of the project (including windfarm construction, drainage, tree felling & replanting & the peat slide event) is balanced against the benefits accrued from fossil fuel displacement; and nett positive contribution.

Friends of the Derrybrien Environment (Martin Collins):

- As above in relation to response to Martin Collins.

South Galway Flood Relief Committee (David Murray):

- Desk top review of flood.ie data was “primarily” used in terms of meaning “in the first place” & not “for the most part”, it was the starting point for the review of historic flood data & the history of downstream flooding in the Gort Lowlands is dealt with in rEIAR Appendix 11B.
- The c.10-12km distance referred to by the Observer is a straight-line distance as opposed the c.20km winding path of the river, which includes the areas noted by the Observer.
- As above in relation to public consultations.
- The assessment of hydrology & hydrogeology set out in rEIAR S.11.1.5 was carried out in accordance with prescribed methodology & utilised specific data sets, which was considered adequate to assess.
- Cumulative effects of forestry felling have been considered in the rEIAR & FRA (not associated directly with the wind farm) in S.11.4.1 &11.4.2.2; the effects of felling in adjacent plantations during the construction stage were deemed to be slight, short-term & local, and were not further considered in the FRA.
- Approach outlined in rEIAR Appendix 11A, where the methodology is clearly outlined, adheres to the precautionary principle.
- The rEIAR Ch. 11 clearly concludes that the effects in relation to flood risk downstream of the site is Not Significant (Tables 11-12), and mitigation measures are only required where necessary to address a significant adverse effect on the environment.

- A recent TCD/GSI study of “Land Changes, flood alleviation options & the associated impacts on the Gort Lowland Karst Catchment in Co. Galway” concludes the following:
    - …whist the land use change in the Slieve Aughty Mountains may have change peak flood hydrographs in the mountain rivers, this impact does not change the way flooding occurs in the turloughs across the Gort Lowlands. This is mainly due to the extremely large volumes of cumulative discharge involved during the 1% AEP flood event and the limiting drainage rate of the bedrock karst system.
- The study did not recommend implementing mitigation measures in the Slieve Aughty Mountains and that:
    - is considered that the (windfarm) development area relative to the size of the catchment is insignificant (<2.5%), given the lack of data it is not prudent to attempt to expressly model impacts within this assessment as results would likely be inconclusive.
- This study collaborates the rEIAR conclusions.
- Drain size details are set out in rEIAR Figure 11.14 which confirms that the windfarm drains were typically smaller than those pre-existing channels draining the turbary land to the E.
- The rNIS S. 4.5.14 to 4.5.17 assesses the effects of siltation on the Coole-Garryland SAC & other related downstream Turlough SACs.
- As above in relation to legal standing of the SC process.
- OH is not necessary given the extensive information on file & the nature of the submissions.

6.0 PLANNING ASSESSMENT

The Derrybrien Windfarm development comprises the previously permitted Phases 1, 2 and 3 and subsequent amendments (as summarised in section 1.4.1 above), ancillary works (including tree felling, excavations, road construction & drainage), remedial works associated with the peat slide event (including barrages & peat repositories), the grid connection and substations, all associated site works, and ex-situ replacement forestry (in neighbouring counties). This report will address the construction (before & after the peat slide event), operational (past, present & future) and decommissioning phases.

The main planning issues arising in this case are:

1. Compliance with climate change & renewable energy policy
2. Compliance with planning policy
3. Carbon sequestration
4. Article 12 of Habitats Directive
5. Other issues

- Section 7.0 contains a remedial Environmental Impact Assessment.
- Section 8.0 contains a remedial Appropriate Assessment.

6.1 Compliance with Climate Change and energy policy

The windfarm project would be compatible with previous and current European and National climate change and renewable energy policies as summarised in section 3.0 above. It would contribute to the achievement of current European and National renewable energy targets, and in particular the objectives of the Climate Action Plan (2019) which seek to realise a 30% reduction in greenhouse gas emissions and increase reliance on renewables from 30% to 70% (12GW) by 2030, of which 8.2GW could be met by on-shore windfarms. Section 11 of this Plan also identifies a range of measures to deliver targets for a reduction in greenhouse gas emissions including the better management of peatlands. Compliance with these measures will be addressed in more detail in section 6.4 below in relation to carbon sequestration,

whist other practical issues related to peatland management (including soils, hydrology, biodiversity & peat stability) will be addressed in the relevant sections of the remedial Environmental Impact Assessment chapter of this report.

6.2 Compliance with planning policy

6.2.1 National planning policy

The windfarm project would be compatible with previous and current national planning policy as currently 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 1996 Wind Energy Development Guidelines advised that the main areas of concerns include visual amenity, noise, electromagnetic interference and the environment. The 2006 Wind Energy Development Guidelines (and 2019 Draft amendments) advise that a reasonable balance must be achieved between meeting national policy on renewable energy and the proper planning and sustainable development of an area. The Guidelines also state that projects should not adversely affect any European sites, have an adverse impact on birds, give rise peat instability or adversely affect drainage patterns, cultural heritage, sensitive landscapes, the local road network, or residential amenity. These practical issues will be addressed in more detail in the relevant sections of the remedial Environmental Impact Assessment and remedial Appropriate Assessment chapters of this report.

6.2.2 Regional planning policy

The windfarm project would be compatible with previous and current regional planning policy as currently set out in the Regional Spatial & Economic Strategy for the Northern and Western Region, 2020-2032 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.

6.2.3 Local planning policy

The original planning applications for Derrybrien Windfarm (Phases 1, 2 & 3) and the Phase 3 amendments were assessed with regard to the ***County Galway Development Plan, 1997-2003***. Rural Areas Obj.13 sought compliance with the Wind Energy Planning Guidelines, 1996 in relation to visual amenity, noise and other environmental factors, and the Slieve Aughty Mountains were designated as a Category 2 High Scenic Amenity Area which sought to restrict visually inappropriate development. The windfarm project was largely compatible with the general renewable energy and policies and objectives of the Galway County Development Plan 1997-2003, which essentially required compliance with the 1996 Guidelines.

The various time extensions to Phases 1 and 2 were agreed during the life cycle of the ***County Galway Development Plan 2003-2009*** which also incorporated the Landscape Character Assessment, 2003. The LCA formed the basis of the Council's energy policy in the County Galway Development Plan 2009-2015 which classified the Slieve Aughty Mountains as a Strategic Zone for windfarms. However, the Wind Energy Strategy, 2011 (which was incorporated into the Development Plan by way of a Variation) reclassified the Slieve Aughty Mountains as a Not Normally Permissible Area for windfarms, but with some sections Open for Consideration. It is noted that none of these evolving designations provided the policy context for the assessment of any of the Derrybrien windfarm applications.

The windfarm project would be generally compatible with the climate change and renewable energy policies and objectives of the current ***Galway County Development Plan 2015 to 2021***. In particular, it would comply with Objective ER 5 which requires compliance with the 2006 Wind Energy Development Guideline (or any updated/superseded documents), and Objective ER4 which seeks to support and facilitate the sustainable development and use of appropriate renewable energy resources and associated infrastructure within the County, including wind energy. However, it is noted that the windfarm is now located within an area that is designated as Not Normally Permissible for windfarms in the Wind Energy Strategy "due to their overall sensitivity and constraints……. unless project level HAD and EIA can demonstrate to the satisfaction of the PA that environmental and other impacts can be successfully avoided, minimised and/or mitigated." The Slieve

Aughty Mountains are no longer covered by any sensitive landscape or scenic amenity designations. However, the extensive upland area was designated as an SPA in 2007, several years after the windfarm project was permitted and constructed, and several areas were designated as an NHA in 2005.

Having regard to the presence of an operational windfarm on the site and notwithstanding the various policy changes that have evolved over the past c.25 years, as outlined above, the Derrybrien windfarm project continues to be generally compatible with previous and current strategic renewable energy policies as set out in the Galway County Development Plans in relation to reducing dependency on fossil fuels and promoting low carbon alternatives. The Plans also contain a range of policies and objectives which seek to protect the environment, European sites, biodiversity, scenic landscapes, views, residential amenity and cultural heritage. These issues will be addressed in the relevant remedial Environmental Impact Assessment sections and remedial Appropriate Assessment chapters of this report.

6.3 Carbon sequestration

The windfarm project would be located within a peatland environment where a balance needs to be struck between the loss of the carbon storage capacity of the bog and the generation of renewable energy from non-carbon sources. As previously stated, the Climate Action Plan, 2019 seeks to realise a 30% reduction in greenhouse gas emissions and increase reliance on renewables from 30% to 70% (12GW) by 2030, of which an estimated 8.2GW could be met by on-shore windfarms. Section 11 of the Plan identifies a range of measures to deliver targets for a reduction in greenhouse gas emissions, including the better management of peatlands which cover 21% of our land area and represent 64% of our total soil organic carbon stock. The Plan sets out several measures to manage this carbon sink, including compliance with measures outlined in the National Peatlands Strategy (2015) and the National Raised Bog SAC Management Plan (2017-2022) in relation to the management of peatlands (summarised in section 4.0 above). The level of project compliance with current Climate Action Plan measures is assessed below.

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

- This measure does not apply as the habitats within the site mainly comprise blanket bog (and not Raised bogs) and the site is not covered by any SAC or NHA designations.

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

This document sets out a national strategy for the sustainable management of peatlands and section 5.3 deals with Peatlands and Climate Change. It describes the role of natural undrained peatlands as carbon stores and it references the EPA report *Carbon Reserve -The Potential of Restored Irish Peatlands for Carbon Uptake and Storage* in terms of how peatland management might be used to enhance carbon sequestration and reduce emissions. It provides advice in relation to the management of non-designated peatlands to halt carbon loss and recommends restoration measures to stabilise eroding surfaces, re-establish peatland vegetation and encourage waterlogged conditions to enable peat formation. As previously stated, the site and environs mainly comprise blanket bog habitats which have been historically disturbed by extensive forestry works and turf cutting.

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

Discussion:

As previously stated, the windfarm project would contribute to the achievement of the renewable energy target for on-shore wind contained in the Climate Action Plan 2019. The existing operational windfarm which comprises 70 x turbines has made a significant non-carbon-based contribution to the national grid since its construction in the early 2000s, notwithstanding the 2003 peat slide event.

According to the carbon balance information provided in the rEIAR (S.12.4.5), the total carbon cost for the windfarm project (including turbine manufacture & construction, deforestation, excavations, drainage & peat slide event) was c.277,688 tonnes (tCO2eq). The turbines have contributed c.1,897,000MWh to the national grid over the past c.14 years (2006 to 2020) and they will contribute a further c.121,500MWh per year or c.2,430,000MWh over the next c.20 years until 2040 (depending on wind conditions). This would result in an estimated saving of c.4,327,000 million tonnes of carbon over the project's c.35-year lifespan. Based on the application of various UK carbon balance calculator tools, the carbon payback period for the windfarm (including all the aforementioned elements) would range from c.2 to 7.3 years. However, based on the anticipated displacement of gas generated electricity in Ireland, the carbon payback period is estimated as c.4.7 years under the worst-case scenario.

Notwithstanding any difficulties associated with calculating the loss of stored carbon as a result of the windfarm works and peat slide event (including the varying ecological & hydrological condition of the peatland), on balance, I am satisfied that significantly more carbon will be saved than lost over the projects lifespan. Any spatial loss of the carbon storage capacity because of the construction of the turbines, windfarm infrastructure and the peat slide event would be minuscule when compared to the previous estimates and anticipated carbon offset against the operational windfarm.

Several of the Observers (including the Martin Collins & The Friends of Derrybrien Environment) raised concerns that the windfarm is operating at an average of c.25% of its theoretical generating capacity. The applicant has confirmed in the response submission that this figure is just marginally below the expected average for wind energy developments (c.31%), compared to conventional fossil fuel generators (c.50%), which is consistent with IWEA and SEAI recorded data.

Conclusion:

Having regard to the forgoing, I am satisfied that there would be significant savings over the entire operational lifespan of the windfarm project (c.2006 to 2040) when balanced against the loss of stored carbon because of the past tree felling,

excavation works and the peat slide event, in line with current national policy and guidelines.

6.4 Article 12 of EU Habitats Directive Report

Elements of the ECJ Judgement (2008) and ECJ Opinion (2019) related to Article 12 of the Habitats Directive in relation to the strict protection afforded to species listed in Annex IV and the implementation of measures to achieve this protection. Article 12(1)(b) refers to the deliberate disturbance to species and Article 12(4) refers to the incidental killing of species. The report identified several Annex IV species that had the potential to be disturbed (bats & otter) or incidentally killed (bats) by the development. It identified the Zone of Influence with respect to scale and location of the development, species sensitivities and potential impact sources and pathways. The report was informed by several surveys (including bat mortality searches, and water quality & prey abundance surveys for otter). It listed the European sites designated for each species and examined the survey data for the various phases. The species vulnerability and impact assessments concluded that the windfarm will not result in deliberate disturbance to, or incidental killing of otter. It concluded that whilst there was evidence of incidental killing of individual bats, there was no evidence of population level impacts, and fatality monitoring was recommended over a 3-year period. I concur with the report conclusions and agree that on-going monitoring should continue.

6.5 Other planning issues

Residential amenity: The windfarm project does 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 have been some past disturbance during the construction phase and there could be some disturbance during the future decommissioning phase in relation to works and traffic movements. There was and is minor potential for disturbance during the operational phase in relation to noise, shadow flicker and visual intrusion. However, I am satisfied that any impacts would not have been adverse. Refer to the rEIA for a more detailed assessment of impacts on population and human health, landscape, traffic, and air and climate.

Visual amenity: Having regard to the scale and location of the windfarm project in a remote upland rural area and the height of the turbines, the windfarm has, and would have had the potential to impact the visual amenities of the area in relation to landscape character, protected views, and scenic routes. However, I am satisfied that any impacts would not have been adverse. Refer to rEIA section 7.4 for a more detailed assessment of impacts on the landscape.

Movement & access: The windfarm project had and would have the potential to impact on the national, regional and local road network during the past construction and future decommissioning phases mainly in relation to the removal and delivery of the windfarm components, the delivery of construction materials and worker vehicles. However, I am satisfied that any impacts would not have been adverse. Refer to rEIA section 7.5 for a more detailed assessment of impacts on the road network.

Flood risk: The windfarm project had and would have the potential to affect peat hydrology and surface water flow patterns in the surrounding area during the construction, peat slide event, operational and future decommissioning phases. However, I am satisfied that any impacts would not have been adverse. Refer to rEIA section 7.8 for a more detailed assessment of impacts on the water regime.

Environmental services: The previous and current sanitary arrangements are considered acceptable.

Grid connection: The applicant has submitted sufficient information with the planning application, rEIAR and rNIS to enable the Board to undertake a cumulative impact assessment of any impacts on the environment, and likely significant effects on European sites, of the overall windfarm in-combination with the grid connection.

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

Community benefit: The management of the fund should continue to benefit the communities in the surrounding area.

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

Legal issues: The legal concerns raised by the Observers in relation this application for Substitute Consent are noted. However, the application has been made under Section 177E of the Planning and Development Act, 2000 (as amended) in respect of a Notice served on the applicant by Galway County Council under Section 177B, and not Section 177C in respect of Leave to Apply for Substitute Consent.

Financial contributions and bonds: The standard conditions should be attached in relation to any repairs required along the public road network after the decommissioning phase, and to ensure that the site is properly reinstated, as requested by Galway County Council.

7.0 REMEDIAL ENVIRONMENTAL IMPACT ASSESSMENT

7.1 Introduction

The Derrybrien Windfarm project comprises an existing 70 x turbine windfarm with a generating capacity of c.60MW. The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report.

7.2 Compliance with legislative requirements

The application for substitute consent was submitted under Section 177E of the Planning and Development Act 2000 (as amended) in response to a Section 177B Notice served on the applicant by Galway County Council. The application was accompanied by a remedial Environmental Impact Assessment Report (rEIAR), as required for any application made under this section of the Act. The rEIAR is laid out as follows:

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

I am satisfied that the information contained in the rEIAR 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 rEIAR, and the submissions made during the application. A summary of the submissions made by the planning authority, prescribed bodies, and observers along with the applicant's response to the concerns raised, has been set out at Section 5.0 of this report.

The rEIAR described the windfarm project (including the turbines & infrastructure; construction methodologies; grid connection & substations; ancillary works; associated site works including excavations & tree felling; the response to the 2003 peat slide event & ex-situ reforestation). A description of the main alternatives studied by the developer is provided along with the reasons for the preferred choice. The rEIAR sets 1998 as the baseline year as this is the year that the original environmental impact assessments should have been carried out. The impact of the windfarm project was assessed under 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. Impacts and potential impacts were assessed for the construction phase (before & after the peat slide event), operational phase (ongoing & future) and decommissioning phase. Mitigation and remedial measures are set out in each chapter and summarised in Appendix 18. The content and scope of the rEIAR is considered acceptable and in compliance with Planning Regulations. The rEIAR identified significant impacts that occurred during the construction phase (including the 2003 peat slide event). No significant adverse impacts were identified post mitigation during the later phases.

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

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

7.3 Consideration of Reasonable Alternatives

Chapter 3 of the rEIAR dealt with the consideration of alternatives. These included the “Do-nothing Scenario” whereby substitute consent would be sought for the existing 70 x turbine windfarm which would then cease to operate and be

decommissioned. The main alternatives considered related to other renewable energy generating options including solar power, energy storage and repowering with alternative turbine designs (fewer & taller), which were assessed with regard to a range of environmental variables, but not considered viable for the site. The rEIAR concluded that seeking substitute consent for the existing windfarm project and its continued operation would represent the best option having regard to the presence of windfarm infrastructure and the availability of an existing grid connection.

7.4 Landscape (Visual Impact)

7.4.1 Project description

The windfarm project is located within a remote upland rural area which is mainly characterised by extensive commercial forestry plantations, blanket bog and some turf cutting. The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of the visual assessment, the main elements of the project comprise 70 x existing wind turbines (c.60m high & c.75m tip height) and 2 x met masts (c.49m high), ancillary works (including tree felling), remedial works associated with the peat slide event (including barrages), 2 x substations at Derrybrien and Agannygal and the overhead N-S grid connection (c.7.8km long), along with new and upgraded internal access tracks, and minor road works and junction upgrades along the local road network. The turbines are mainly located in 6 x parallel rows along an E-W axis, they are relatively evenly distributed throughout the site and located on open peatland. The Derrybrien substation in located in the S section of the windfarm site and the Agannygal substation is located c.7.8km downslope, and the met masts are located in the N & S sections.

7.4.2 Locational context

The windfarm site occupies an attractive scenic location to the S of Loughrea, E of Gort and W of Portumna and Lough Derg. The c.345ha site is located in the N part of the Slieve Aughty Mountains, to the E of the peak of Cushlaundrumlahan, and the surrounding upland area is characterised by extensive commercial forestry plantations, blanket bog and turf cutting areas. The site levels vary from c.325mOD to c.365mOD, c.220ha of commercial forestry was felled to accommodate the windfarm project, and the SE section is occupied by turf cutting. The lands are traversed by a network of drainage ditches and streams that mainly drain S to the Owendalulleagh River and to a lesser extent N to the Boleyneendorrish River. There are 2 x operational and permitted windfarms in the wider area at Sonnagh Old to the N and Keelderry to the W. The village of Derrybrien is located c.2km to the S and

there are several dispersed houses along the local road network to the S and E. The wider area is traversed by several national, regional roads and local roads, including M18 to the W and the M6 to the N which were completed after the windfarm entered commission in c.2006. The lands occupied by the Agannygal substation to the SE are located at a lower level (c.190mOD) within an elevated section of a commercial forestry plantation. The overhead grid connection traverses a landscape characterised by a mix of agriculture, forestry and peatland over a relatively steep downward slope.

7.4.3 Remedial Environmental Impact Assessment Report

Chapter 9 of the rEIAR and Appendix 9.1, 9.2 & 9.3 dealt with landscape and visual impacts. Theoretical baseline conditions for 1998 were extrapolated and described along with a summary of landscape changes in the intervening years. A visibility analysis was undertaken for a c.20km radius of the site and the analysis included the establishment of a Zone of Theoretical Visibility (ZTV), Photomontages, a Viewpoint Assessment Summary, and an assessment Cumulative Impacts which included other operational windfarms in the area. Some 16 viewpoints were assessed which represented views from Protected Views, Scenic Amenity Areas and sensitive Landscape Character Areas, as well as the nearest houses, the road network, scenic and amenity routes and the wider rural environment. Construction, operational (past, present & future) and decommissioning phase impacts on the surrounding landscape were assessed for the entire windfarm project.

The rEIAR stated that the scale of visual impact at the 16 Viewpoint locations ranged from Neutral (13) to Moderate Adverse (3) where the visual sensitivity of the receptor ranged from Low/Medium (12) to Medium/High (4): -

- Imperceptible/Neutral at 3 x Viewpoint locations (VP1, VP4, & VP16),
- Not significant /Neutral at 3 x Viewpoint locations (VP2, VP8 & VP9),
- Slight/Neutral at 5 x Viewpoint locations (VP6, VP11, VP12, VP13 & VP15),
- Slight Moderate/Neutral at 1 x Viewpoint (VP14),
- Moderate/Neutral at 1 x Viewpoint locations (VP5),
- Moderate Adverse at 3 x Viewpoint locations (VP3, VP7 & VP10).

Moderate Adverse impacts on views were identified the shore of Lough Rea to the N (VP3), and from along the Black Road at Coppanagh and Derrybrien North to the E and SE (VP7 & VP10).

The rEIAR assessment concluded that any impacts on the landscape and visual amenities would diminish with distance and that only minor visual impacts have occurred due to the scale and height of the turbines, the undulating character of the landscape and forestry screening. It concluded that no significant effects have or will occur for road users or users in the wider area, and that there would be no significant cumulative effects with other operational windfarms.

7.4.4 Existing windfarm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type, and the details of are summarised in section 1.4 above. The existing windfarm project, which comprise 70 x turbines which c.75m high and 2 x met masts which are c.49m high, along with a c.7.8km long overhead grid connection, has been operational since c.2006.

7.4.5 Policy context

The Wind Energy Guidelines, 1996 provide general advice in relation to assessing the visual impact of windfarms. The 2006 Guidelines (& Draft Amendments) provide further detailed locational guidance in relation to the siting and layout of turbines and associated infrastructure, and it notes that landscapes of very high sensitivity may not be appropriate for wind energy development.

The visual impacts of the 3 x windfarm applications and Phase 3 amendments were originally assessed in relation to the County Galway Development Plan 1997-2003. Rural Areas Obj.13 sought compliance Wind Energy Guidelines 1996, and the Slieve Aughty Mountains were designated as a Category 2 High Scenic Amenity Area (HSAA) with the objective to restrict inappropriate development that would detract from the amenity value of the area. The CDP did not contain any protected views.

The County Galway Development Plan 2003-2009 was in place when permission was sought for time extensions to Phases 1 and 2. The Slieve Aughty Mountains were de-designated as a HSAA and classified as Landscape Character Area 6 with a Class 2 Medium Landscape Value, and the area was identified as a Strategic Area for wind energy (Landscape Character Assessment, 2003). The CDP also designated a Protected View from Lough Rea towards the Slieve Aughty Mountains.

(By way of policy evolution, the CDP 2009-2015 later reclassified the Slieve Aughty Mountains as a Not Normally Permissible Area following the adoption of the Wind Energy Strategy 2011 [after the area was designated as an SPA], which was incorporated into the CDP by a Variation).

In relation to the current County Galway Development Plan 2015-2021, the site is not located within a designated sensitive landscape or scenic amenity area. The Slieve Aughty Mountains are located within Landscape Character Area 6 which has Medium Landscape Value and Sensitivity Ratings. There is a designated Focal Point/View from the shore of Lough Rea to the N which extends S towards the Slieve Aughty Mountains. Policies and objectives contained in sections 9.10 to 9.13 of the CDP seek to ensure the protection of sensitive landscapes, scenic amenity areas and focal points/views. The Wind Energy Strategy designates the Slieve Aughty Mountains as a Not Normally Permissible Area for wind energy (unless project level EIA & AA conclude no adverse impacts/effects).

In relation to neighbouring counties, the County Tipperary County Development Plan (as Varied to amalgamate the N & S Tipperary CDPs) identifies the view from Terryglass Harbour on Lough Derg to the SE as a Listed View (Appendix 4, No. V08), and the current County Clare County Development Plan 2017-2023 (Map C & Appendix 5) identifies the area around Corlea Beg as a Heritage Landscape and the East Clare Way as a Scenic Route.

7.4.6 Assessment

I surveyed the windfarm project site, the surrounding area and the wider road network in County Galway and the neighbouring counties over a 3-day period in February 2021. I had regard to the rEIAR visual impact studies which are summarised in section 7.4.3 above. I also had regard to the concerns raised by the Observers which are summarised in section 5.0 above (including Friends of Derrybrien Environment), who raised concerns about the visual impact of the 75m high turbines on the Slieve Aughty Mountains. I also had regard to relevant national, regional, and local planning policy, which is summarised in Section 4.0, and to the presence of the operational windfarm on the site.

The Slieve Aughty Mountains are no longer covered by the sensitive landscape designation that applied when the windfarm applications were originally assessed in the late 1990s and early 2000s. However, there is a protected view towards the Slieve Aughty Mountains from the shore of Lough Rea to the N of the site and from Terryglass Harbour to the SE of the site in County Tipperary. There are also several designated scenic areas and walking routes in the wider area including at Coole Park to the W and the East Clare Way to the S of the site. It is also noted that the wider landscape and views to the site have varied moderately over the intervening years since c.1998 as a result of several changes (including deforestation & reforestation, the M6 & M18 and windfarms).

Wind turbines, by virtue of their nature, height, and scale, have an impact on the landscape. The windfarm project is located within a remote upland area in the N section of the Slieve Aughty Mountains that is far removed from any built-up areas. The settlement pattern of dwelling houses to the S is mainly dispersed and low density and the nearest occupied houses are in excess of 2km of the turbines. The undulating character of the landscape and forestry plantations provide for a high degree of natural screening. The turbines are located on a plateau with a linear dispersal pattern along an E-W axis and the overhead grid connection extends downslope in a southerly direction.

N of Derrybrien Windfarm:

rEIAR Viewpoint nos.1, 2, 3, 4, 5 and 6 deal with views from the N, NW & NE towards the site of the windfarm project. The distances range from between c.6km and 11km (VP5, VP6 & VP3) and between c.19 and c.22km (VP1, VP2 & VP4). The sensitivity of the visual receptors ranges from Low/Medium at 5 locations to High at one location (VP3). Having regard to the rEIAR visual assessment, the visual sensitivity of the receptors, the separation distances, and based on my inspection of the site and environs, the following 3 Viewpoints will be assessed in more detail below (VP3, VP5 & VP6).

rEIAR VP3: This viewpoint is from the shore of Lough Rea c.11km N of the windfarm site, and the view is identified as a Focal point/view in the Galway LCA and current Development Plan (Map FPVI). The upper sections of turbines are visible along the ridgeline from this viewpoint and the Sonnagh Old turbines are also visible to the W. Although there is a direct visual impact from this viewpoint and the overall impact is moderately significant, the view S from Lough Rea to the Slieve Aughty Mountains is panoramic in extent, and this, when taken in combination with the 11km separation distance, ensures that the windfarm project does not constitute an overly dominant feature on the horizon.

rEIAR VP5: This viewpoint is from along the local road at Curhoor in the townland of Kileenadeema c.6km NW of the windfarm site, between the Slieve Aughty Mountains and Lough Rea. This location is not covered by any sensitive scenic, landscape or protected view designations, and the intervening landscape is mainly characterised by commercial forestry plantations. The upper sections of turbines are visible along the ridgeline from this viewpoint and the Sonnagh Old turbines are also visible in the distance. The windfarm project does not constitute an overly dominant feature on the horizon and the visual impacts are not significant from this viewpoint.

rEIAR VP6: This viewpoint is from along the N66 (Gort to Loughrea road) in the townland of Cuilmore (near Peterswell) c.8km to the NW of the windfarm site. This location is not covered by any sensitive scenic, landscape or protected view designations, and the intervening landscape is mainly characterised by agricultural fields and commercial forestry plantations. The upper sections of turbines are visible along the ridgeline from this viewpoint and some of the Sonnagh Old turbines are

also visible. The windfarm project does not constitute an overly dominant feature on the horizon and the visual impacts are not significant from this viewpoint.

Other views: The proposed turbines are intermittently visible from along the surrounding area to the N, NW & NE, however none of these views are protected and there would be no significant adverse visual impacts on the landscape or other sensitive locations. The turbines do not constitute a dominant feature on the surrounding upland forested landscape.

S of Derrybrien Windfarm:

rEIAR Viewpoint nos.10, 11, 12, 13, 14, 15 and 16 deal with views from the S, SW & SE towards the site of the windfarm project. The distances range from between c.1.3km and 12.5km (VP10, VP11, VP13, VP14 & VP15) and between c.21.5km and c.25km (VP12 &VP16). The sensitivity of the visual receptors ranges from Low/Medium at 4 locations to Medium/High at 3 locations (VP10, VP12 & VP14). Having regard to the rEIAR visual assessment, the visual sensitivity of the receptors, the separation distances, and based on my inspection of the site and environs, the following 2 Viewpoints will be assessed in more detail below (VP10 & VP14).

rEIAR VP10: This viewpoint is from along the Black Road at Derrybrien North just N of the junction with the R353 and c.1.3km immediate SE of the windfarm site. This location is not covered by any sensitive scenic, landscape or protected view designations, and the intervening landscape is mainly characterised by commercial forestry plantations. A significant number of the turbines are visible from this viewpoint and the windfarm constitutes a dominant feature on the horizon. However, the visual impacts are not significant having regard to the remote location, character to the surrounding area and the proximity of the viewpoint to the windfarm. The visual impact on the surrounding landscape and views would be moderately significant and local in extent.

rEIAR VP14: This viewpoint is from along an elevated section of a local road close to Lough Graney and the East Clare Way walking route at Corlea Beg, c.10km S of the windfarm site. There are clear views towards the Slieve Aughty Mountains from this location which is designated as a heritage landscape and scenic route in the County Clare Development Plan 2017-2023 (Map C & Appendix 5), although the

view is not protected. The intervening scenic landscape is mainly characterised by rolling agricultural fields and a mix of broadleaf and coniferous forests which are interspersed with peatlands. A significant number of the turbines are visible from this viewpoint along the ridgeline. Although there is a direct visual impact from this viewpoint, the overall impact is not significant as the view N from Lough Graney and the East Clare Way Mountains is panoramic in extent, and this, when taken in combination with the c.10km separation distance, ensures that the windfarm project does not constitute an overly dominant feature on the horizon, although visual impact on the surrounding landscape and views would be moderately significant.

Other views: The proposed turbines are intermittently visible from along the surrounding area to the S, SW & SE, however none of these views are protected and there would be no significant adverse visual impacts on the landscape or other sensitive locations. The turbines do not constitute a dominant feature on the surrounding upland forested landscape.

W of Derrybrien Windfarm:

rEIAR Viewpoint no.9 deals with the view from the W towards the site of the windfarm project at a distance of c.13km and the sensitivity of the visual receptor is Low/Medium. Having regard to the rEIAR visual assessment, the visual sensitivity of the receptor, the separation distances, and based on my inspection of the site and environs I am satisfied that this Viewpoint does not required any further assessment as the visual impact on the surrounding landscape would not be significant.

Other views: The proposed turbines are intermittently visible from along the surrounding area to the W, however none of these views are protected and there would be no significant adverse visual impacts on the landscape or other sensitive locations. The turbines do not constitute a dominant feature on the surrounding upland forested landscape.

E of Derrybrien Windfarm:

rEIAR Viewpoint nos.7 & 8 deal with views from the E towards the windfarm project. The distances range from between c.1km and 9km (VP7 & VP9) and the sensitivity of the visual receptors range from Low to Medium. Having regard to the rEIAR visual assessment, the visual sensitivity of the receptor, the separation distances and

based on my inspection of the site and environs, the following 2 Viewpoints will be assessed on more details below (VP7 & VP9).

rEIAR VP7: This viewpoint is from along the Black Road at Coppanagh c.1.0km to the immediate E of the windfarm site. This location is not covered by any sensitive scenic, landscape or protected view designations, and the intervening landscape is mainly characterised by open peatlands with commercial forestry plantations framing the windfarm site. A significant number of the turbines are visible from this viewpoint and the windfarm constitutes a dominant feature on the horizon. However, the visual impacts are not significant having regard to the remote location, character of the surrounding area and the proximity of this viewpoint to the windfarm. The visual impact on the surrounding landscape and views would be moderately significant and local in extent.

rEIAR VP 8: This viewpoint is from along the R351 (Loughrea to Woodford road) at Derrygariff c.9km E of the windfarm site. This location is not covered by any sensitive scenic, landscape or protected view designations. The intervening scenic landscape is mainly characterised by rolling agricultural fields, a mix of broadleaf and coniferous forests which are interspersed with peatlands, and dispersed dwellings along the roadside. A significant number of the turbines are visible in the distance from this viewpoint along the ridgeline. The windfarm project does not constitute an overly dominant feature on the horizon and the visual impacts are not significant from this viewpoint having regear to the panoramic nature of the view.

Other views: The proposed turbines are intermittently visible from along the surrounding area to the W, however none of these views are protected and there would be no significant adverse visual impacts on the landscape or other sensitive locations. The turbines do not constitute a dominant feature on the surrounding upland forested landscape.

Long Distant Views:

Several of the rEIAR Viewpoints deal with more long-distance views towards the windfarm project from the outer perimeter of the 20km radius or beyond, most of which are not Protected Views. These include views from the far N, NW and NE of the site (VP1, VP2 & VP4) from the M6, N18 and N65 respectively, the far SE

(VP12) at Terryglass Harbour in Co. Tipperary (Tipperary CDP identifies the view NW of Terryglass as a Listed View [Appendix 4, No. V08]), and the far SW (VP16) along the M18 to the S of Gort. The visual impacts of the turbines when viewed from these locations are mainly imperceptible with no significant visual impacts on the landscape or views, having regard to the significant separation distance, the undulating character of the intervening landscape and the extensive forestry plantations.

Recreational & tourist areas:

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

Dwelling houses & community buildings: refer to section 7.6 below.

Peat slide event: Having regard to the remote upland location and the ground level nature of the 2003 peat slide event, and notwithstanding its scale, it is unlikely that the peat slide and remedial barrages had any significant adverse impacts on the visual amenities of the surrounding areas. At a local level, the area has regenerated in the intervening years and there have been no residual visual impacts.

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on visual amenity in the surrounding area.

Cumulative impacts:

There are 2 x operational and permitted windfarms in the wider area including Sonnagh Old to the N and Kilderry to the W and the rEIAR Photomontages describe the in-combination effects. Although the Derrybrien and Sonnagh Old turbines are visible from several Viewpoints (VP3 [Lough Rea], VP5 & VP6) and some other elevated and low-lying locations they would not dominate the landscape. Although there is some potential for in-combination effects, they are not significant given the

substantial separation distances with the site with no adverse cumulative impacts have or would occur. Furthermore, no significant adverse cumulative visual impacts are anticipated for long distance views (VP1, VP2, VP4, VP9, VP12 & VP16).

Conclusion: The windfarm project was not and is not highly visible or visually intrusive because of the intervening mountainous topography, the extensive forestry plantations, the remote location, and the separation distances between the viewpoints and the windfarm site. Therefore, the existing turbines did not, and would not constitute a dominant feature on the landscape or interfere with long distance views. No significant in-combination visual impacts have or would occur.

7.4.7 Conclusions:

Residual Effects: Residual impacts have not been significant, nor are they predicted to be significant in the future.

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

Conclusion: The written submissions in relation to Landscape are noted. However, I am satisfied that all issues related to the landscape and visual impacts (past, present & future) have been appropriately addressed in terms of the application and that no significant adverse effect has arisen or is likely to arise.

Overall conclusion:

Having regard to all of the above, I am satisfied that the most significant visual impact would be from within the windfarm site itself, and then from along local roads to the immediate E and SE, and intermittingly from along sections of the wider national and regional road network. The windfarm project has not, and would not adversely affect the landscape character or visual amenities of the area, or interfere with any protected views along scenic routes in the surrounding area, to any significant extent. The windfarm project has not, and 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 turbines has not, and would not give rise to a significant adverse visual impact having regard to the overall scale of the site and

the high degree of natural screening from the surrounding mountain ranges and forestry plantations.

7.5 Material Assets (movement & access)

7.5.1 Project description

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment (material assets including movement & access) the main elements of the project relate to the delivery of turbine components and construction materials to the site, removal of felled trees from the site, and the response to the 2003 peat slide event during the construction phase, and the future removal of equipment from the site during the decommissioning phase, along the national, regional, and local road network.

The main infrastructure elements include:

- Minor road & junction works to facilitate the delivery of components.
- Strengthening works at 3 bridges along the Black Road.
- Upgrade of existing site access roads & a new site access road.
- New internal tracks & upgrade of existing forestry tracks.
- Response to the 2003 peat slide event (installation of barrages, repairs to roads & bridges and new access tracks).

7.5.2 Locational Context

The windfarm project occupies an upland rural location in the N Slieve Aughty Mountains in S County Galway and the lands are mainly characterised by blanket bog with extensive commercial forestry plantations and some turf cutting. In strategic terms, the windfarm project was previously located to the E of a N18 (now M18 & R458) which connects Clare with Galway, and S of the N6 (now M6) which connects Dublin to Galway. The M18 and M6 were opened after the windfarm was constructed and commissioned in c.2006. Derrybrien village and several dispersed houses are located to the S along the R353, and surrounding land uses include forestry, agriculture and turf cutting. Access to the windfarm site was from Gort to the W off the N18 (now M18) and along the R353 to the S, then the Black Road to the E and

then along a Coillte access road. Access to the site of the Agannygal substation site was off the local road network to the SE.

7.5.3 Environmental Impact Assessment Report

Chapter 14 of the rEIAR and Technical Appendix 14 (A-C) deal with the traffic and transport effects of the windfarm project on the national, regional and local road network during the construction, operational and decommissioning phases, including the response to the 2003 peat slide event. The original turbine delivery routes from Dublin and Larne Ports utilised the national road network to Galway (including the then N6 & N55) and the national road network to Gort (including the then N18 & N66). The construction materials delivery route (quarry stone & concrete) utilised the western national and regional road network to Gort from within counties Galway and Clare. The turbine and construction materials delivery routes traversed the R353 E to Derrybrien and then NE along the local road network to the forestry site entrance.

The rEIAR described the characteristics of the road network (including road width, junctions, bridges & capacity) and delivery vehicle specifications. It also identified several sensitive receptors along the haul routes (including community facilities and dwelling houses). The rEIAR referenced previous traffic counts along the road network which were used to describe traffic volumes, assess the impact of traffic generation and the capacity of the road network to accommodate abnormally large vehicles. It highlighted the extent of the remedial works that were required along the haul route and at the site access, and identified the works that may be required in the future during the decommissioning phase.

During the ***construction phase***, the rEIAR states that HGV movements were spread across the 34-month construction period with an average of c.15 deliveries per day (c.30 both ways), peak movements occurred in July 2005, and abnormal load deliveries were spread across a 6-month period. Table 14-5 summarises that the total HGV materials movements (including tree felling) were in the region of 8,220 (c.16,440 both ways). Table 14.6 summarises that total HGV turbine and equipment movements were in the region of 16,440 (c.32,884 both ways), of which c.427 (c.714 both ways) were abnormal loads. The rEIAR concluded that the national, regional

and local road network had sufficient spare capacity to accommodate the increase in traffic volumes during the construction phase.

The rEIAR notes that the response to the 2003 ***peat slide event*** required the additional movement of vehicles along the local road network to manage and remove debris, some temporary road closures, repair works to several bridges and some additional and replacement internal access tracks. The rEIAR concluded that the impact of the peat slide on the local road network was adverse, significant and temporary, but that the road network had sufficient spare capacity to accommodate the increase in traffic volumes during response works.

During the ***operational phase*** the increase in traffic was, and is limited to a small number of employees with no resultant impacts on the road network.

During the ***decommissioning phase***, the rEIAR predicted that the impacts will be less significant than during the construction phase, as many of the ground works will remain in-situ, and that decommissioning will take c.24 months. It concluded that any adverse impacts on the road network would be short-term and temporary.

The rEIAR concluded that the road network had and has sufficient spare capacity to accommodate any previous and future increase in traffic volumes during the construction and decommissioning phases (including the response to the peat slide event). The rEIAR concluded that only short-term temporary impacts during the construction phase occurred with a similar (or lesser) scale of impact predicted for the decommissioning phase, and that the mitigation measures (including a Traffic Management Plan and liaison with the County Council, Gardaí & local communities) have and would minimise the impacts on the road network. The rEIAR did not identify or predict any cumulative transport impacts in-combination with other operational windfarms, plans or projects in the wider area, or any other significant adverse impacts during the construction, operational or decommissioning phases.

7.5.4 Existing Windfarm

Three separate planning permissions were granted in the late 1990s and early 2000s for the windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type. The details are summarised in section 1.4 above. Vehicular access to the site during the construction phase and response to the 2003 peat slide event was off the N18 to the W and via the R353. The M18 to the W and M6 to the N did not open until after the windfarm was commissioned in 2006.

7.5.5 Policy Context

The relevant previous and current County Galway Development Plans (1997-2003, 2003-2009 & 2015-2021) contain a range of policies and objectives for the protection and management of the national, regional and local road network.

7.5.6 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider road network in County Galway and neighbouring counties over a 3-day period in February 2021. I had regard to the relevant rEIAR traffic and movement studies which are summarised in section 7.5.3 above, relevant national, regional and local transportation and planning policy which is summarised in section 4.0, and to the presence of an operational windfarm on the site. It is noted Galway County Council, the Prescribed Bodies and the Observers did not raise any concerns in relation movement and assess, although Transport Infrastructure Ireland recommended compliance with national policy and guidance.

Delivery route:

Vehicular access to the windfarm project site was, and is off the N18 (now M18) to the W at Gort and via the R353 to Derrybrien, and along the local road network (including Black Road) which serves the original commercial forestry plantation and turf cutting area. During the construction phase, the use of the national and regional road network from Dublin and Larne Ports via the N6 and N66 to the site via Galway and Gort (N18 & R353) was an acceptable delivery route for the turbine components,

as was the use of the western national and regional road network for the delivery of construction materials.

The rEIAR retrospective analysis of the physical condition and traffic volumes along these routes indicates that the road network had adequate capacity to accommodate the levels of HGV traffic movements generated during the construction phase. The increase in traffic volumes along the local road network during the construction phase would have been moderately adverse, short term and temporary and there are no recorded traffic incidences of or serious accidents. The level of traffic generation during the decommissioning phase is likely to much lower, given that it will mainly deal with the removal of windfarm components and not the importation of construction materials, as all ground works will remain in-situ.

Notwithstanding this conclusion, some physical works along the local road network were required during the construction phase and in response to the peat slide event, and may be required during the decommissioning phase. Furthermore, the significant increase in traffic volumes, and in particular the transportation of abnormally large loads, would have caused, and could cause disturbance to local communities who live along the R353 during both phases. It is noted that a Transport Management Plan will be put in place for the decommissioning phase which provides for consultation with the local community, and it should ensure that local people are notified in advance of any plans to transport large loads.

During the decommissioning phase, any physical works along the public road network should comply with TII standards and be subject to a Road Safety Audit as appropriate, and permits may be required for abnormal or heavy loads. The capacity of all structures along the haul route should be checked and a technical load assessment should be required. Any works to the road network and junctions should be at the developer's expense following completion of the project.

I am satisfied that the delivery (and removal) arrangements did not, and would not give rise to a traffic hazard or endanger the safety of other road users and that any future disturbance to local communities along the route would be short term and temporary in nature. However, temporary traffic management measures should be

put in place for the entire duration of the decommissioning works in order to avoid a traffic hazard along the R353 and local road network. This could be addressed by the Traffic Management Plan.

Vehicular access:

Vehicular access to the windfarm project was and is off the Black Road to the E of the site which also serves the commercial forestry plantations and turf cutting areas. The intensified past and future use of this access during the construction and decommissioning phases was, and would be a short-term temporary arrangement only, and any adverse impacts on traffic volumes, carrying capacity and physical structure would be correspondingly short term and temporary in nature. Any traffic impacts associated with the future use of this access during the decommissioning phase, including traffic increases and any upgrade of infrastructure in the vicinity, would be managed by the rEIAR mitigation measures (which include a Traffic Management Plan). I am satisfied that the vehicular access arrangements did not, and would not give rise to a traffic hazard or endanger the safety of other road users.

Internal access tracks:

The windfarm project utilised, upgraded and extended the existing network of internal forestry tracks to provide access to and between the turbines and other project elements, which is considered acceptable, and it is noted that additional road works were required following the peat slide event in the S section of the site. Some minor additional internal road works may work may be required to facilitate the removal of windfarm equipment during the decommissioning phase, and this is also considered acceptable in terms of movement and access. Note that any issues related to peat stability, water quality and ecology will be addressed in the following sections of this report.

Peat slide event:

The 2003 peat slide event occurred during the early part of the construction phase and it resulted in the mass movement of c.250,000 tonnes of peat and forest debris in a SE direction from the S section of the site. This event had a significant physical adverse impact on the local road network and nearby bridges (including Black Road, the southernmost Black Road bridge & Flaggy Bridge along the R353). The

emergency and remedial works which included the installation of several barrages, road and bridge repairs, would also have generated additional traffic movements along the N18, R353 and local roads. However, the impacts on the road network were short term and temporary and did not persist after the completion of the construction phase in c.2006.

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on movement and traffic in the surrounding area.

7.5.7 Conclusions:

Residual Effects: There was and would be a short-term increase in traffic movements during the construction (including the response to the peat slide event) and decommissioning phases, but no significant increase during the operational phase. Residual impacts are not predicted to be significant subject to the implementation of rEIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative traffic impacts during the construction, operational and decommissioning phases on the road network, when taken in combination with other windfarms, plans and projects in the surrounding area, were and would be minimal in extent, having regard to the conclusion of no significant impact at project level.

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 windfarm project did not, and would not give rise to a traffic hazard or endanger the safety of other road users, subject to the full implementation of the rEIAR mitigation measures and compliance with any recommended planning conditions. The windfarm project has not and would not give rise to any significant adverse

cumulative traffic impacts in-combination with other windfarms, the grid connection or plans and projects in the wider area.

7.6 Population, Human Health, Air & Climate

7.6.1 Project description:

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment, the main elements of the project relate to the construction works, the response to the 2003 peat slide event, the operational windfarm, and the decommissioning works. 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. Visual impacts are assessed in section 7.4 above and traffic impacts are assessed in section 7.5.

7.6.2 Locational context

As previously stated, the windfarm project occupies an upland rural location in the N Slieve Aughty Mountains in S County Galway and the lands are mainly characterised by blanket bog with extensive commercial forestry plantations and some turf cutting. The surrounding rural area is sparsely populated. The closest house (derelict) is located c.1.5km to the S. Derrybrien village is located c.2.5km to the S of the site, and there and there several dispersed houses located along the R353 to the S and 2 to the E, and along the haul routes to the N and W of the site, with increasing residential densities along the approach roads to Galway and Gort. The Agannygal substation is located within a remote forestry plantation which is sparsely populated.

7.6.3 Remedial Environmental Impact Assessment Report

Chapters 4, 5, 6, 9, 12, 13, 14 & 16 of the rEIAR and associated Technical Appendices dealt with the human environment including population & human health (economic activity, land uses, tourism & employment), noise, shadow flicker, visual amenity, air and climate, material assets, traffic and transport, and major accidents and disasters. These chapters identified the potential impacts on residential amenity, communities and the wider human population during the construction (including the peat slide event), operational and decommissioning phases.

Section 4 of the rEIAR dealt with **population and human health.** It described the population, employment, economic activity, land uses, services and tourist attractions in the surrounding area (past & present) and it stated that there have been, and would-be positive health effects related to a reduction in the use of fossil fuels to generate energy. It identified several dwelling houses and commercial buildings within a 2.5km radius of the windfarm project which are mainly located to the S of the site at Derrybrien Village and along R353 and two houses to the E, all of which are located outside the 2km radius. It also identified several dwelling houses within a 2.5km radius of the Agannygal substation, two of which are located within the 1km radius. The rEIAR extrapolated that the windfarm project did not result in any significant adverse effects on human beings during the construction phase, other than short term temporary disturbance. It concluded that following the implementation of mitigation measures (related to noise, shadow flicker & traffic) and ongoing monitoring, the windfarm project would not give rise to any significant impacts during the operational and decommissioning phases.

Chapter 5 of the rEIAR and associated Technical Appendices dealt with ***noise and vibration*** and it stated that there are no sensitive receptors within 2km of the site other than a derelict house. The rEIAR extrapolated that there would have been noise disturbance during the construction phase (including the peat slide event) which was short term and temporary. It concluded that there was, and would-be minimal disturbance from the operational turbines at the nearest noise sensitive locations, and that any adverse noise impacts during the decommissioning phase would be temporary and short term. The assessment included desktop and field studies and had regard to the previous 1996 and current 2006 Guidelines. It identified several dwelling houses within a 2.5km radius of the windfarm project, all of which are located to the S and E of the site, and mainly at Derrybrien Village to the S and along the R353.

In relation to ***construction & decommissioning noise, the rEIAR*** estimated noise levels for past construction activities before and after the peat slide event (including HGV movements, construction works & rock breaking) and it predicted noise levels for the decommissioning phase (including dismantling the turbines and HGV movements). Noise levels from construction activities were in the region of 35 to 46dB LAeq at the nearby derelict house (R39) with a total construction level noise of

c.49dB LAeq, and from 31 to 42dB LAeq at the nearest occupied house (R35) with a total construction level noise of c.45dB LAeq. Both estimates are below relevant construction noise criterion of 65dB LAeq. Noise from construction plant, the peat slide response works and rock breaking activities would have been marginally higher, but still below 65dB LAeq, although individual blast events were more audible. Construction noise related to the overhead power lines and Agannygal substation fell below 65dB LAeq. The rEIAR concluded that the windfarm project may have given rise to moderately adverse noise impacts during the construction phase (including the peat slide event), which would have been short term and temporary, and within guidance limits. The rEIAR did not extrapolate any significant adverse noise impacts during the decommissioning phase, given that the below ground infrastructure would remain in-situ, subject to mitigation measures (including best construction practice).

In relation to ***operational noise***, the rEIAR carried out preliminary noise modelling to select appropriate monitoring locations for the Baseline Noise Survey and Noise Contour Map. It identified 3 noise sensitive locations within the 35-38dB noise contour (R35, R36 & R37) and 1 within a predicted down wind noise level of c. 31.6dB (R21). Sound level meters were placed at 2 representative house locations (R21 & R35) to the S and SW of the turbines. The models also included the Sonnagh Old windfarm to the N in order to assess cumulative impacts. Background noise sources were noted (mainly traffic & farm machinery), measurements were recorded at the 2 monitoring locations, and a variety of wind speeds and wind shear formed part of the (indicative) prediction model for day and nighttime noise during the operational phase at 4 properties (R21, R35, R36 & R37). The rEIAR predicted that noise levels would not exceed the accepted criteria for day and night-time noise at any of the houses under a range of wind speeds during the operational phase (past, present & future) with no mitigation measures proposed.

Chapter 6 of the rEIAR dealt with **shadow flicker**. The computer modelling examined the potential for shadow flicker occurrence during the operational phases within a 2km radius of the site (which overlapped slightly with Sonnagh Old windfarm to the N). The rEIAR stated that there are no sensitive receptors within 2km of the nearest turbines, and that the nearest structure at R39 is derelict (1.2km from T23,

T70 & T71). It stated that no property has or would experience an excess of 30 hours of shadow flicker per year or 30 minutes per day, and concluded that the windfarm project has not, and would not rise to shadow flicker effects during the operational phases, on its own or in-combination with other windfarms. No mitigation measures are required or proposed.

Chapter 12 of the rEIAR dealt with **air and climate**. It stated that there would be no emissions from the wind farm project with no adverse impacts on residential amenity or air quality. It extrapolated that there would have been short term impacts on air quality by way of dust emissions during the construction phase (including the peat slide event) with regard to delivery and construction vehicles, excavations and construction works, but noted that the nearest occupied dwellings are over 2km away. There was a loss of carbon sequestration capacity as a result of the site excavation works and the peat slide event, which it stated was balanced by the lack of carbon emissions from the project. The rEIAR extrapolated that the windfarm project did not result in any significant adverse effects on air and climate during the construction phase but noted that the peat slide event affected the carbon balance sheet and payback period. The rEIAR did not predict any adverse impacts on air and climate during the operational phase, or the decommissioning phase subject to mitigation measures (including maintenance the use of best construction practice).

Chapter 16 of the rEIAR dealt with ***major accidents and disasters*** and it specifically referenced the 2003 peat slide event.

7.6.4 Existing Windfarm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type, and the details of are summarised in section 1.4 above. The existing windfarm project, which comprise 70 x turbines which c.75m high and 2 x met masts which are c.49m high, along with a c.7.8km long overhead grid connection, has been operational since c.2006.

7.6.5 Policy Context

The Wind Energy Guidelines, 1996 provide very general advice in relation to assessing the impact of windfarms on residential amenity. The 2006 Guidelines (& Draft Amendments) provide further detailed and specific guidance in relation to assessing the potential impacts of construction activities, visual amenity, noise and shadow flicker on sensitive receptors. The previous relevant County Galway Development Plans required compliance with the 1996 and 2006 Guidelines whilst the current Development Plan contain a wide range of policies and objectives for the protection of residential amenity (Refer to section 4.0 above).

7.6.6 Assessment

As previously stated, I surveyed the wind farm site and surrounding area over a 3-day period in February 2021. I had regard to the relevant rEIAR shadow flicker, air quality and noise studies which are summarised in section 7.6.3 above and the concerns raised by the Observers which are summarised in sections 5.0. No serious concerns were raised in relation to the construction, operational or decommissioning phases of the windfarm project with respect to population and human health (except for stress related to the peat slide event). I also had regard to relevant national, regional and local planning policy, which is summarised in section 4.0, and to the presence of an operational windfarm on the site.

The windfarm project provided and will provide significant employment opportunities during the construction and decommissioning phases, although operational phase employment is limited to 2 to 3 positions related to ongoing maintenance. The project has given rise and will continue to give rise to financial benefits by way of commercial rates and community gain benefits. The impacts on residential amenity arising from the various phases of the project (past, present & future) are assessed below. Issues related to landscape and traffic have been assessed in sections 6.4 and 6.5 above.

Dust, air quality & climate:

The excavation and construction work, any works associated with road or junction upgrades, and the peat slide event (including the response works) could have given rise to dust emissions during the construction phase, and this combined with vehicle

emissions, could in turn have affected air quality. However, it is unlikely that any of the emissions (except for vehicles) would have had a noticeable adverse impact on residential amenity having regard to the separation distances between the works and the neighbouring houses to the S and E. Any impacts associated with vehicle emissions would have been short term and temporary. There would be negligible dust and vehicle emissions during the operational phases. In relation to the decommissioning phase, the full implementation of rEIAR mitigation measures and compliance with best construction practices would minimise any potential short term temporary impacts on dwelling houses in the area. The windfarm project had and would continue to have a positive impact on air quality and climate as a result of the decreased demand for fossil fuel generated energy and associated emissions.

Shadow flicker:

The previous 1996 Wind Energy Guidelines required a general consideration of impacts on residential amenity, whilst the current 2006 Guidelines require a more detailed 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 2006 Guidelines also recommend that shadow flicker should not exceed 30 hours per year or 30 minutes per day, and state that at distances of greater than 10 rotor diameters the potential for shadow flicker is very low. The 2019 Draft amendments to the Guidelines require the submission of a shadow slicker assessment and the attachment of a condition to ensure that there will be no shadow flicker at any nearby dwelling or other sensitive property by way of a computerised turbine shutdown at critical times.

The application of the 2006 Guidelines 10-x rotor blade diameter equation equates to a separation distance of c.750m (10 x 75m). The closest occupied dwelling house or sensitive receptor to the windfarm site is located in excess of c.2km to the S of the nearest turbines, and I would concur that the closest property at R39 comprises a derelict house. I am satisfied that no other dwelling houses or sensitive properties lie within c.2km of the nearest turbine. It is noted that the previous and current Development Plans do not currently contain any specific standards in relation to shadow flicker, and that none of the Observers has raised it as a cause for concern.

Having regard to all of the above, I am satisfied that the turbines have not, and would not seriously injure the residential amenities of any houses or sensitive receptors in the surrounding area by way of shadow flicker.

Noise disturbance:

Given the nature, scale, and exposed location of the windfarm project, it could have given rise to noise disturbance during the construction phase (including the peat slide event). Although the works were short term and temporary, they had the potential to cause a disturbance at nearby dwelling houses to the S at Derrybrien Village and to the E. The works at the Agannygal substation and along the cross-country grid connection route could also have resulted in noise disturbance however, most of the route is sparsely populated. It is also possible that the operational windfarm caused, and could cause noise disturbance, and that works during the decommissioning phase could give rise to noise disturbance at nearby houses.

Construction phase:

It is noted that the surrounding area is not densely populated, there are several houses located within a 2.5km radius of the project, all of which are located outside the 2km radius, except for R39 which is derelict. There would have been a substantial separation distance between the construction works and the nearest houses to the S and E, which are mainly located in Derrybrien Village and along the R353 to the S. The construction noise impacts were mainly related to the delivery of large components along the local road network, road works & access track upgrades, turbine excavations and rock extraction from borrow pits. The impacts would have been short term and temporary, and having regard to the substantial separation distances and the derelict nature of the closest property, I am satisfied that most of the impacts would have been moderate in extent. There are several houses located within a 2.5km radius of the Agannygal substation which may have being disturbed by noise during the construction phase, however having regard to its location within a forestry plantation and the smaller scale of the substation works, any adverse impacts would have been minimal, short term and temporary.

Operational phase:

The previous 1996 Wind Energy Guidelines advised a general consideration of turbine noise impacts, whilst the current 2006 Guidelines require a more detailed assessment of the effects on dwelling houses and community buildings with a minimum 500m setback. The 2019 Draft Amendments propose the application of more stringent noise limits in line with WHO noise standards together with a more robust noise monitoring system and a reporting system. The mandatory minimum 500m setback from houses augmented by a setback of 4 x turbine height from sensitive receptors (whichever is greater) is required.

The 2006 Wind Energy Guidelines 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 Amendments have more stringent requirements for day and night-time noise and it provides a much more detailed level of guidance for the assessment of noise. It requires the applicant to provide for an assessment of Relative Rated Noise Limits (RRNL) measured as LA rated 10min which considers 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 (including scheduled commitments, RRNLs & an annual monitoring report) and a Noise Verification Monitoring for larger projects. Applications should be accompanied by a noise modelling report, stated compliance with limits, a methodology for a post completion noise survey, a map of noise monitoring locations, and a proposal for a documented complaint handling procedure.

The closest occupied dwelling house or sensitive receptor to the windfarm site is located in excess c.2km to the S and E of the nearest turbine which is well in excess of the 500m minimum separation distance (2006 Guidelines & Draft Amendments). It is noted that the previous and current Development Plans do not currently contain any specific standards in relation to noise, and that none of the Observers has raised it as a cause for concern.

The rEIAR identified several dwelling houses within a 2.5km radius where operational noise levels were monitored, and it set up 2 noise monitoring locations at the houses located closest to the windfarm at R21 & R36 the S of the site. 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 35dBA at any house under any circumstances. There are no occupied dwelling houses located within 2km of the proposed turbines and the nearest derelict dwelling (R39) is located c.1.2km to the S of the nearest turbines (T23, T70 & T71). I am satisfied, based on the results of the Noise Assessment, that the noise levels did not, and would not exceed the accepted criteria for day and night-time noise at any houses or other sensitive receptors which is in line with the current 2006 Guidelines. However, a monitoring strategy should be put in place in the event that noise levels are not exceeded so as to ensure that turbine noise does affect any houses, particularly under extreme weather conditions. This could be addressed by a planning condition. In relation to the 2019 Draft Amendments, the maximum predicted noise levels at the nearest noise sensitive locations under high wind conditions within the surrounding rural area (i.e. 35dB(A) at R39 (derelict house) would not exceed the 43dB (A) absolute limit set out in the Draft Amendments.

Conclusion: Having regard to all the foregoing, I am satisfied that the operational windfarm did not, and 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 recommended planning conditions in relation to the continued operation of the windfarm.

Decommissioning phase:

In relation to the decommissioning phase, the rEIAR noise control and monitoring measures are considered adequate and any outstanding noise concerns could be addressed by way of conditions which place restrictions of haul times and hours of de-construction. Local residents should be notified in advance of any major dismantling works including the transport of large pieces of plant and equipment from the site along the local road network.

Residential visual amenity:

The previous 1996 Wind Energy Guidelines required consideration of residential amenity and visual impacts, whilst 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 also require a 500m setback or a setback in the order of 4 x times the tip height of the turbine (whichever is greater).

The existing 70 x 75m high turbines occupy an upland rural landscape and by virtue of their height and elevated position they would be visible from a variety of locations in the surrounding area. The rEIAR identified several dwelling houses within a 2.5km radius of the windfarm project which are mainly located to the S of the site where the lands rise steeply to the S and N. None of these houses are located within 500m of the turbines (in line with the 2006 Guidelines and 2019 Draft amendments) and all of them would be located outside a 2km radius (except for R39). Most of the houses in the vicinity of Derrybrien Village and along the R353 would not have a view of the turbines because of their position relative to the upland area and steep incline. Some houses would have intermittent or partial views of the upper sections of the turbines (blades and/or nacelles) but not the entire structures. Several of the turbines would be visible at several houses in the wider area, however they are all located in excess of 3.0km of the site. The low rise Agannygal substation is located with a forestry plantation and no residential visual amenity impacts arise.

Having regard to my assessment of the site and surrounding area, the physical characteristics of the terrain, the absence of dwelling houses within a 2km radius to of the site, the substantial separation distances between the proposed windfarm and

the nearest houses to the S and E of the site, and the absence of any houses within 500m of the proposed turbines (including at the Agannygal substation), I am satisfied that the windfarm project did not, and would not have an adverse impact on the visual amenities of any houses or community buildings in the surrounding area.

Peat slide event:
The 2003 peat slide event occurred during the early part of the construction phase and it resulted in the mass movement of c.250,000 tons of peat and forest debris in a SE direction towards Derrybrien and Flaggy Bridge along the R353. This event would have contributed to the overall effects of the windfarm project on population and human health in terms of the additional impact it would have had on noise, dust emissions, air quality and visual amenity, although these impacts on were short term and temporary and did not persist after the completion of the construction phase in c.2006. However, it is acknowledged that the impact on the stress levels of local residents may have been more long term, although difficult to quantify.

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on population, human health, and air and climate in the surrounding area.

Conclusion: Having regard to the foregoing, I am satisfied that the windfarm project did not, and would not have a significant adverse impact on population or human health by way of shadow flicker, dust, noise, or visual intrusion during the construction, operational (past, present & future) and decommissioning phases. However, the on-going adverse impact of the peat slide event on the stress levels of local people is acknowledged.

7.6.7 Conclusions:

Residual Effects: There would have been some increase in noise and dust emissions during the construction phase, and there would be some increase during the decommissioning phase, however the predicted levels are within guidance limit values. Residual impacts are not predicted to be significant subject to the implementation of rEIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative noise impacts during the operational phase (past, present & future) 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 impact at project level, and the remote upland location.

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

Overall conclusion: Having regard to all of the above, I am satisfied that the windfarm project has not, and 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 windfarm project has not and 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 & Water (including peat stability)

7.7.1 Project description

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment, the main elements of the project comprised the tree felling and excavation works associated with the turbine foundations and associated infrastructure (including floating roads, access tracks, drainage & underground cabling) within an upland peat environment, along with works at the Agannygal substation, overhead grid connection, and along the haul route, during the construction, operational and decommissioning phases, within the project site and environs.

7.7.2 Locational Context

The Slieve Aughty Mountains cover an area of c.65,000ha in counties Galway and Clare, the c.345ha windfarm site is located in the N section. The site and surrounding lands are underlain by mudstones, siltstones and conglomerates which are covered with a layer of blanket bog. The windfarm site is located on an elevated plateau, the surrounding lands slope up from c.325mOD to c.365mOD, and the slopes mainly range from less than 3 to 7.5 degrees, increasing to 10 degrees in places. The site mainly drains S to the Owendalulleagh River and to a lesser extent to the N to the Boleyneendorrish River. Groundwater movement is localised and reflects the topography of the area. Prior to construction, the windfarm site was mainly occupied by coniferous forestry with some turf cutting. The lands occupied by Agannygal substation (c.190mOD) and overhead grid connection are underlain by a similar geology, they are located within agricultural and forestry areas, and they mainly drain to the Owendululleagh River. There are no recorded Geological Heritage features in the area.

7.7.3 Remedial Environmental Impact Assessment Report

Chapter 10 of the rEIAR and the associated reports and Technical Appendices dealt with land, soil, water and peat stability within the windfarm site, its environs and the wider area from c.1998 onwards. Chapters 9 and 11 dealt with biodiversity and hydrology & hydrogeology, and issues related to water quality and aquatic ecology are assessed in section 7.8 below.

The rEIAR described the underlying geology and overlying soil conditions at the windfarm site, overhead grid connection route and Agannygal substation. It stated that there are no recorded Geological Heritage sites or historic evidence of bog slides or peat instability within the site or surrounding area. It noted that the original pre-construction site survey works for the 3 x windfarms were not extensive and that the surveys were compounded by poor ground conditions and restricted access due to the forestry coverage, and few mitigation measures were proposed.

Subsequent site investigations after the peat slide event were more thorough and included a range of desk-top and field investigations from 2004 onwards. Desktop studies included a review of technical reports, historic aerial photography, LiDAR and other available datasets from relevant agencies (including GSI, EPA & OSI). Several field surveys, site investigations and detailed analysis were undertaken for the various phases (including extensive peat depth probes, slope angle measurements, vane-shear testing, rotary core holes to establish bedrock depth, piezometers to record groundwater levels, and various lab tests to classify peat). Several Peat Stability Risk Assessments (PSRAs) were undertaken for the various phases at a range of project locations (including turbines, met masts, substation, floating roads, barrages, peat depositories & adjacent turf cutting areas). A retrospective PSRA was carried out for the early construction phase including the site of the 2003 peat slide. Further detailed field investigations were undertaken between 2003 and 2019.

The rEIAR identified and described the nature, scale, magnitude, and duration of the impacts that occurred during the construction, (before & after the peat slide event) and operational phases on geology and soils. It concluded that the peat slide impacts during the early construction phase were significant and adverse in the

absence of mitigation measures, but that the peat later stabilised, and the lands regenerated. There were no significant changes to the design and layout of the windfarm project after the peat slide event. The rEIAR concluded that any impacts that occurred during the later construction phase would not have been significant or adverse, subject to the implementation of mitigation measures (including site management, management of works on slopes [excavations, drainage & trees felling], and evaluation, testing & use of floating roads), and that any impacts would have been minor, temporary, and short term in duration. It reached a similar conclusion in relation to the operational and decommissioning phases.

The rEIAR did not identify or predict any significant adverse cumulative impacts during any of the phases in-combination with other plans and projects in the wider area, having regard to its remote location. It did however note that nearby seasonal mechanical turf cutting could give rise to localised peat instability and a potential resultant threat to windfarm infrastructure in the absence of mitigation (including liaising with turf cutters).

7.7.4 Existing wind farm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type, and the details of are summarised in section 1.4 above. The construction phase (including tree felling and peat excavations) commenced in early 2003, the peat slide event occurred in October 2003, and construction work recommenced in 2004 following extensive site investigations. The existing windfarm project has been operational since c.2006.

7.7.5 Policy Context

The Wind Energy Guidelines 1996 and 2006 (and 2019 Draft Amendments) note the need carry out site suitability investigations and the relevant previous and current County Galway Development Plans (1997-2003, 2003-2009 & 2015-2021) seeks to ensure compliance with the various Guidelines.

7.7.6 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area over a 3-day period in February 2021. I had regard to the relevant rEIAR studies which are summarised in section 7.7.3 above. I also had regard to the concerns raised by the Observers which are summarised in section 5.0 above (including South Galway Flood Relief Committee, Friends of Derrybrien Environment & Martin Collins) in relation to impacts of the works (including tree felling & excavations) which related to peat stability and water quality, and I had regard to the applicant's response to these concerns. I also had regard to relevant national, regional, and local planning policy, which is summarised in section 4.0, and to the presence of an operational windfarm on the site. The windfarm project is located within an upland area which mainly comprised conifer plantations underlain by blanket bog, there is a small lake in the middle of the site, and turf cutting areas in the SE section of the overall lands.

According to the GSI Landslide Susceptibility Maps, the risk of landslides is mainly Low across the entire site, except for the N and SE sections which are identified as Moderately Low. Most of the turbines are located in areas where the risk is identified as Low, however T68 (where the peat slide originated) and adjacent turf cutting areas to the SE are located close to, or within an area that is identified as Moderately Low risk. There was no history of significant landslides or peat slippages in the surrounding area prior to the 2003 peat slide event.

The site elevations range from c.325mOD to c.365mOD. Gradients do not vary greatly across the site and slopes mainly range from c.3.0 to 7.5 degrees, but up to c.10 degrees in places, however the lands to the S of the site are noticeably steeper. The area is characterised by degraded peat underlain by bedrock and peat depths are generally proportional to slope angles (i.e. deep peat on shallow slopes & shallow peat on steeper slopes).

Peat depths vary across the site from c.1.0m to 6.0m although depths exceed 6.0m in a few locations and areas of deeper peat (>4.0m) are mainly located in the N and SW sections of the site. Peat depths in the vicinity of T68 (where the peat slide originated) were c.2.0m to 4.0m whilst the depths to the immediate S are c.1.0m to

2.0m, and c.3.0m to 4.0m to the SE. It is noted that the shallower depth to the immediate S of T68 may be as a result of the peat slide. The various shear strength tests indicate that peat strength is generally low across the site (c.4.5 to 6.0kPa) and especially low in the vicinity of T68 where the peat slide originated (c.3.5pKa).

The overall excavation works gave rise to c.184,190m3 of peat and spoil (from the turbine foundations, borrow pits, substation & met masts) which was stockpiled within the site and stored in peat repositories and borrow pits. The unregulated excavation, stockpiling and construction work, particularly on steep slopes and in areas of deep peat, had the potential to cause peat instability and slippage, with resultant serious adverse impacts on the environment. The works also had the potential to affect peat hydrology, drainage patterns, water quality and aquatic ecology in the surrounding area (refer to sections 7.8 & 7.9 below for a more detailed assessment).

The works associated with the windfarm project (including the 2003 peat slide event) had the potential the affect the peatland environment during the various construction, operational and decommissioning phases, which will be assessed below.

Construction phase - before peat slide event:

Construction works commenced in 2003. The early stages of the construction phase included the felling of coniferous forestry (which continued throughout the construction phase - c.220ha in total), the excavation of peat and rock at several of the turbine and infrastructure locations (including the borrow pits), and the installation of floating roads. Although there were some minor instability occurrences within the site in early October 2003 related to a local bearing failure under side cast material (T17 T23 & T29) and a small-scale slide (T17), no significant adverse impacts on peat stability occurred.

Construction phase - peat slide event:

The peat slide event occurred in late October 2003. It happened in the vicinity of T68 in the S section of the site. It affected c.450,000 tonnes of peat over a c.25ha area and resulted in the slippage of c.250,000 tonnes over a distance of c.3km downgradient of the site. The resultant down gradient effects were exacerbated by

subsequent heavy rainfall and the scale of the slippage extended further down gradient to the Owendululleagh River over a total distance of c.5km. The peat slide is believed to have been caused by the interaction of several factors including environmental conditions (peat depth, slope angle, orientation, proximity to watercourses & changes to groundwater conditions), previous damage to peat integrity caused by forestry activities (including drainage), the weight of excavated peat that was stockpiled downslope of T68 on a steeper gradient, underlying and undetected forestry drains, and possible fissures in peat structure at this location.

The retrospective PSRA characterised the relative risk of peat instability in the 1998 baseline year across the entire site as Possible to Likely prior to construction in the absence of mitigation measures. It identified 38 zones where the likelihood of a peat slide was Very Possible or Likely relative to compounding environmental risk factors. It identified several zones where there was a likelihood of instability, including within the vicinity of the 2003 peat slide area (T17, T68 & T21-T70) in relatively deep peat, on a convex breaking slope and directly upslope from watercourses on the S side of the site. The report noted that the results would not be considered an abnormal or exceptional risk for a windfarm project in an upland blanket bog, and that they would now be used to inform the design of mitigation measures to protect stability.

The impact of the 2003 peat slide event on soil and land was profound, significant, adverse and permanent. However, following the implementation of emergency and remedial works to contain the mobilised peat (including several down gradient barrages), the effects on the receiving environment were significant and adverse, but medium term in duration. The affected area gradually stabilised and regenerated over time, as confirmed during my visit to the windfarm site and peat slippage area.

I am satisfied that no significant stability issues arose at the Agannygal substation or along the overhead grid connection of haul routes.

Construction phase – after peat slide event:

Construction works recommenced in 2004. The various site investigations and PSRAs undertaken after the 2003 peat slide event concluded that the risk of further stability issues arising across the site were Negligible to Low after the

implementation of appropriate mitigation measures (related to the management of tree felling, excavation works & drainage on peat slopes). No significant changes were made to the design or layout of the project, although T16 to the immediate W of T68 was omitted and minor amendments were made to the design of the floating roads. Subsequent site investigations and PSRAs up until 2019 concluded that the risk of further stability issues arising across the site was further reduced to Negligible. Site specific PSRAs undertaken at the peat slide source area (T68), containment barrages and floating roads also indicate that these areas are stable with negligible movement.

The later construction phase mitigation measures include detailed design and construction measures for all project elements across the entire site. They included both general and site-specific mitigation measures for works on peat slopes, and proposals to manage peat storage and reuse, and to prevent erosion and peat slides. The measures proved to be successful in terms of mitigating the risk of further peat instability and slippage. I am satisfied that any impacts on geology, soil or peat stability during the later construction phase would not have been significant or adverse, following the implementation of the mitigation measures, and ongoing inspections and monitoring.

I am satisfied that no stability issues arose at the Agannygal substation or along the overhead grid connection of haul routes.

Operational phase:

The windfarm was commissioned in c.2006. The risk of peat instability had reduced to Low/Negligible across the entire site as a result of the implementation of the later construction phase mitigation measures and improved site management and drainage arrangements. The operational windfarm did not and would not have any adverse impacts geology and soils, or given rise to a risk of peat instability. Although the ongoing maintenance works, including the upgrade of c.4.5km of floating roads in c.2014 could have affected site conditions, any risks would have been controlled and managed by a range of mitigation measures similar to those implemented during the later construction phase, along with regular inspections and monitoring. I am

satisfied that any impacts on geology, soil and peat stability would not have been significant or adverse during the operational phase.
There were, and are no discernible impacts on geology, soils or peat stability risks associated with the operation of the Agannygal substation and overhead grid connection.

Decommissioning phase:

The windfarm will be decommissioned in 2040. No significant ground level or below ground level infrastructure (other than cables) will be removed during this phase. However, minor widening works may be required along some of the floating roads to facilitate the removal of turbine components. No significant impacts on geology, soils or peat stability are anticipated during this phase, subject to the implementation of the later construction phase mitigation measures. However, the relevant mitigation measures should be in place before decommissioning works commence and the entire process should be monitored by an on-site Civil Engineer on a regular basis.

I am also satisfied that no stability issues will arise at the Agannygal substation or along the overhead grid connection of haul routes during the decommissioning phase.

Barrage removal:

It is proposed to remove two of the remaining barrages that were installed to stem the 2003 peat slide downgradient of the windfarm site. It is noted that the largest barrage, which is located c.2.5km downslope of T68 and within Coillte lands, has been incorporated into a forestry road and will be retained. The proposed removal of the barrages could release backed up peat sediments with resultant impacts on water quality and aquatic ecology (refer to 7.8.6 below) but no risk to peat stability is anticipated, subject to the implementation of mitigation measures.

Cumulative impacts:

Since the baseline year of 1998, there have been several other plans and projects in the surrounding area that had and have the potential to act in-combination with the windfarm project (including other windfarms, roads, energy, and public infrastructure projects). However, given the remote location of the windfarm project, the separation

distance to any of these projects and the intervening mountainous terrain, I am satisfied that there was, and is limited potential for cumulative impacts on geology, soil and peat stability during the construction, operational and decommissioning phases.

Notwithstanding this conclusion, nearby forestry and turf cutting works may have had, and could have the potential for in-combinations impacts. However, it is important to differentiate between the construction, operational and decommissioning phases of the development, and the potential for resultant cumulative impacts on geology, soil and peat stability in-combination with ongoing forestry and turf cutting activities.

Although tree felling in the surrounding area may have had the potential to act in-combination with the construction phase of the windfarm project in relation to impacts on soil and peat stability, there is no evidence that any significant interactions this occurred. Tree felling in the surrounding area would have had and would continue to have a negligible impact during the operational phase subject to the continued implementation of on-site mitigation measures (other than to affect wind speed & availability).

The rEIAR investigations and site specific PRSAs identified the peat stability risks associated with manual turf cutting on the downslope lands to the SE of the windfarm as Low. However, it identified the stability risks associated with the recently introduced mechanical turf cutting as High, which would be significant but occasional and temporary in duration. It also identified some small areas of slippage in the turf cutting areas. Any peat instability and resultant slippage downgradient of the turbines and floating roads located to the immediate N of the turbary area (including several turbines & connecting access tracks) could have a significant adverse impact on the peatland environment and windfarm infrastructure. The rEIAR mitigation measures, which mainly relate to site management (including drainage), liaising with turbary plot holders and the dissemination of information, would reduce the risk to Low.

In relation to the ***construction phase***, I am satisfied that the impacts of turf cutting would have had a relatively benign cumulative impact in-combination with the large-scale peat excavations associated with the windfarm works, given the modest scale and manual nature of the seasonal turf cutting.

In relation to the ***operational phase***, although both activities may take place simultaneously on an intermittent and seasonal basis (turf cutting), I am satisfied that cumulative impacts associated with the operational windfarm in-combination with the recent use of mechanical turf cutting machines on the site do not arise, as the operational windfarm does not involve the excavation of peat or any other form of disturbance to peat stability. The current position of the operational windfarm within the peatland environment is relatively benign, with no cumulative impacts on soils and peat stability anticipated. However, in the absence of mitigation, mechanical turf cutting has the potential to affect peat stability, give rise to slippage and hence the integrity of the windfarm infrastructure.

In relation to the ***decommissioning phase***, there is some potential for cumulative impacts however this would be minimal due to the proposed retention of most below ground and ground level infrastructure (except for cables) which will not require any significant peat excavations. However, all relevant rEIAR peat stability and turf cutting mitigation measures should be implemented during this phase, and the decommissioning works should not take place during the turf cutting season. The layer could be addressed by way of a planning condition. No significant cumulative impacts area anticipated.

Conclusions: Having regard to the foregoing, following the 2003 peat slide event and resultant adverse impacts on the receiving environment, I am satisfied that the windfarm project did not, and would not give rise to any significant risk of peat instability within, or downgradient of the site during the later construction, operational and decommissioning phases, either on its own or in combination with other plans and projects in the area (including commercial forestry works & turf cutting).

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on land, soil and water (including peat stability) in the surrounding area.

Overall Conclusions:

The localised impact of the 2003 peat slide event on geology, soils and land was adverse and significant. Although the effects on the receiving environment were also adverse and significant, they were temporary and medium term in duration, as confirmed by the ongoing field surveys and site investigations which indicate a gradual stabilisation and recovery of the receiving environment. The later construction phase (after the peat slide event), operational and decommissioning phase mitigation measures are considered acceptable. The mitigation measures prevented and will continue to prevent any risk of significant peat instability in the surrounding area, however, relevant measures should be in place before decommissioning works commence. The results of the various rEIAR desktop, field surveys, site investigations and stability risk modelling exercises are considered to be robust, and I am satisfied that they were broadly undertaken in accordance with relevant guidance for such works at the time they were conducted. Although the excavation of bedrock and peat had a permanent direct impact on geology and soils, the overall effects on the environment would not be significant or adverse.

7.8.7 Conclusions

Residual Effects: The 2003 peat slide event had a localised significant and adverse impact on the peatland environment. However, the windfarm project did not, and would not have any further significant adverse residual impacts, during the construction (post peat slide event), operational and decommissioning phases on the peatland environment and peat stability, subject to the full implementation of the rEIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative impacts during the various phases (past, present & future) 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 impact at project level, and to the remote location of the

windfarm project. It is noted that nearby seasonal turf cutting could have a minor impact on stability as a result of machine cutting which would be short term and temporary in duration, and the risk of instability would be managed by mitigation measures.

Conclusion: I have considered all the written submissions made in relation to geology, soil, land, and peat stability, 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. The 2003 peat slide event had significant localised adverse permanent impact on geology, soil and land, and although the effects on the receiving environment were also significant and adverse, they were also temporary and medium term in duration. I am satisfied that after the 2003 peat slide event and the implementation of mitigation measures, the windfarm project did not, and would not have any significant adverse effects on geology, soil or peat stability during the later construction, operational and decommissioning phases.

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

7.8.1 Project description

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment, the main elements of the project comprise any works that could have caused damage, disturbance or changes to the aquatic environment (including river morphology, riparian habitats, water quality, aquatic ecology, fisheries & flood risk) during the construction, operational and decommissioning phases, within the project site and environs. The construction phase comprised tree felling (c.220ha), excavation works associated with the construction of turbines and associated infrastructure (including floating roads, access tracks, drainage & underground cabling), related works at Agannygal substation and overhead grid connection, and minor works along the haul route.

7.8.2 Locational context

The Slieve Aughty Mountains cover an area of c.65,000ha in counties Galway and Clare, and the c.345ha windfarm site is located in the N section. The surrounding lands slope up from c.325mOD to c.365mOD, the windfarm is located on a plateau, and the slopes mainly range from less than 3 to 7.5 degrees, increasing to 10 degrees in places. The surrounding area is underlain by mudstones, siltstones and conglomerates which are covered with blanket bog.

The underlying bedrock is classified as Poor Aquifer and generally unproductive except for local zones (Pl), there are no mapped fault lines traversing the site, and groundwater movement is localised and reflects the topography of the area. The nearest GSI mapped karst features are located c.5km to the SE of the site. There are no Groundwater Protection Zones or mapped wells within the windfarm site although the houses at Derrybrien depend on a Group Water Scheme and wells for their water supply. According to the OPW's flood maps, there have been no recurring flood incidents within the windfarm site or the surrounding area in recent decades, although some further afield downstream areas to the S and SW have experienced flooding in the vicinity of the Gort Lowlands, and environs.

The windfarm site and surrounding area is characterised by extensive commercial forestry plantations and turf cutting areas, and the site is located within the catchment of 3 rivers. The Owendalulleagh River to the S and the Boleyneendorrish River to the N lie within the Galway Bay South East WFD catchment, and the Duniry River to the E lies within the Lower Shannon WFD catchment. The lands are traversed by a network of drainage ditches and watercourses that mainly drain S to the Owendalulleagh River (c.66%) and hence to Lough Cutra, and to a lesser extent N to the Boleyneendorrish River (c.33%). Both watercourses ultimately discharge to Galway Bay at Kinvarra via an underground karst system. A very small proportion of the site drains E to the Duniry River (<1%) and hence to Lough Derg. The lands occupied by Agannygal substation and overhead grid connection are located within agricultural and forestry areas, and they mainly drain to the Owendululleagh River. The overhead grid connection crosses several watercourses, including the Owendululleagh and the S section of the substation site discharges to Lough Atorick and hence Lower Lough Derg.

There are several protected European and National sites in the wider area which are important for a variety of habitats and species (including wetlands, peatlands, woodlands, caves & turloughs, along with birds, bats & otter). Many of these sites, including the Slieve Aughty Mountains SPA, were proposed and designated as European sites after the original windfarm applications were assessed. The windfarm site has a direct aquatic connection to Lough Cutra SPA and SAC (Cormorant & Lesser horseshoe bat) to the SW via onsite watercourses and the Owendululleagh River over a distance of c.22km. Other sites include Lough Rea to the N, Lough Derg to the E, and Loughs Atorick and Granny to the S, and Galway Bay to the far NW.

Several species of fish including Brown trout, Stone loach, Lampreys, Eel, Perch and Gudgeon, were known to frequent the surrounding watercourses including the Owendalulleagh River. There is a single historic record of the presence of Freshwater pearl mussel far downstream of the Agannygal substation site in the vicinity of Lough Atorick. Otter is known to commute along the Owendalulleagh River and its tributaries. Lough Cutra provides a habitat for a myriad of invertebrate species which are preyed upon by Lesser horseshoe bat, a QI species for the SAC.

7.8.3 Remedial Environmental Impact Assessment Report

Chapters 8 and 11 of the rEIAR and the associated reports and Technical Appendices dealt with aquatic ecology and fisheries, and hydrology and hydrogeology within the windfarm site, its environs and the wider area from c.1998 onwards. Chapter 10 dealt with soils, geology and land, including peat stability which is assessed in section 7.7 above. Several desktop studies were reviewed (including the previous windfarm EISs, technical reports, maps, aerial photography & available datasets from relevant agencies including the EPA & Fisheries Boards). Further detailed field surveys were undertaken between 2011 and 2020 (which included electrofishing & Q-value assessments). The relevant designated sites that have an aquatic connection to the windfarm project and peat slide area were identified.

The rEIAR described the location and environmental sensitivities of the windfarm project, grid connection route and Agannygal substation, and the spatial relationship with several sensitive aquatic sites. It had regard to the WFD and EPA water quality reports and studies, OPW Flood Maps, the GSI groundwater database and IFI fisheries surveys. A range of desk-top and field investigations were reviewed and/or undertaken including hydrological walkover surveys and detailed drainage mapping; biological and chemical surveys; habitat and ecological assessments for fisheries and aquatic invertebrates; an identification of flood risk; along with an examination of groundwater quality, flow paths and wells. The rEIAR also analysed rainfall data relative to site conditions and peat characteristics along with forestry, turf cutting and windfarm drainage arrangements. It examined potential cumulative impacts in combination with several other plan and projects in the wider area including windfarms, forestry works, turf cutting and infrastructure projects (including public water supplies and flood relief works). It stated that EPA water quality ratings for most of the watercourses before the 2003 peat slide event were between Q4 and Q5, that the Q-values fell significantly after the peat slide in downstream watercourses, but gradually improved to Q4 and Q5 several years after the event.

The rEIAR described the nature, scale, magnitude and duration of the impacts that occurred during the construction, (before & after the peat slide event) and operational phases on water quality, aquatic ecology, fisheries, river morphology and flooding. It concluded that the peat slide impacts during the early construction phase

were significant and adverse but temporary and short term. It concluded that any impacts that occurred during the subsequent construction and operational phases would not have been significant or adverse, subject to the implementation of mitigation measures (including sediment traps, interceptor drainage, attenuation ponds, no direct discharge to drains, controlled refuelling, no concrete mixing & monitoring), and that any impacts would have been minor, temporary, and short term in duration. It reached a similar conclusion in relation to the decommissioning phase. The rEIAR did not identify or predict any significant adverse cumulative impacts during any of the phases in-combination with other plans and projects in the wider area, although it noted that nearby deforestation and peat cutting could affect water quality a result of nutrient release from peatland soils into drains and watercourses.

7.8.4 Existing wind farm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type, and the details of are summarised in section 1.4 above. The existing windfarm project has been operational since c.2006.

7.8.5 Policy Context

European and National legislation and guidance provide a framework for the protection and enhancement of ground and surface water quality, and the protection of sensitive, endangered, or threatened aquatic habitats and species, along with measures to assess flood risk. (Not all of which were in place during the consideration of the original windfarm applications). The relevant previous and current County Galway Development Plans (1997-2003, 2003-2009 & 2015-2021) contain a range of policies and objectives for the protection and management of ground and surface waterbodies and natural heritage sites, to assess flood risk, and to ensure compliance with European and National legislation and guidance. Several of the aquatic European and National sites in the surrounding area were proposed for designation after the 3 x windfarms were permitted (refer to section 4.6 above), and any subsequent designations were reflected in later Plans.

7.8.6 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area and the wider environment in County Galway and County Clare over a 3-day period in February 2021. I had regard to the relevant rEIAR desktop studies and field investigations which are summarised in section 7.8.3 above. I also had regard to the concerns raised by the Observers which are summarised in section 5.0 (including IFI, South Galway Flood Relief Committee, Friends of Derrybrien Environment & Martin Collins) in relation to the impact of the works (including peat excavations & deforestation) on water quality, aquatic ecology, fisheries, designated sites and flooding, and I had regard to the Applicants' response to these concerns. I also had regard to relevant national, regional and local planning policy which is summarised in section 4.0 and to the presence of an operational windfarm on the site.

During the construction phase, the tree felling, peat excavations, movement and stockpiling of large quantities of peat and spoil around the project site had the potential to release fine sediments into the network of streams and drains that traverse the site via surface water runoff, and hence to larger watercourses and waterbodies in the surrounding area. The unregulated release of sediments and nutrients could have had an adverse impact on water quality and aquatic ecology within and downstream of the site. This could have given rise to impacts on the chemical and biological balance of waterbodies and watercourses, and also aquatic ecology (including habitats, plants, mammals, invertebrates and fisheries). Works close to drains and watercourses could have had a physical impact on river morphology. Accidental fuel spillages from storage areas, machinery and vehicles had the potential to contaminate surface and groundwater. Works along the grid connection and haul routes also had the potential to release sediments into nearby watercourses. However, the unanticipated mass movement of c.250,000 tons of peat and forestry debris as a result of the 2003 peat slide event would have seriously exacerbated the aforementioned impacts on the aquatic environment to a considerable extent.

During the operational phase, the impacts were, and would be mainly confined to those associated with routine maintenance and upgrades of the access tracks, which

had the potential to affect surface and ground water quality as a result of unmitigated sediment release and accidental fuel spillages from storage areas, machinery and vehicles. During the future decommissioning phase, the potential impacts would be similar to during the operational phase. However, the proposed retention of most ground level and below ground level infrastructure (except for the underground cables), would limit the potential for significant sediment release during the works.

The rEIAR contains a suite of mitigation measures which were used, are used and will be used to control and manage the release of fine sediments and hydrocarbons into surface and ground water to prevent pollution of nearby watercourses and underlying groundwater bodies during the various phases. These measures are summarised in section 7.8.3 above and they mainly relate to management of sediments by various means along with inspections and water quality monitoring.

The rEIAR and associated reports and Technical Appendices also contain the results of extensive water quality and ecological surveys which have been ongoing since c.1998. The surveys covered the windfarm site, Agannygal substation and overhead grid connection route, along with the surrounding watercourses and waterbodies that the lands drain into. The surveys did not record the presence of any sensitive aquatic plant or animal species within the on-site lake or on-site watercourses. However, several species of fish (including Brown trout, Stone loach, Lampreys, Gudgeon & European eel) frequent the Owendalulleagh River and its tributaries downstream of the site, and these watercourses contained suitable spawning and nursery habitat for some species. The surveys also recorded evidence of foraging Otter along the Owendalulleagh River and its tributaries, a myriad of aquatic invertebrate species along the watercourses and at Lough Cutra, and there was reference to a single historic record of Freshwater Pearl Mussel located far downstream of the Agannygal substation close to Lough Atorick. No protected pant species were recorded.

The works associated with the windfarm project (including the peat slide event) clearly had the potential to affect the aquatic environment during the various construction, operational and decommissioning phases, which will be assessed below under several headings.

Construction phase – before peat slide event:

Construction works commenced in 2003. The early stages of the construction phase included tree felling (which continued throughout this phase) and the excavation of peat at several of the turbine and infrastructure locations (including floating roads). There was an increased risk of water pollution from suspended solids at these locations as a result of the excavations, and from hydrocarbons as a result of accidental spillages from plant and machinery. Furthermore, the early construction phase of the project had few mitigation measures to control and manage any resultant risks. It is possible that the early construction phase works could have affected water quality and aquatic ecology, however given that this phase was not of a prolonged duration prior to the peat slide event, it is likely that any impacts would have been temporary and short term in duration.

Construction phase - peat slide event:

The peat slide event occurred during the early part of the construction phase in October 2003, and it resulted in the mass movement of c.250,000 tons of peat and forest debris in a SE direction from the S section of the site (close to T68). The slide is believed to have been caused by the interaction of several environmental factors including the weight of excavated peat that was stockpiled downslope of T68 on a steeper gradient. The event was later exacerbated by heavy rainfall. The liquid peat flowed SE from the site through a forestry plantation towards the southernmost bridge along Black Road, SE towards Flaggy Bridge along the R353 and then S along a watercourse channel (and environs) towards the Owendululleagh River c. 5km to the S of the source of the slide. The emergency works included the installation of several barrages' downslope of the windfarm site to stem the flow of debris, and the provision of peat repositories.

The peat slide event undoubtedly caused profound environmental damage downslope of T68. The upper reaches of several small watercourses were either obliterated or badly scoured. Liquid peat and forest debris was deposited along the banks and on the bed of the Owendululleagh River and its tributaries. Suspended sediments settled within and travelled along the Owendululleagh River to Lough Cutra c.22km to the SW, and fine sediments were detected in Kinvarra Bay to the far NW via a network of surface and groundwater bodies (rivers & turloughs).

The peat slide event had a significant adverse impact on river morphology immediately downslope of T68, water quality (biological & chemical) and aquatic ecology (riparian habitats, fisheries, invertebrates & plant life). It resulted in a substantial fish kill that affected at least 6 x species of fish (Brown trout & Stone loach were the most severely affected), and it adversely affected riverbed morphology by way of scouring (in the upper reaches) and smothering, with resultant impacts on future fish breeding and nursery habitats, and invertebrate species.

Although suspended peat sediments reached Kinvarra Bay to the NW there was no resultant significant impacts on water quality at the Gort treatment works (other than discoloration) and the public water supply was not severely interrupted. Any fine peat sediments deposited in underground would have been flushed out over time.

EPA water quality ratings for most of the watercourses before the 2003 peat slide event were between Q4 and Q5 and they fell significantly after the event downstream in the Owendululleagh River and its tributaries. Several subsequent field surveys in the years after the peat slide event (c.5-7 years) indicate a gradual return to between Q4 and Q5 water quality status in most of the affected watercourses and a gradual return of all 6 x species of fish in line with their own individual lifecycle stages. The various rEIAR Bat Surveys at Lough Cutra indicate that there was no significant loss of invertebrate prey species for Lesser horseshoe bat, or prey species for Cormorant in the lake as a result of the peat slide event (QI & SCI species for the Lough Cutra SAC & SPA).

Having regard to the nature, scale and magnitude of the 2003 peat slide event, I am satisfied that the impacts on river morphology, riparian habitats, water quality, aquatic ecology and fisheries were profound, adverse and significant. However, the spatial extent of the impacts was contained and managed by the emergency construction of several barrages (and other remedial works) which stemmed the flow of liquid peat and forest debris, and the severity of the impact would have reduced with distance. The field surveys undertaken in the immediate aftermath of the event and in the subsequent years, indicate that the affected environment recovered over several years. The riparian bankside habitats have largely regenerated. Although there is some evidence of residual fine peaty sediments on some sections of

riverbed, the EPA water quality Q-ratings have risen to at least Q4 in most of the affected downstream watercourses. The 6 x species of affected fish have gradually returned to the Owendululleagh River and its tributaries, and there is evidence of spawning activity. Having regard to the foregoing, I am satisfied that the significant adverse impacts caused by the peat slide event on river morphology, water quality, aquatic ecology and fisheries were therefore profound, but temporary and medium term in duration.

I am also satisfied there would have been no significant long term residual adverse impacts on ground water quality or any public or private water supplies in the surrounding and wider area.

Construction phase – after peat slide event:

Construction works resumed in 2004. T16 (to the W of T68) was omitted as similar site conditions were identified in the extensive surveys that were undertaken for the overall site following the 2003 peat slide event. There was a risk of water pollution from suspended solids at the turbine locations and associated infrastructure including floating roads and underground cabling as a result of the works (including from peat excavations, sediment release, concrete use, accidental spillages & drainage arrangements). This would have been controlled and managed by a range of mitigation measures that were implemented during this phase (including sediment traps, interceptor drainage, attenuation ponds, no direct discharge to drains, controlled refuelling, no concrete mixing on site & monitoring). I am satisfied that impacts would not have been significant or adverse during the later construction phase following the implementation of mitigation measures and ongoing inspections and monitoring. Any impacts would have been minor, temporary and short term.

There could have been a risk of localised water pollution from suspended solids during the construction of the Agannygal substation along sections of the overhead grid connection and haul route close where works were required close to watercourses. However, the range of mitigation, inspection and monitoring measures would have ensured that there were no significant adverse impacts at any of these locations. Any impacts would have been minor, temporary and short term in duration.

Operational phase:

The windfarm was commissioned in c.2006. There was a continued risk, although of significantly lesser magnitude, of water pollution arising from suspended solids at maintenance locations and accidental spillages from vehicles, and in particular during upgrade of c.4.5km of floating roads in c.2014. This would have been controlled and managed by a similar range of mitigation measures (including sediment traps, interceptor drainage, no direct discharge to drains, controlled refuelling, no concrete mixing on site, regular inspections & monitoring). I am satisfied that impacts would not have been significant or adverse during the operational phase and any impacts would have been minor, temporary, and short term in duration. There were and are no discernible impacts associated with the operation of the Agannygal substation and overhead grid connection.

Decommissioning phase:

The windfarm will be decommissioned in 2040. Most of the ground level and below ground level infrastructure will be retained during the decommissioning phase (except for the underground cables) with no significant impacts on water quality or aquatic ecology anticipated. The removal of underground cables, increased vehicular movements and minor works to widen sections of the floating roads could adversely affect water quality. However, the proposed range of water protection and sediment control mitigation measures would ensue that no significant adverse impacts on water quality and aquatic ecology occur.

Barrage removal:

It is proposed to remove two of the remaining barrages that were installed to stem the 2003 peat slide. The largest barrage, which is located downslope of T68 and within Coillte lands, was incorporated into a forestry road, would be retained. The removal of the barrages could release backed up sediments into watercourses with resultant potential impacts on water quality, aquatic ecology, and fisheries, which could be adverse, although short term and temporary. The rEIAR sediment control mitigation measures would be in place and operational before works to remove the barrages commence, however, the entire process should be monitored by an on-site Ecologist. This issue could be addressed by way of a planning condition.

Groundwater & karst features:

Having regard to the relatively impermeable underlying geological characteristics of bedrock, the PI status of the underlying aquifer, the absence of any fault lines traversing the site or karst features in the vicinity and the of the extensive covering of deep blanket peat, I am satisfied that the windfarm project did not, and would not have a significant adverse impact on groundwater reserves in the surrounding area.

The concerns raised by the Observers (including the South Galway Flood Relief Committee) in relation to the deposition of fine peat sediments in the underground karst network to the far NW of the windfarm site in the aftermath of the 2003 peat slide event are noted. However, I am satisfied that any such deposits would have been gradually flushed out of the system over time, and that any impacts would have been temporary and short term in duration. In relation to the later construction phase and the operational and decommissioning phases, I am satisfied that the windfarm project did not, and would not give rise to any significant ground water pollution or damage to any underground karst features, either on its own or in combination with other plans and projects in the area (including commercial forestry works & turf cutting).

Flood risk:

The concerns raised by the Observers (including South Galway Flood Relief Committee, Friends of Derrybrien Environment & Martin Collins) in relation to down gradient flooding at a number of locations, including Dereen and Beagh to the S and Gort to the W are noted, as is the applicant's response to these concerns.

The rEIAR Flood Risk Assessment was carried out in accordance with the 2009 Guidelines and after the construction phase was completed. The FRA was undertaken to assess the overall impact of the project, to provide an overview of potential flood risks at the project locations (windfarm site, overhead grid connection & Agannygal substation) and to assess the flood risk impact downgradient of the works. It referenced OPW and EPA datasets and it identified downstream areas at risk of flooding (including Ballylee to the N & Gort to the W). It stated that ground water levels have gradually fallen across the entire site at variable rates in the years after the construction phase, but that levels have stabilised since c.2012, with no

resultant adverse impacts on downstream locations. The windfarm project mainly lies with in Flood Zone C (Low Risk of flooding), and although prone to pluvial flooding no adverse on-site or downstream impacts were identified.

During the early ***construction phase***, the 2003 peat slide event would have resulted in the release of peat laden water with resultant impacts on river morphology in the upper reaches of affected watercourses and an increased risk of downgradient flooding would have arisen. However, I am satisfied that although the flood risk impacts could have been significant and adverse at the time, they were also temporary and short term in duration. During the later construction phase there would have been potential for an increase in surface water runoff as a result of tree felling, excavations and construction works, however this would have been managed, controlled and monitored by the rEIAR mitigation measures.

During the ***operational phase***, there was, and would be a marginal increase in surface water runoff as a result of more impermeable surfaces (including at the turbine hardstandings, floating roads and substation), although the effects would diminish with distance. I am satisfied that, any increase over baseline conditions was, and would be within acceptable parameters. It is noted that are no OPW recorded flood events in the surrounding area. The windfarm site accounts for a small proportion of the Slieve Aughty Mountains (c.345ha of c.65,000ha), the site and environs are mainly drained by 2 x extensive river catchments (Owendalulleagh & Boleyneendorrish), and there is a substantial hydrological distance between the windfarm site and any downstream locations that have experienced flooding. I am therefore satisfied that the windfarm project did not, and would not pose a risk of, or contribute to any significant down gradient flooding during the later construction and ongoing operational phases.

The ***decommissioning phase*** would not give rise to any significant increase in surface water runoff, given that most of the ground level and below ground level infrastructure would remain in-situ, with a neutral impact anticipated, subject to the implementation of water protection mitigation measures.

Conclusions: Having regard to the foregoing, I am satisfied that the windfarm project did not, and would not give rise to any significant risk of flooding within or downstream of the site during the later construction, operational and decommissioning phases, either on its own or in combination with other plans and projects in the area (including commercial forestry works & turf cutting).

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on biodiversity and land soil and water (including aquatic ecology) in the surrounding area.

Overall Conclusions:

The impact of the 2003 peat slide event on river morphology, riparian habitats, water quality, aquatic ecology and fisheries was profound, adverse and significant, but also temporary in the medium term duration as ongoing field surveys indicate a gradual recovery of the aquatic environment. The later construction phase (after the peat slide event) operational and decommissioning phase mitigation measures are considered acceptable. They would have prevented and will continue to prevent any serious long-term damage to water quality and aquatic ecology in the surrounding area. However, erosion and sediment control measures should be operational before decommissioning works commence and the entire process should be monitored by an on-site Ecologist on a regular basis. The results of the various rEIAR desktop and field surveys in relation to the aquatic environment are robust. I am also satisfied that the various rEIAR studies were undertaken broadly in accordance with the relevant national and international guidance for such works.

7.8.7 Conclusions

Residual Effects: The 2003 peat slide event had profound and significant adverse impacts on water quality, river morphology, riparian habitats, aquatic ecology and fisheries, which were medium term and temporary in duration. However, the windfarm project did not, and would not have any further significant adverse residual impacts, during the construction (post peat slide event), operational and future decommissioning phases on water quality, river morphology, riparian habitats,

aquatic ecology or fisheries, subject to the full implementation of the rEIAR mitigation measures and any recommended conditions.

Cumulative Impacts: Any cumulative impacts during the various phases (past, present & future) 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 no significant adverse impacts at project level (post the 2003 peat slide event). It is noted that nearby forestry works and turf cutting could have a minor cumulative impact on water quality a result of sediment and nutrient release from peatland soils into drains and watercourses. Such impacts would be periodic for forestry and seasonal for turf cutting, and any cumulative impacts would be minor, short term and temporary in duration.

Conclusion: I have considered all the written submissions made in relation to water quality, aquatic ecology and fisheries, 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. The 2003 peat slide event had profound and significant adverse impacts on water quality and aquatic ecology. However, I am satisfied that after this event, the windfarm project did not, and would not have any significant adverse effects during any of the phases (later construction, operational & decommissioning).

Overall conclusion:

Having regard to the foregoing, and notwithstanding the significant adverse impacts caused by the 2003 peat slide event which were medium term and temporary in duration, I am satisfied that the windfarm project did not, and would not have any further significant adverse impacts, during the construction (post peat slide event), operational (past, present & future) and decommissioning phases, or any long-term residual impacts on water quality, aquatic ecology or fisheries, subject to the full implementation of the rEIAR mitigation measures and any recommended conditions. The windfarm project has not and would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, plans or projects in the wider area, or any nearby forestry works and seasonal turf cutting.

7.9 Biodiversity (Terrestrial ecology - excluding birds)

7.9.1 Project description

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment (terrestrial ecology - excluding birds), the main elements of the project comprise any disturbance to terrestrial habitats, flora and fauna caused by the tree felling, peat excavation and construction works or future decommissioning works, within the site and environs, and any disturbance caused to mobile species by the turbines and met masts during the operational phase.

7.9.2 Locational context

As previously stated, the c.345ha windfarm site occupies a remote upland location in the N part of the Slieve Aughty Mountains and the surrounding area is characterised by extensive commercial forestry plantations, disturbed blanket bog and turf cutting areas. Some 220ha of commercial forestry was felled to accommodate the windfarm project. The lands are traversed by a network of drainage ditches and streams that mainly drain S to the Owendalulleagh River and to a lesser extent N to the Boleyneendorrish River. There are 2 x operational and permitted windfarms in the wider area at Sonnagh Old to the N and Keelderry to the W. The Slieve Aughty Mountains were proposed and designated as an SPA (for Hen Harrier & Merlin) after the windfarm was constructed, and there are several protected European and National sites in the wider area (including Lough Cutra SAC & SPA to the SW), and it is possible that mobile species from further afield sites visit the windfarm site and environs. The lands occupied by Agannygal substation to the S are located within a rural area with surrounding forestry plantations. The overhead grid connection traverses a mix of forestry, blanket bog and agricultural land over a steep downward slope, and it crosses several watercourses including the Owendululleagh River.

7.9.3 Remedial Environmental Impact Assessment Report

Chapter 7 of the rEIAR and associated Technical Appendices dealt with Biodiversity (and terrestrial ecology) within the windfarm and substation sites, the surrounding area, along the overhead grid connection and haul routes. Desktop studies and field surveys were undertaken between 2003 and 2020 which were used to inform the conclusions of the rEIAR and rNIS. This included general habitat surveys and monitoring of habitat recovery within the peat slide area along with several bird and bat surveys (ongoing since c.2003). The rEIAR identified sensitive sites (SACs, SPAs & NHAs and their date of designation) and species located within the Zone of Influence of the windfarm project (15km for terrestrial & 45km for aquatic). It mapped habitats, identified plant species and conducted field surveys for several animal species (including Otter, birds & bats).

The rEIAR identified potential impacts during the construction (before and after the 2003 peat slide event), operational and decommissioning phases. It identified several potential adverse impacts including habitat loss and disturbance within the footprint of the works and disturbance to various plant and animal species and collision risk with operational turbines and overhead cables for birds and bats. It noted that the impact of the peat slide event on terrestrial ecology was adverse, short term, temporary and localised. It concluded that there would be no significant adverse impacts on any nationally designated sites, habitats or species (non-aquatic) subject to the implementation of mitigation measures (including seasonality & timing of maintenance works, turbine curtailment, bird flight diverters along the overhead power line and ongoing monitoring for birds and bats). The rEIAR concluded that there were and would be no significant long term adverse residual or cumulative impacts on terrestrial ecology in-combination with other plans, projects, or windfarms in the wider area.

7.9.4 Existing wind farm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type, and the details of are summarised in section 1.4 above. The existing windfarm project, which comprise 70 x turbines (c.75m tip height) and 2 x met masts (c.49m high), along with an overhead grid

connection (c.7.8km long), has been operational since c.2006. The Slieve Aughty Mountains SPA was proposed and designated after the windfarm was constructed and commissioned.

7.9.5 Policy Context

European and National legislation provide a framework for the protection of sensitive, endangered, or threatened habitats and species. The relevant previous and current County Galway Development Plans (1997-2003, 2003-2009 & 2015-2021) contain a range of policies and objectives for the protection and management of natural heritage sites (including SACs, SPAs, NHAs & Nature Reserves) and to ensure compliance with European and National legislation. It is noted that the Slieve Aughty Mountains SPA and many of the other European sites and NHAs in the surrounding area were proposed for designation after the 3 x windfarms were permitted and constructed (refer to section 4.6 above) and that the designations were reflected in the later Development Plans and Wind Energy Strategy

7.9.6 Assessment

As previously stated, I surveyed the wind farm site, the surrounding area over a 3-day period in February 2021. I had regard to the relevant rEIAR ecological studies which are summarised in section 7.9.3 above and the concerns raised by the Observers which are summarised in sections 5.0 (including Friends of Derrybrien Environment & Martin Collins). Their concerns related to European sites and protected species (birds and bats) and I had regard to the Applicant's response to these concerns. I also had regard to relevant national, regional, and local planning policy which is summarised in section 4.0 and to the presence of an operational windfarm on the site. The impact of the proposed works on aquatic ecology is assessed in section 7.8 above, the impact on birds is assessed in section 7.10 below, and issues related to European sites are addressed in Section 8.0 (remedial Appropriate Assessment).

The windfarm project is located within the extensive Slieve Aughty Mountains SPA, which was designated after the windfarm was assessed and constructed, and close to sections of the Slieve Aughty Bog NHA. The surrounding area is mainly

characterised by a mix of disturbed blanket bog and forestry plantations. The windfarm site comprises a mix of disturbed peatland habitats, conifer plantations, turf cutting areas and a small centrally located Dystrophic lake. The excavation and construction works would have resulted in the inevitable loss of parts of these habitats however, the proposed decommissioning works will retain most ground level and below ground level infrastructure (except for cables). The windfarm site and environs are frequented by several animal species including Otter, and several species of birds and bats. The windfarm project had and would have the potential to affect several species during the construction (including the peat slide event), operational and decommissioning phases.

European sites: The windfarm project is located within the Slieve Aughty Mountains SPA (Hen harrier & Merlin) and it has aquatic connections to Lough Cutra SAC and SPA (Lesser horseshoe bat & Cormorant) via onsite watercourse and the Owendalulleagh River, and hence Galway Bay SAC and SPA. There are several other designated SAC and SPA sites in the wider area (including bogs, turloughs, lakes, woods & caves). The Slieve Aughty Mountains was proposed for SPA designation in March 2007 (Statutory Instrument 21/03/12) which was after the windfarm was assessed, constructed and commissioned. Issues related to European sites are addressed in Section 8.0 below.

Natural Heritage Areas: There are 4 x NHAs and 19 x pNHAs within the Zone of Influence of the windfarm project including Slieve Aughty Bog NHA which comprises several discrete bogland sites. The windfarm project is not located within any of these sites, although a single angle mast for the overhead grid connection is located along the boundary of one of the sites, but at a remove from the bog, with no resultant adverse impacts on the Slieve Aughty Bog NHA (past, present, or future).

***Habitats*:**

The rEIAR states that habitat surveys have been ongoing since 2003, including monitoring of the peat slide area. The windfarm site was originally occupied by conifer plantations and peatland habitats (Cutover bog & Upland Blanket Bog) with a small Dystrophic lake in the centre of the site. The peat slide area was also characterised by conifer plantations and peatland habitats (remnant Wet Heath &

Wet grassland). The windfarm works resulted in the felling of c.220ha of conifer forestry and the excavation of substantial areas of peatland to accommodate the turbines and associated infrastructure. The peat slide affected c.450,000 tonnes of peat over a c.25ha area and resulted in the mass movement of c.250,000 tonnes of material down gradient.

Although the construction works and peat slide event would have resulted in a significant loss of and disturbance to peatland habitats, the loss of any remaining fragments of Annex 1 habitats (Blanket bog, Wet heath & Wet grassland) would have been minimal, having regard to the already disturbed nature of the area as a result of forestry works. The operational phase has not given rise to any adverse impacts on terrestrial habitats, and it was noted during my site inspection that the open nature of the site provides foraging opportunities for several species of animal (including birds & bats) and that the lands (including the peat slide area) are regenerating. Most ground level and below ground level infrastructure (except for underground cables) would be retained during the decommissioning phase with no significant adverse impacts on habitats anticipated. In the long term, it is also possible that the peatland habitats could be restored in the future after decommissioning.

There is a myriad of other habitats located in the vicinity of the overall windfarm project, including along the haul routes and the overhead grid connection to the Agannygal substation, which could have been marginally affected during the construction phase. However, I am satisfied that there would not have been any significant loss of, or damage to these habitats having regard to the scale of the works, that there are no operational phase impacts, and that there would be no significant adverse impacts during the decommissioning phase.

The excavation and construction work also had the potential to adversely affect the surrounding peatland environment and sensitive habitats by way of disturbance to peat morphology and hydrology. These issues are addressed in sections 7.7 and 7.8 above in relation to peat stability, water quality and aquatic ecology.

Flora: None of the plant species recorded within or around the site during previous and current surveys are listed under the Wildlife Acts or covered by a Flora (Protection) Order.

Mammals:

The rEIAR noted the previously recorded presence of Sika deer, fox, mountain hare, badger and stoat in the original EISs for the 3 x windfarm applications, the bat monitoring survey noted the presence of Pine martin on the site in in 2020, and Badger and Red squirrel are likely to forage in the area. The rEIAR noted the recorded presence Otter along a tributary of the Owendalulleagh River at Flaggy Bridge downstream of the site during Fisheries Board and OPW surveys in 2003 and 2004 (after the peat slide event), and along the Owendalulleagh and Boleyneendorrish Rivers in the rEIAR surveys of the site and environs in 2018. The rEIAR did not undertake any other dedicated large mammal surveys having regard to the habitat characteristics of the site. Although the construction works and peat slide event would have resulted in disturbance and displacement during the construction phase, any affected species would have gradually habituated to the operational windfarm. The forestry clearance works would have also resulted in the creation of significant new foraging grounds for many species.

Otters would have been adversely affected by the 2003 peat slide event which had a significant impact on water quality, river bank morphology and fisheries downstream of the site in the Owendalulleagh River (and its tributaries) with a resultant loss of, or damage to commuting routes, foraging grounds and prey species. This would have been a significant adverse temporary impact of moderate duration. However recent surveys indicate that Otters have returned to the Owendalulleagh River downstream of the windfarm site. Although it is possible that Otters commute across the site via the on-site watercourses there is no physical evidence that they use the site on a regular basis. The watercourses have not been adversely affected during the operational phase and they are unlikely to be significantly affected during the decommissioning phase, given the proposed scale of the works and subject to water protection mitigation measures. No significant adverse impacts are anticipated for Otter in terms of loss of foraging grounds or prey species.

Bats:

The rEIAR carried out seasonal bat surveys in 2011, 2016 and 2019 in line with relevant Guidelines (including static bat detectors at turbine locations, driven transects & dog searches for bat carcasses). The surveys recorded the presence of foraging and commuting bats within the site and surrounding area, no roosts or potential roost sites were recorded on site or in the vicinity. The surveys identified several species including Leisler's bat, Common & Soprano pipistrelle, Nathusius' pipistrelle (autumn only), Brown long-eared bat & two Myotis sp. The highest activity rate was recorded for Leisler's bat (74% of all recorded passes) with the highest level of activity at T33, T71, T70 and T27 in the centre of the site along a N-S axis. One dead bat was discovered during a recent (dog) carcass survey at T11 (Soprano pipistrelle). The surveys did not record the presence of Lesser Horseshoe bat on or around the site, which is a Qualifying Interest species for Lough Cutra SAC to the SE of the windfarm site.

The site contains suitable commuting and foraging habitat for most of these species due to the presence of trees around and within the site, although Leisler's bat is less habitat dependent as it favours aerial hawking and is therefore at a higher risk of collision with turbines. The windfarm project would have caused a temporary disturbance to bats during the construction phase and damage to bridges during the peat slide could have affected bat roosts. However, the return of bats to the site and their habituation to the operational windfarm is confirmed by the rEIAR bat surveys between 2011 and 2019. Any future disturbance caused during the de-commissioning phase would be short term and temporary, having regard to the scale of the proposed works and subject to management by mitigation measures (including timing and seasonality of works).

The rotor blades could give rise risk of collision for some species during the operational phase (past, present & future). The rEIAR surveys indicate that the site numbers are high for Leisler's bat, which is known to be on one of the species most at risk of turbine collision, and the surveys recorded the highest number of passes for this species. However, the bat fatality surveys did not record any Leisler's bat carcasses, and only recorded one fatality related to Soprano pipistrelle. It is noted that this survey is ongoing. The absence of vegetation (and hence prey species for

bats) around the turbine bases would have deterred foraging activity in the vicinity of the turbines as these areas comprise hardstandings and there is little or no artificial lighting at night during the operational phase, except for aviation lights. I am therefore satisfied, based on the rEIAR survey data, that bats have gradually habituated to the windfarm during the operational phase with no significant adverse long-term adverse impacts anticipated.

***Amphibians & Reptiles*:** The rEIAR noted that Common frog, Smooth newt and Common Lizard are likely to frequent the windfarm site, and they may be present in the vicinity of the Agannygal substation and along the overhead grid connection and haul routes. The windfarm project could have affected these species during the construction phase (including the peat slide event), although it is likely most returned to the site post construction and gradually habituated to the operational windfarm. Any future disturbance caused during the de-commissioning phase would be short term and temporary, having regard to the scale of the proposed works and subject to best construction and site management practices.

Invasive species: It is possible that invasive plant and animal species are present in the surrounding area and along the grid connection and haul routes, and appropriate measures should be put in place to prevent their spread by means of a Management Plan. This could be addressed by way of a planning condition.

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

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

Otter & Bats: Obligations under Article 12 of the EU Habitats Directive in relation to Otter and Bats are addressed in section 6.5 above.

Peat slide event:

The 2003 peat slide event occurred during the early part of the construction phase, it affected c.450,000 tonnes of peat over a c.25ha area and it resulted in the mass movement of c.250,000 tonnes of peat and forest debris in a SE direction from the S section of the site (close to T68) over a distance of c.3-5km. This event had a

significant adverse impact on the affected lands along with the emergency and remedial works which included the installation of several barrages' downslope of the windfarm site. However, the affected terrestrial habitats mainly comprised disturbed peatland and conifer plantations, and although the impacts would have been significantly adverse at the time, they were local, medium term and temporary. My visit to the site of the site of the peat slide event confirmed that the area and its constituent habitats has successfully regenerated.

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on biodiversity (terrestrial ecology-excluding birds) in the surrounding area.

7.9.7 Conclusions

Residual Effects: There would have been some loss of habitat and disturbance to wildlife during the construction phase (including the peat slide event), and there would be some increase in disturbance during the operational and decommissioning phase. However, residual impacts were not, and are not predicted to be significant subject to the implementation of rEIAR mitigation measures and any recommended conditions. Most species disturbed during the construction phase would have returned and gradually habituated to the operational windfarm, whilst most species will return and habituate after the decommissioning phase.

Cumulative Impacts: Any cumulative impacts during the various phases (past, present & future) 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 no significant adverse impact at project level, and the remote location.

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

Overall conclusion:

Having regard to the foregoing, I am satisfied that the windfarm project did not, and would not have any significant adverse impacts, during the construction, operational (past, present & future) and decommissioning phases, or any long-term residual impacts on any designated sites, habitats, flora or fauna in the area, subject to the full implementation of the rEIAR mitigation measures, any recommended conditions. The windfarm project has not and would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, plans or projects in the wider area.

7.10 Biodiversity (Terrestrial Ecology – Birds)

7.10.1 Project description

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment (terrestrial ecology - including birds), the main elements of the project comprise any disturbance to bird species caused by the construction works, the operational turbines and overhead grid connection, and future decommissioning works, within the site and environs.

7.10.2 Locational context

As previously stated, the site occupies a remote upland location in the N section of the Slieve Aughty Mountains SPA which was designated for Hen Harrier & Merlin after the windfarm was permitted and constructed. The site and surrounding area were originally characterised by extensive coniferous plantations over blanket bog, and it is now characterised by a mix of open peatland habitats and coniferous forestry plantations. The windfarm site, environs and wider area are frequented by several bird species including raptors. There are several European sites within the Zone of Influence of the site which have been designated for their conservation importance for birds. Lough Cutra and Lough Derg are located the SW and SE of the site respectively, and Galway Bay is located to the far NW.

7.10.3 Remedial Environmental Impact Assessment Report

Chapter 7.0 of the rEIAR and associated Technical Appendices dealt with birds within the windfarm site, its environs and the wider area from c.1998 onwards. Several desktop studies (including previous EISs & NPWS reports), consultations with relevant agencies (including the local NPWS ranger), walkover surveys and detailed seasonal field surveys were undertaken between c.2003 and 2020, and the relevant designated sites (for birds) within a 15-20km radius of the site were identified.

Historical data indicates that the several species may have frequented the site and environs prior to the construction phase and forest clearance (including Hen harrier, Merlin, Woodcock, Red grouse, Meadow pipit, Skylark & Snipe) although it was noted that the dense closed coniferous forestry cover did not provide optimum conditions for birdlife.

Several seasonal bird surveys for Hen harrier and Merlin were conducted between 2003 and 2020 in line with relevant SNH and NPWS Guidelines (windfarm site plus 500m buffer). The rEIAR noted the presence of up to 12 x ***Hen harrier*** breeding territories within a 5km radius of the site prior to construction in 2003, with the nearest located c.2km away. Several surveys between 2004 and 2020 noted a decline after 2009 when the number of breeding pairs dropped from 12 to 5 between 2010 and 2018. The rEIAR states that this is representative of the SPA as a whole where a c.48% population decline was recorded between 2005 and 2015 for various reasons (including forestry, agriculture, recreation & energy projects). It stated that the extensive forest clearance associated with the Derrybrien windfarm project resulted in a positive impact for Hen harrier by creating additional foraging grounds (c.255ha). No HH nests have been recorded on or within 1km of the site since monitoring began in 2004, however it has been recorded foraging within the site in most of the survey years, except for during some of the winter surveys (2012 & 2019). ***Merlin*** was not recorded at the site during any of the various bird surveys.

Several ***other bird species*** known to frequent heathland and forest habitats were recorded at the windfarm site during summer surveys (2006-2018) which were variously breeding, hunting, foraging or resting. This included 4 x Red listed species (Golden plover, red grouse, Meadow pipit and Grey wagtail), 11 x Amber listed species (including Teal, Kestrel, Sparrowhawk, Snipe, Skylark & Mistle thrush), and several passerines.

The rEIAR identified the main windfarm impacts as loss of foraging, collision risk, displacement and barrier effect, and collision risk with the overhead grid connection and the subsequent analysis was based on a combination of site survey records and a literature review. It did not predict any significant adverse residual or in-combination impacts subject to the implementation of mitigation measures which

include bird flight diverters along the overhead powerline, seasonal restrictions on routine maintenance, HH territorial surveys (2km of boundary) and ongoing surveys.

The rEIAR concluded that there was and would be disturbance during the construction and decommissioning phases, some habitat loss and species displacement, but that the birds gradually habituated to the operational windfarm post construction, and the collision risk and mortality rate is low for all species. The rEIAR did not identify or predict any adverse impacts for birds which frequent or traverse the windfarm site and the surrounding area, across the seasons. It is noted that the rEIAR did not carry out any Collision Risk modelling exercises.

7.10.4 Existing Windfarm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type, and the details of are summarised in section 1.4 above. The construction works were preceded by the felling of c.220ha of commercial coniferous forestry, the construction phase peat slide event occurred in 2003, and the M18 and M6 motorways were completed after the windfarm commenced operational in 2006.

7.10.5 Policy Context

European and National legislation provides a framework for the protection of bird species and their habitats. The relevant previous and current County Galway Development Plans (1997-2003, 2003-2009 & 2015-2021) contain a range of policies and objectives for the protection and management of natural heritage sites for birds (including SACs, SPAs, NHAs & Nature Reserves) and to ensure compliance with European and National legislation. It is noted that the Slieve Aughty Mountains SPA and some other European sites in the surrounding area were proposed for designation after the 3 x windfarms were permitted and constructed (refer to section 4.6 above), and that the designations were reflected in the later Development Plans and Wind Energy Strategy.

7.10.6 Assessment:

As previously stated, I surveyed the windfarm site and the surrounding area in over a 3-day period in February 2021. I had regard to the relevant rEIAR ornithology studies which are summarised in section 7.10.3 above. I had regard to the concerns raised by the Observers (including Friends of Derrybrien Environment and Martin Collins) and the applicant's response to them, which are summarised in sections 5.0. I also had regard to the presence of an operational windfarm on the site.

The concerns raised related to potential adverse impacts on sensitive sites and protected species of bird (including Hen harrier & Merlin), declining Hen harrier populations, and the quality of the previous EIS and current rEIAR survey data and conclusions. 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 4.0, and to the presence of an operational windfarm on site.

The windfarm site, which mainly comprises peatland habitats surrounded by conifer forestry plantation, is located within the Slieve Aughty Mountains SPA which is designated for Hen Harrier and Merlin (after the 3 x windfarms were originally permitted and constructed). The NPWS Site Synopsis notes that the SPA provides excellent nesting and foraging habitat for nationally important breeding populations of Hen Harrier and Merlin, and that Red Grouse also occur within the area. There are several European sites and NHAs within a 20km radius of the site which are designated for their importance to birds (including resident, breeding, migratory, water & wintering birds).

The windfarm project undoubtedly caused a disturbance to birds during the construction phase (including the 2003 peat slide event) because of the nature of the works and resultant loss of habitat (foraging, nesting & resting), noise disturbance and temporary displacement. A similar range of impacts could occur during the decommissioning phase, with the exception of habitat loss. The operational phase had and has the potential to affect bird mortality rates in several species as a result of colliding with operational rotor blades and the overhead grid connection. The

windfarm project also has the potential to contribute to cumulative barrier effects in combination with other windfarms, plans and projects in the wider area.

The rEIAR carried out intermittent seasonal bird surveys over an extensive period of time at the windfarm site and along the overhead grid connection to the Agannygal substation. The bird surveys were used to identify the extent to which various species frequent and/or flyover the site, and it identified the presence of several species in and around the site which have habituated to the presence of the existing turbines. The surveys concluded that the site offers suitable conditions for a variety of foraging and ground nesting birds, and several species were recorded within the site and the surrounding area. The results are summarised in section 7.10.3 above and I am satisfied that the survey effort broadly accord with relevant survey guidelines.

Hen Harrier:

Hen Harrier is a Special Conservation Interest species for the Slieve Aughty Mountains SPA and the NPWS Site Synopsis notes that they support the second largest concentration in the country. A survey in 2005 recorded 27 pairs (c.12% of the Irish population) however the number of nesting pairs has steadily declined since then for a variety of reasons, including forestry & agricultural practices, energy projects & recreation. Hen Harriers forage up to c.5km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland, and the overall decline in the SPA, the windfarm site and environs have optimum foraging potential for this species.

The rEIAR surveys did not record any breeding activity or nests within the windfarm site or within a 0-1km radius, although a nest and winter roosts were recorded within c.1-2km of the site boundary. The site surveys indicate that Hen harrier is a frequent visitor to the site and environs which strongly suggest that displacement has not occurred. In relation to impacts on reproductive output and collision risk with operational rotor blades, the rEIAR relied on international and Irish scientific research, and the site-specific surveys. Research into the breeding behaviour of Hen harrier shows that there were no significant differences between the breeding outputs at nests located at different distances from turbines.

The site surveys indicate that the windfarm has had no adverse impacts on nests located within 1-2km of the windfarm site. Hen harrier flights are rarely recorded at collision height, as they tend to be low-flying, and there have been no documented collisions during any of the site surveys (which were not HH carcass specific). In relation to the overhead grid connection, the rEIAR referenced several studies that noted that Hen harrier inhabits open moorland areas and may hunt at heights which make them particularly vulnerable to collisions with overhead wires, and that powerlines could cause an adverse impact in the absence of mitigation. The rEIAR mitigation measures provide for on-going monitoring and the installation of bird flight diverters along the overhead cable to prevent collisions. These measures are considered acceptable in terms of site management, species protection.

No significant long-term adverse impacts would have occurred or are anticipated to occur in respect of the Slieve Aughty Mountains Hen harrier population in terms of habitat loss, reproductive output, displacement, or mortality. It is unlikely that the site and environs, prior to the construction works (including the peat slide event) and associated tree felling, provided suitable foraging habitat for Hen Harrier because of the dense nature of the conifer forestry plantations. The c.255ha of open peatland habitat created within the site following forest clearance (and subsequent habitat regeneration) would have provided Hen harrier with have additional foraging grounds and this species would have gradually habituated to the area post construction. No significant adverse impacts have occurred or are anticipated to occur during the operational phase as a result of collisions with rotor blades or overhead powerlines. The decommissioning phase could give rise to some short-term temporary disturbance, but no significant adverse long-term impacts are anticipated subject to best construction practice and mitigation measures (including pre-construction surveys and timing & seasonality of works).

I am satisfied that the windfarm project did not and would not have any significant adverse effects on Hen Harrier at the windfarm site and wider area. However, having regard to the protected status of this species which is also a SCI species for the Slieve Aughty Mountains SPA, a species-specific monitoring programme should be put in place for during the continued operational and future decommissioning phases. This could be addressed by way of a planning condition.

Merlin: is a Special Conservation Interest species for the Slieve Aughty Mountains SPA, it is a local summer visitor to uplands and a widespread winter visitor at lowland sites. The NPWS Synopsis states that the SPA supports a breeding population, although the population size is not well known but is likely to exceed five pairs. It is noted that Merlin was not recorded at or around the site during any of the rEIAR surveys.

Other Raptors: the various rEIAR bird surveys noted the occasional presence of other raptors including Kestrel (hunting) & Sparrowhawk (breeding) in the vicinity of the site but that no collisions have been recorded. Having regard to their recorded presence on the site and evident ability to habituate to the turbines, I am satisfied that the windfarm project has not, and would not pose a significant threat to Raptors. Any previous loss of foraging habitat has been mitigated by the creation of an additional 255ha of open heathland habitat within the site boundary. It is likely, based on the various survey results, that Raptors habituated to the works after the construction phase was completed (including the peat slide event) with no significant impacts arising during operational phase (past, present & future). The decommissioning phase could give rise to some short-term temporary disturbance, but no significant adverse long-term impacts are anticipated in terms of habitat loss, displacement, or mortality, subject to best construction practice and mitigation measures (including timing & seasonality of works).

Snipe & Red grouse: Slieve Aughty Mountains SPA and the surrounding elevated peatlands provide a suitable habitat for Snipe and Red Grouse. The rEIAR surveys recorded the occasional presence of these species foraging on and in the vicinity of the windfarm site, and Snipe was recorded nesting in the area. No significant adverse long-term impacts would have occurred or are anticipated to occur in terms of habitat loss, reproductive output, displacement or mortality. Any loss of foraging grounds would have been mitigated by the addition of c.255ha of open foraging habitat within the site, and these species would have gradually habituated to the area post construction.

Other species: The Slieve Aughty Mountains SPA and the surrounding elevated peatlands provide suitable nesting and foraging habitat for a variety of other bird species. The various rEIAR bird surveys recorded the presence of several other bird

species (including Meadow pipit, Skylark, Mistle thrush & Raven), some of which were breeding. It is likely, based on the various survey results, that most bird species gradually habituated to the works after the construction phase was completed (including the peat slide event) with no significant impacts arising during operational phase (past, present & future). The decommissioning phase could give rise to some short-term temporary disturbance to birds, but no significant adverse long-term impacts are anticipated, subject to best construction practice and mitigation measures (including timing & seasonality of works).

Wintering & migratory waterbirds:

There are several European and nationally sensitive waterbodies in the surrounding area which are designated for their conservation importance for birds. The nearest designated sites include Lough Cutra SPA to the SW (Cormorant), Lough Rea to the N (Shoveler, Coot & Waterbirds), and Lough Derg SPA to the E (Cormorant, Tufted duck, Goldeneye, Common Tern and Wetland & Waterbirds), and none of these species have been recorded as frequent visitors to the windfarm and environs during the various surveys. Further afield European sites include Inner Galway Bay SPA to the NW (several coastal SCI species including Teal & Golden plover). Teal has been recorded on several occasions (breeding probable) in the vicinity of the centrally located upland lake. The rEIAR bird surveys recorded two visits by flocks of Golden plover (c.550 & 150) in 2009 which were considered to be on migration and there is no evidence that the windfarm site and environs are regularly frequented by this species.

The various rEIAR bird surveys indicate that the windfarm site and environs are not regularly frequented or overflown by any of the species associated with the European sites and surrounding waterbodies (including Cormorant). The evidential presence of Teal at the upland lake indicates that this species has not been adversely affected by the windfarm project. I am satisfied that no significant adverse long-term impacts on wintering and migratory waterbirds would have occurred or are anticipated to occur in terms of loss of foraging habitat, species displacement or increased mortality due to collisions with rotor blades or overhead powerlines.

Barrier & cumulative effects: There are two other windfarms and several infrastructure projects within a 20km radius of the site. The rEIAR concluded that there would be no cumulative impacts or barriers to movement because during any of the phases. It is noted that this conclusion is not supported by reference to specific survey data. However, the survey results indicate that the windfarm is not located along a migratory or commuting route for any species and given the lack on any local impacts on birds, it is unlikely that the windfarm would contribute to cumulative impacts in the wider area in-combination with other projects. It is also noted that the rEIAR does not deal with barriers to movement between nesting or roosting sites and foraging areas, however I am satisfied that the windfarm would not have an adverse impact on movement, given the absence of significant local impacts at project level.

Peat slide event:

The 2003 peat slide event occurred during the early part of the construction phase and it resulted in the mass movement of c.250,000 tons of peat and forest debris in a SE direction from the S section of the site (close to T68). This event had a significant adverse impact on the affected lands along with the emergency and remedial works which included the installation of several barrages' downslope of the windfarm site. The affected terrestrial habitats mainly comprised disturbed peatland and conifer plantations, and although the impacts would have been significantly adverse at the time, and may have resulted in a loss of foraging habitat for several bird species, given the time of year that the event occurred (October) it is unlikely that any breeding or nesting birds were affected. The impacts of the peat slide event would have been local, medium term and temporary, with no significant impacts on any bird species occurring or predicted.

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on biodiversity (including birds) in the surrounding area.

7.10.7 Conclusions

Residual Effects: There would have been some loss of habitat and disturbance to birds during the construction phase (including the peat slide event), and there would be some increase in disturbance during the decommissioning phase. However, residual impacts were not, and are not predicted to be significant subject to the implementation of rEIAR mitigation measures and any recommended conditions. Most bird species disturbed during the construction phase would have returned and gradually habituated to the operational windfarm, whilst most species will return and habituate after the decommissioning phase. Adverse impacts during the operational phases have not been and would not be significant subject to mitigation measures.

Cumulative Impacts: Any cumulative impacts during the various phases (past, present & future) 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 no significant adverse impacts at project level and the remote location.

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

Overall conclusion:
Having regard to the foregoing, I am satisfied that the windfarm project has not, and would not have a significant adverse impact, during the construction, operational (past, present & future) and decommissioning phases, or any long-term residual impacts on any bird species in the area, subject to the full implementation of the rEIAR mitigation measures, any recommended conditions. The windfarm project has not and would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, plans or projects in the wider area.

7.11 Material Assets (incl. Cultural Heritage & Tourism)

7.11.1 Project description

The windfarm project, ancillary works and associated site works (including the response to the 2003 peat slide event) are described in detail in section 2.2 of this report. In terms of this aspect of the assessment (material assets including cultural heritage & tourism), the main elements of the project comprise any disturbance to heritage caused by the excavation and construction works within the site, environs and along the road network, any visual disturbance caused by the turbines and met masts, and any interference with other material assets (including energy, agriculture, forestry, fisheries, infrastructure services, aviation & telecommunications).

7.11.2 Project location

The windfarm project occupies an upland rural location in the N Slieve Aughty Mountains in S County Galway and the lands are mainly characterised by peatland with extensive commercial forestry plantations and some turf cutting. The windfarm project is located to the E of a major tourist route (M18) which connects County Clare with County Galway and S of the M6 which connects Dublin to Galway, both of which opened after the windfarm was constructed and commissioned in c.2006. There are several scenic amenity areas, protected views, cultural heritage features, walking routes and cycleways in the wider area in County Galway and the neighbouring counties. Derrybrien Village and several dispersed houses are located to the S. The surrounding lands uses include forestry, agriculture and turf cutting, and the various infrastructural services in the wider area include water supply & treatment facilities. Galway Airport is located to the far NW of the site, however it ceased operations in c.2011.

7.11.3 Remedial Environmental Impact Assessment Report

Chapter 15 of the rEIAR dealt with cultural heritage and archaeology, several desktop and field studies were undertaken, and the previous EIS studies were reviewed. The rEIAR did not identify any National Monuments, Recorded Monuments or sites of significant archaeological or heritage interest within or close

to the site. It noted that the site and surrounding lands had been significantly disturbed by commercial forestry works in recent years. It referred to the presence of two recorded archaeological sites in the vicinity. There is a Cashel site (GA124-001) in the NW section of the site close to a forestry plantation, although there are no surface level remains. There is a 19th Century Folly known as the Earl's Chair (GA124-006) to the N of the access road off the Black Road to the E. There are no other records of archaeological remains within c.400m of the windfarm site or in the vicinity of the peat slide area, or within 100m of the grid connection and Agannygal substation. There are 11 recorded archaeological sites within c.3km of the project (including Burial grounds, Cashel's, Enclosures, Standing stones & Mounds). The nearest National Monument to the site is located at Kelly Castle (Ref.272) c.10km to the NW. The rEIAR concluded that no sites of archaeological interest have been or would be adversely affected by the windfarm project subject to mitigation measures.

The rEIAR did not identify any Protected Structures or NIAH sites within the site or environs (including the peat slide area, grid connection route, Agannygal substation and haul route) although it noted the presence of several historic features in the wider area. The NIAH lists 3 features of interest in Derrybrien Village (including St. Patrick's Church and an 18th Century house). The Flaggy Bridge along the R353 to the SE of the windfarm site is of local heritage interest, and no other features of significant interest were identified along the grid connection or haul routes. The rEIAR concluded that windfarm project did not and would not have an adverse impact on any of these features.

Parts of ***Chapters 4, 9 and 13*** dealt with Tourism in relation to employment, attractions, high amenity areas, landscapes, views, walking routes and cycleways.

Chapter 13 of the rEIAR dealt with material assets with respect to agriculture, forestry, turf cutting, fisheries, water services, telecommunications, and aviation. It concluded that the windfarm did not and would not adversely affect any of these resources or interfere with air traffic, and that no electromagnetic interference was or is expected, with the exception of short term, direct adverse significant effects on water quality and fisheries as a result of the 2003 peat slide event during the construction phase.

The rEIAR did not predict any past, present, or future adverse impacts on Material Assets (including cultural heritage & tourism) subject to mitigation measures with no residual or cumulative impacts predicted (except for past short-term effects on water quality and fisheries for c.5 years following the 2003 peat slide event).

7.11.4 Existing Windfarm

Three separate planning permissions were granted in the late 1990s and early 2000s for the existing windfarm project at Derrybrien, along with subsequent permissions for time extensions and changes to turbine type. The details of are summarised in section 1.4 above. The construction works were preceded by the felling of c.220ha of commercial coniferous forestry, the construction phase peat slide event occurred in 2003, and the M18 and M6 motorways were completed after the windfarm commenced operational in 2006.

7.11.5 Policy Context

The relevant previous and current County Galway Development Plans (1997-2003, 2003-2009 & 2015-2021) contain a range of policies and objectives for the protection and management of material assets, including cultural heritage, the rural economy (agriculture, forestry & fisheries), infrastructural services (water treatment & supply), energy and tourism (landscape, scenic routes & views).

7.11.6 Assessment

As previously stated, I surveyed the wind farm site and the surrounding area over a 3-day period in February 2021. I had regard to the relevant rEIAR archaeological, cultural heritage, tourism and material assets studies which are summarised in section 7.11.3 above. I had regard to the concerns raised by the Observers (IFI, Friends of Derrybrien Environment, South Galway Flood Relief Committee & Martin Collins) in relation to scenic amenity, water quality and fisheries, which are summarised in Section 5.0 above, and the applicant's response to these concerns. I also had regard to relevant national, regional, and local planning policy, which is summarised in Section 4.0, and to the presence of an operational windfarm.

Archaeology:

There are no National Monuments, Recorded Monuments or known sites of archaeological interest located within the windfarm site or the immediately surrounding area. Although, it is possible that the peatland site may contain have contained undiscovered artefacts, it is likely that they were disturbed during the previous forestry plantation works. It is noted that Galway County Council and the Prescribed bodies did not raise any 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 wider area that may have been affected by the works and peat slide event. There may also be several features of interest located along the delivery route and care should be taken to ensure that no damage occurs to buildings and structures in the wider area during the decommissioning phase. It is noted that Galway County Council and the Prescribed Bodies did not raise any concerns in relation to cultural heritage.

Tourism:

The main tourism issues relate to the visual impact of the windfarm project on the surrounding landscapes and protected views along with the consequent impact on tourism and recreation (including hillwalking, walking routes & cycling). These issues have been mainly addressed in section 7.4 above. It is noted that recent research on the impact of windfarms on tourism and upland recreational activities is varied and inconclusive. However, having regard to the conclusions reached in section 7.4 above, I am satisfied that the windfarm project has not, and would not have a significant impact on tourism or the tourist potential of the area. Furthermore, the windfarm project has not, and would not interfere with the character or setting of any heritage features which form part of the tourism offer of the area, having regard to the separation distances between the windfarm and these features.

Material assets:

The proposed windfarm has not, and would not have a significant impact on aviation, having regard to the separation distance and subject to compliance with standard aviation requirements in the event that Galway Airport reopens in the future. I am satisfied that there have not been and would not be significant impacts from electromagnetic interference given the sparsely populated nature of the area. However, measures (including regular monitoring) should be retained or put in place to avoid interference.

The operational windfarm project will contribute to the provision of renewable energy and contribute to a reduction in greenhouse gas emissions, although it is noted that this would be weighed against the loss of peatland which functions as a carbon sink (refer to section 6.3 of the Planning Assessment of a more detailed assessment).

The windfarm project did not and would not have any significant adverse effects on any other material assets including agriculture, forestry (notwithstanding the substantial felling of commercial forestry to accommodate the project), and most infrastructure and energy services. This is with the exception of past adverse medium-term impacts on fisheries, water quality and supply related to the 2003 peat slide event, which are assessed in more detail in sections 7.7 & 7.8 above.

Peat slide event:

The 2003 peat slide event occurred during the early part of the construction phase and it resulted in the mass movement of c.250,000 tons of peat and forest debris in a SE direction towards Derrybrien and Flaggy Bridge along the R353. This event caused damage to local roads and bridges and could have affected previously undiscovered archaeological remains and interfered with recreational activities. However, the impacts of the peat slide event on cultural heritage and tourism would have been local, medium term and temporary.

Reforestation: The planting of replacement forestry in Counties Roscommon and Tipperary did not and would not give rise to any significant impacts on material assets (including cultural heritage and tourism) in the surrounding area.

7.11.7 Conclusions

Residual Effects: Residual impacts have not been, nor will be significant subject to the implementation of rEIAR mitigation measures and any recommended conditions. (Refer to sections 7.7 & 7.8 above in relation to residual impacts on material assets [fisheries, water quality & supply] associated with the peat slide event).

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, and the remote location. (Refer to sections 7.7 & 7.8 above in relation to construction phase impacts on material assets [fisheries, water quality & supply] associated with the peat slide event).

Conclusion: I have considered all the written submissions made in relation to material assets, cultural heritage, and tourism, 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 has arisen or is likely to arise. (Refer to sections 7.7 & 7.8 above in relation to impacts on material assets [fisheries, water quality & supply] associated with the peat slide event).

Overall conclusion:

Having regard to the above, I am satisfied that the windfarm project has not, and would not adversely affect cultural heritage, tourism, or material assets to any significant extent, subject to the continued full implementation of the rEIAR mitigation measures and any recommended planning conditions. The windfarm project has not and would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, the grid connections, or plans and projects in the area. (Refer to sections 7.7 & 7.8 above in relation to impacts on material assets [fisheries, water quality and supply] associated with the peat slide event).

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 windfarm project and any recommended planning conditions.

7.13 Consideration of cumulative impacts

The preceding rEIA sections of this report dealt with cumulative impacts in detail. The following existing or permitted plans and projects (since c.1998) are located within a c.20km radius of the windfarm project in County Galway and the neighbouring counties.

- Adjacent turf cutting (inside & outside the site boundary)
- Adjacent commercial forestry plantations
- Tree planting in lieu of felling (neighbouring counties)
- Nearby operational wind farms in (Sonnagh Old to N & Kilderry to W
- Thermal generation (Tynagh 400MW power plant) to NE
- Overhead transmission lines to S
- Gort Regional Water Supply Scheme to W
- Flood Relief Schemes at Gort, Kiltartan, Kinvara & Gort Lowlands to W
- M18 Gort to Tuam Motorway Project to W
- Quarries & sand extraction at Black Road, Cloghvoley & Ballynakill
- Works at Beagh Bridge to SW.

I am satisfied that such effects are unlikely having regard to the remote location of the windfarm project, and that any localised cumulative impacts can be avoided, managed and mitigated by the measures which form part of the windfarm project, and any recommended conditions. There is, therefore, nothing to prevent the granting of substitute consent permission for on the grounds of cumulative effects.

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

The works undertaken in the early stages of the construction phase, which mainly comprised tree felling, peat excavation and the installation of floating roads, are likely to have contributed to the 2003 peat slide event which could be classified as a major accident. However, the subsequent construction works incorporated a range of mitigation measures which protected the stability of the peat slopes and no further significant slippages occurred. The potential positive impacts associated with climate change in relation to a reduction in CO_2 emissions from the burning of fossil fuels to provide electricity have been factored into the relevant sections of the rEIAR.

7.15 Reasoned Conclusion on Significant Effects

Having regard to the examination of the environmental information contained above, and in particular to the rEIAR, the submissions from the planning authority, prescribed bodies and Observers, and my inspection of the site and surrounding area, it is considered that the main significant direct and indirect effects of the windfarm project on the environment (past, present & future) have been identified in this report, as summarised below.

- The ***risk of peat erosion, peat instability and peat slippage during the construction, operational and decommissioning phases*** through a lack of control over, or mismanagement of the excavation and peat/spoil removal works. Such impacts did occur during the early stages of the construction phase, however they were managed and controlled during the later construction and operational phases and would continue to be managed and controlled during the continued operational and future decommissioning phases, by the implementation of a range of mitigation measures related to site management in upland blanket bog locations.
- The ***risk of pollution of ground and surface waters during the construction, operational and decommissioning phases*** through a lack of control of surface water during excavation and construction, and the mobilisation of peat sediments and other materials during excavation. The construction of the windfarm project also had the potential to impact negatively on ground and surface waters by way of contamination through

accidents and spillages. Contamination of surface waters did occur as a result of the excavation works during the early stages of the construction phase (as a result of the 2003 peat slide event). Impacts on ground and surface waters were managed and controlled during the later construction and operational phases and would continue to be managed and controlled during the continued operational and decommissioning phases, by the implementation of a range of mitigation measures related to the management and control of erosion, sediments, accidental spills and contamination, and by drainage management.

- ***Biodiversity impacts*** arising from habitat loss or fragmentation, changes to the vegetation on the site, loss of foraging habitat and disturbance to birds and bats, aquatic and water dependent habitats and general disturbance during the construction, operational and decommissioning phases. Damage to the aquatic environment did occur as a result of the excavation works during the early stages of the construction phase (as a result of the 2003 peat slide event). Impacts on biodiversity were managed and controlled during the later construction and operational phases and would continue to be managed and controlled during the continued operational and future decommissioning phases, by the implementation of a range of mitigation measures which include site management, water quality protection, seasonality and timing of works, and turbine curtailment, along with ongoing monitoring. The felling of coniferous forestry plantations to accommodate the windfarm project gave rise in the creation of a substantial area of open heathland habitat which has had a positive impact on biodiversity.
- Increased ***vehicle movements and resulting traffic impacts*** during the construction phase on the road network were mitigated by measures related the timing of deliveries of construction materials and components to the site and would be mitigated during the decommissioning phase by timing, road and bridge condition surveys and the implementation of a Construction Traffic Management Plan.

- ***Air pollution and noise during the construction, operational and decommissioning phases*** and resulting impacts on nearby sensitive receptors and populations in the vicinity have been and would be substantially avoided because of the limited number of sensitive receptors in close proximity to the development, and the implementation of mitigation measures related to air quality, dust and noise controls.
- ***Visual impacts on the landscape*** during the operational phase as a result of the installation of tall structures are unavoidable and cannot be mitigated for.
- The windfarm project has had and would continue to have ***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 the works undertaken in the early stages of the construction phase had or contributed to unacceptable direct and indirect effects on the environment. However, I am also satisfied that, subject to the continued implementation of mitigation measures, the windfarm project (after the 2003 peat slide event) did not and would not have any unacceptable direct or indirect impacts on the environment.

8.0 REMEDIAL 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 Remedial Natura Impact Statement (rNIS)

A remedial Stage 1 AA screening exercise was carried out for the windfarm project (including the windfarm, grid connection, substations, site works, peat slide event & replacement forestry). A remedial Stage 2 Natural Impact Statement was prepared.

8.2.1 Remedial Stage 1 AA Screening Report

The remedial AA Screening exercise described the site location, the characteristics of the windfarm project and the receiving environment. It identified the European sites within the Zone of Influence of the project, potential aquatic or mobile connectivity between the project and the sites, and the potential for likely effects on c.30 European sites. The Screening exercise concluded that the project had, or could have the potential to affect, either alone or in-combination with other plans or projects, the Qualifying Interests and Conservation Objectives of 2 x European Sites (Slieve Aughty SPA & Lough Cutra SPA), and that progression to a Stage 2 assessment and submission of a remedial Natura Impact Statement was required.

8.2.2 The Remedial Natura Impact Statement Report

The rNIS summarised the legislative context and described the reports methodology. It described the windfarm project, baseline ecology and connectivity, and assessed the likely significant effects on 2 x European sites (Slieve Aughty SPA & Lough Cutra SPA). It described the ecological characteristics of the European sites and listed their Conservation Objectives, Qualifying Interests and/or Special Conservation Interests. It identified potential sources of direct and indirect impacts on the European sites relative to their Conservation Objectives and it referenced the relevant rEIAR mitigation measures. It assessed the potential for cumulative effects in-combination with other plans and projects in the area. The rNIS was informed by the remedial Stage 1 AA Screening Report, various ecological desk top studies and field surveys, and relevant rEIAR Chapters. It concluded that, on the basis of objective scientific information, the windfarm project, individually or in-combination with other plans or projects, did not, and would not adversely affect the integrity of any European Site. Difficulties encountered mainly related to the absence or quality of survey data prior to 2000.

8.3 Remedial AA Screening Assessment

The main issues related to biodiversity and the concerns raised by the Observers are summarised and addressed in section 5.0 of this report and sections 7.8 to 7.10 of the rEIAR section should be read in conjunction with this assessment.

The windfarm project was not originally located within an area covered by any European site designations, however it is now located within the Slieve Aughty Mountains SPA. This SPA was proposed for designation in March 2007 and the Statutory Instrument was signed on 21st March 2012. Some other European sites within the Zone of Influence were also proposed for designation after the 3 x original windfarm applications (and amendments) were permitted and constructed. Therefore, this remedial AA screening exercise will take account of the proposal dates relative to the construction, operational and decommissioning phases. The windfarm project is not relevant to the maintenance of any of the European sites.

The following 30 x European sites are located within the Zone of Influence of the windfarm site. Their Qualifying Interests and Special Conservation Interests, approximate separation distances and potential connectivity are listed below.

SACs	Site code	Qualifying Interests	Separation distances	Links
Sonnagh Bog SAC	001913	Blanket bogs	1.5km NW 2.8km NW GC)	No
Drummin Wood	002181	Old sessile oak woods	7.5km SW 9.5km W (GC)	No
Peterswell Turlough	000318	Turloughs Rivers with muddy banks	7.5km NW 10km NW (GC)	No
Lough Rea	000304	Hard oligo-mesotrophic waters	9km NW 10km N (GC)	No
Lough Coy	002117	Turloughs	9km NW	No
Pollogona Bog	002126	Blanket bogs	9km SE 2km S (GC)	No
Gortacarnaun Wood	002180	Old sessile oak woods	9km SW 11km W (GC)	No
Carrowbaun, Newhall & Ballylee Turloughs	002293	Turloughs	9km W & 12km W (GC)	No
Lough Cutra	000299	Lesser horseshoe bat	10km SW 12km W (GC) 20km (aquatic)	Yes
Ballinduff Turlough	002295	Turloughs	11.5km NW 13.7 NW (GC)	No
Loughatoric South Bog	000308	Blanket bogs	13km SE 6km SE (GC)	No
Kiltartan Cave (Coole)	000286	Lesser horseshoe bat	12.5 W 15km W (GC)	No
Pollnaknockaun Wood Nature Reserve	000319	Old sessile oak woods	12.5km SE 11km E (GC)	No
Derrycrag Wood Nature Reserve	000261	Old sessile oak woods	13km SE 10km E (GC)	No
Coole-Garryland Complex	000252	Natural eutrophic lakes Turloughs Rivers with muddy banks	13.5 W 15.5km W GC) 22km & 30km (aquatic)	Possible

		Juniperus communis formations on heaths or calcareous grasslands Semi-natural dry grasslands & scrubland facies on calcareous substrates (Orchids) Limestone pavements Taxus baccata woods of the British Isles		
Ardrahan Grassland	002244	Alpine & Boreal heaths Juniperus communis formations on heaths or calcareous grasslands Semi-natural dry grasslands & scrubland facies on calcareous substrates (Orchids) Limestone pavements	14.5km NW 16km NW (GC)	No
Rosturra Wood	001313	Old sessile oak woods	15.5km E 13.5km E (GC)	No
Cloonmoylan Bog	000248	Active raised bogs Degraded raised bogs (capable of natural regeneration) Depressions on peat substrates of the Rhynchosporion Bog woodland	16km E 13.5km E (GC)	No
Glendree Bog	001912	Blanket bogs	16km SW &15km SW (GC)	No
Barroughter Bog	000231	Active raised bogs Degraded raised bogs (capable of natural regeneration) Depressions on peat substrates of the Rhynchosporion	18km E	No
Lough Derg NE Shore	002241	Juniperus communis formations on heaths or calcareous grasslands Calcareous fens Alkaline fens Limestone pavements Alluvial forests Taxus baccata woods of the British Isles	18km E 23km (aquatic)	No

Caherglassaun Turlough	000238	Turloughs Rivers with muddy banks Lesser Horseshoe Bat	16km W 40km (aquatic)	Possible
Cahermore Turlough	002294	Turloughs	16km W 40km (aquatic)	Possible
Galway Bay Complex	000268	Mudflats and sandflats Coastal lagoons Large shallow inlets & bays Reefs Perennial vegetation of stony banks Vegetated sea cliffs of the Atlantic and Baltic coasts Salicornia and other annuals colonising mud and sand Atlantic salt meadows Mediterranean salt meadows Turloughs Juniperus communis formations on heaths or calcareous grasslands Semi-natural dry grasslands & scrubland facies on calcareous substrates (Orchids) Calcareous fens Alkaline fens Limestone pavements Otter Harbour Seal	21km NW 45km (aquatic)	No

SPAs	Site code	Special Conservation Interests	Separation Distances	Links
Slieve Aughty Mountains	004168	Hen Harrier & Merlin	Located within	Yes

Lough Rea	004134	Shoveler & Coot Wetland & Waterbirds	9km NW 10km N (GC)	No
Lough Cutra	004056	Cormorant	10km SW 12km W (GC) 20km (aquatic)	Yes
Coole-Garryland	004107	Whooper Swan	14km W 16km (GC)	No
Lough Derg (Shannon)	004058	Cormorant & Tufted Duck Goldeneye & Common Tern Wetland & Waterbirds	18km E 13km E (GC) 23km (aquatic)	No
Inner Galway Bay	004031	Black-throated Diver Great Northern Diver Cormorant & Grey Heron Light-bellied Brent Goose Wigeon & Teal Red-breasted Merganser Ringed & Golden Plover Lapwing & Dunlin Bar-tailed Godwit Curlew & Redshank Turnstone Black-headed & Common Gull Sandwich & Common Tern Wetland & Waterbirds	21km NW 45km (aquatic)	No

The potential effects relate to:

- 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 such as Otter.

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

I am satisfied that all but 6 of the European sites can be screened out of any further assessment because of:- the nature and characteristics of the European site; the absence of an aquatic connection between the windfarm project and a European site; the substantial aquatic separation distances between the windfarm project and a European site; the high level of estuarine and tidal mixing that would occur in coastal locations (incl. Galway Bay SAC); the location of the European site significantly outside of the core foraging range of mobile species (birds & bats) for which the European sites are designated (incl. Inner Galway Bay SPA); the absence of suitable foraging or nesting habitat within the windfarm and environs; and the absence of any recorded sightings of species (birds & bats) for which the European sites are designated during the various rEIAR and associated surveys.

The 6 x European sites that remain after the remedial AA Screening exercise are:

SACs	SPAs
Lough Cutra	Slieve Aughty Mountains
Coole-Garryland Complex	Lough Cutra
Caherglassaun Turlough	
Cahermore Turlough	

Remedial AA Screening Conclusion

In conclusion, having regard to the nature and scale of the windfarm project, to the separation of the windfarm site and project components from the European sites, to the nature of the qualifying/special conservation interests and the conservation objectives of the European sites, and to the available information as presented in the rEIAR regarding ground and surface water pathways and mobile connections between the windfarm site and the European sites, and other information available including in the NPWS Site Synopsis, it is my opinion that the windfarm project had, and could have the potential to affect 6 x European sites, having regard to the conservation objectives of the sites, and that progression to a Stage 2 Appropriate Assessment is required.

8.4 Remedial Appropriate Assessment:

The relevant details for the 6 x European sites within the Zone of Influence of the windfarm project, including their proposal dates are summarised below. As previously stated, several other European sites within the Zone of Influence (including the Slieve Aughty Mountains SPA) were proposed for designation after the 3 x original windfarm applications were permitted and constructed. Therefore, this remedial Appropriate Assessment with take account of the European site proposal dates relative to the construction, operational and decommissioning phases.

Site name	Conservation Objectives	QIs & SCIs	Attributes & Targets	Proposal Date
Slieve Aughty Mountains SPA (004168)	To maintain or restore the favourable conservation condition of this species.	Hen harrier & Merlin	None specified.	03/07
Lough Cutra SPA (004056)	To maintain or restore the favourable conservation condition of this species.	Cormorant	None specified.	11/95
Lough Cutra SAC (000299)	To restore the favourable conservation condition of this species.	Lesser horseshoe bat	Number of roosts & population; Condition of roosts (winter/summer/auxiliary); Foraging habitat & Linear features (within 2.5km); Light pollution (within 2.5km)	03/03
Coole-Garryland Complex SAC	To restore the favourable conservation condition of habitat & species.	Eutrophic lakes; Turloughs; Rivers with muddy banks; Juniperus communis; Semi-natural dry grasslands; Limestone pavements; Taxus baccata woods of the BI.	None specified.	05/98

Caherglassaun Turlough SAC &	To restore the favourable conservation condition of this habitat.	Turloughs Rivers with muddy banks Lesser horseshoe bat	Habitat area & distribution; Hydrological regime; Soil type & nutrient status; Chemical processes; Water quality; Active peat formation; Vegetation structure & species; Fringing habitats.	01/02
Cahermore Turlough SAC	To restore the favourable conservation condition of this habitat		Habitat area & distribution; Hydrological regime; Physical structure; Soil type & nutrient status; Chemical processes; Water quality; Active peat formation; Vegetation structure & species; Fringing habitats.	02/03

Favourable Conservation Status is achieved when:

1. ***Habitats***

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

2. ***Species***

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

Slieve Aughty Mountains SPA:

The windfarm project is located within Slieve Aughty Mountains SPA which was proposed for European site designation in March 2007. This extensive area comprises a variety of upland habitats, conifer plantations and unplanted blanket bog

and heath, and the SPA was designated for its importance to Hen harrier and Merlin. According to the NPWS Site Synopsis, the SPA supports the second largest concentration of Hen harrier in the country and at least 5 breeding pairs of Merlin. It states that the mix of forestry and open areas provides optimum habitat conditions for Hen harrier. The rEIAR bird surveys of the site and surrounding area carried out over the lifespan of the windfarm project were used to inform the rNIS (refer to section 7.10 above). The surveys indicate that the windfarm site and environs are regularly used by Hen harrier, but not Merlin, and that Hen harrier has continued to nest within 2km of the site boundary. Ongoing monitoring data indicates and there are no records of any Hen harrier fatalities on the windfarm site.

The **Conservation Objective** for the Slieve Aughty Mountains SPA seeks to maintain or restore the favourable conservation condition of the species (Hen harrier and Merlin), for which there are no specified attributes and targets.

The windfarm project is located within this European site and the potential for **direct and indirect** effects on the SPA as a result of the works is assessed below.

Construction phase:

The Slieve Aughty Mountains SPA was proposed for designation as a European site in March 2007 which was after the windfarm was constructed and commissioned, and after the 2003 peat slide event occurred. Therefore, the construction phase of the windfarm project (including the 2003 peat slide event) could not have had an adverse effect on the Conservation Objectives for this European site, as none existed at that time the works were being undertaken.

Operational phase:

The operational phase commenced in c.2006. This was shortly before the Slieve Aughty Mountains SPA was designated for Hen Harrier and Merlin in 2007. The operational turbines and overhead grid connection to the Agannygal substation had, and could have the potential to affect the SPA Conservation Objectives and its Special Conservation Interest species.

The Slieve Aughty Mountains cover c.65,000ha and the windfarm project occupies an area of c.345ha in the N section. The windfarm site and surrounding lands were

originally covered by extensive coniferous forestry plantation over blanket bog prior to the construction of the windfarm project, and this habitat would not have been favoured by Hen harrier or Merlin. The construction works included the felling of c.220ha of trees and the cleared area gradually regenerated into a myriad of heathland habitats. The resultant mix of surrounding forestry and open heathland areas have provided optimum habitat conditions for Hen harrier and Merlin.

The various rEIAR surveys did not record the presence of Merlin in or around the windfarm site and surrounding area.

The various rEIAR surveys did not record any HH breeding activity or nests within the windfarm site or within a 0-1km radius, although nests were recorded within c.1-2km of the site boundary. The site surveys indicate that Hen harrier is a frequent visitor to the site and environs which strongly suggest that displacement has not occurred. In relation to impacts on reproductive output and collision risk with operational rotor blades, the rEIAR referenced international and Irish scientific research, and the site-specific surveys. Research into the breeding behaviour of Hen harrier shows that there were no significant differences between the breeding outputs at nest located at different distances from turbines.

The site surveys indicate that the windfarm has had no adverse effects on nests located within 1-2km of the windfarm site. Hen harrier flights are rarely recorded at collision height, as they tend to be low-flying, and there have been no documented collisions during any of the surveys. In relation to the overhead grid connection, the rEIAR referenced several studies that noted that Hen harrier inhabits open moorland areas and may hunt at heights which make them particularly vulnerable to collisions with overhead wires, which could cause an adverse effect in the absence of mitigation. The mitigation measures provide for on-going monitoring and the installation of bird flight diverters along the overhead cables to prevent collisions. These measures are considered acceptable in terms of site management and species protection.

No significant long-term adverse effects would have occurred or are anticipated to occur in respect of Slieve Aughty Mountains Hen harrier and Merlin populations in terms of habitat loss, reproductive output, displacement, or mortality. It is unlikely that site and environs, prior to the construction works and associated tree felling,

provided suitable foraging habitat for either species because of the dense nature of the conifer plantations. The c.255ha of open peatland habitat created within the site following forest clearance (and habitat regeneration) would have provided Hen harrier and Merlin with additional foraging habitat. No significant effects have occurred or are anticipated to occur during the operational phase as a result of collisions with rotor blades or overhead powerlines.

Notwithstanding this conclusion, it is noted that the Hen harrier population has declined in the SPA since it was proposed for designation in 2007. This decline could be related to a variety of factors including forestry, agriculture, recreation, and energy projects. However, given that the windfarm site occupies and very small proportion of the overall area (c.345ha of c.65,000ha) and that the works resulted in the creation of a suitable open habitat of Hen harrier, and having regard to the rEIAR bird survey results (nearby nests, on-site HH activity & no recorded collisions or fatalities), and the use of flight diverters on the overhead cables, I am satisfied that the operational phase of the windfarm project has not, and would not have an adverse effect on the Hen harrier population of the Slieve Aughty Mountains SPA.

Although Merlin was not recorded during the surveys, the creation of additional foraging habitat would have benefited this species and the flight diverters would have prevented collisions with overhead cables. I am satisfied that the operational phase of the windfarm project has not and would not have an adverse effect on the Merlin population of the Slieve Aughty Mountains SPA.

Decommissioning phase:

The decommissioning phase will commence in 2040. The works could give rise to some short-term temporary disturbance, but no significant adverse long-term effects are anticipated subject to best construction practice. However, mitigation measures should in put in place to ensure that there is no disturbance to any Hen harrier or Merlin populations in the surrounding during this phase, including pre-decommissioning site surveys and seasonality and timing of works.

Conclusions:

I am satisfied with the applicant's survey effort, which extended intermittently over the lifespan of the windfarm project, combined with the use of monitoring data

collected at the existing operational windfarm, broadly accords with relevant survey and monitoring requirements, and it contains sufficient survey data to justify the conclusion of no significant adverse effects on Hen harrier and Merlin which are the designated Special Conservation Interest species for this SPA.

It can be reasonably concluded on the basis of best scientific knowledge therefore that the windfarm project did not and would not adversely affect the integrity of Slieve Aughty Mountains SPA in view of the sites' Conservation Objectives, either on its own or in-combination with other plans and projects in the wider area.

Lough Cutra SPA:

This SPA is located c.4km to the SE of Gort and c.10km to the SW of the windfarm site, and it has been designated for its importance to Cormorant. According to the NPWS Site Synopsis, Lough Cutra is a large oligo/mesotrophic freshwater lake, the Owendalulleagh River is the main in-flowing river, woodland occurs around much of the lakeshore and the lake has several islands. It notes that Lough Cutra is a long-established breeding site for Cormorant (166 pairs in 1985) although numbers have declined in recent years (34 pairs in 1996), and the birds breed on Parsons Island and appear to commute to the coast for feeding. The rEIAR desktop studies referenced several later surveys undertaken between 2004 and 2017 (including NPWS) which indicated that although Cormorant was still present at the site, no breeding activities were recorded. Further studies identified a new breeding colony at Muckanagh Lough c.10km SW of Lough Cutra, which they may have relocated to.

The **Conservation Objective** for Lough Cutra SPA seeks to maintain or restore the favourable conservation condition of Cormorant, for which there are no specified attributes and targets.

The windfarm project is not located within this European site and there are no **direct** effects on the SPA as a result of the works.

Construction phase:

There is an indirect aquatic connection between the windfarm project and the Lough Cutra SPA site via on- and off-site watercourses and the Owendululleagh River which drains into the SE section of the lake, over an aquatic distance of c.22km. There was potential for adverse effects on water quality and aquatic ecology (including prey species) during the construction phase as a result of the unmitigated release of fine sediments during excavation work, tree felling and the 2003 peat slide event, and accidental hydrocarbon spillages from machinery.

Peat sediments were detected along the network of receiving waterbodies as far west as Kinvara Bay, including in Lough Cutra, in the immediate aftermath of the peat slide event, and a sediment plume was noted at the confluence of the lake with the in-flowing Owendululleagh River. The suspended peat sediments (acidic) could have affected the chemical balance and biological regime of the oligo/mesotrophic lake which is underlain by limestone (alkaline), the substrate condition of the lakebed (benthic smothering), and the clarity of the water (turbidity) with resultant impacts on the abundance of prey species along the food chain for Cormorant (invertebrates & fisheries). Therefore, there was potential for **indirect** effects on the Special Conservation Interest species for the SPA.

The rEIAR references several water quality and aquatic surveys that were undertaken by a range of agencies after the 2003 peat slide event and during the subsequent years. The surveys indicate that the impacts of the peat slide event on water quality and aquatic ecology (including fish mortality) along the Owendululleagh River were profound and significant, especially in the upper reaches of the river. Surveys undertaken shortly after the peat slide event in the lower reaches of the Owendululleagh River close to its confluence with Lough Cutra recorded a substantial increase in suspended sediments but only a modest decline in water quality with respect to aquatic invertebrate populations (Q4-5 to Q4). No fish kills were recorded within the lake although there may have been some localised fish mortality at the inlet area. The aquatic surveys indicate that the bulk of the peat sediments settled along the Owendululleagh River and within a c.4.0sq.km area in the S section of Lough Cutra at the in-flow from the river, which could have had a localised adverse effect on benthic communities including invertebrates and fish.

However, having regard to the overall size of the lake (c.385ha) it is unlikely that any widespread sedimentation occurred and any that did occur would have been short term and temporary, having regard to the dynamic relationship between the lake and with the in-flowing and out-flowing rivers. Similarly, the inflow of suspended acidic peat sediments would have been substantially diluted by the volume of water in the lake. Furthermore, given the time of year (October) invertebrate prey species would have been inactive and not directly affected. Therefore, having regard to the foregoing, I am satisfied that the chemical balance, biological regime and substrate condition of the lake were not affected to the extent that there would have been resultant adverse effects on the availability of invertebrate prey species for fish and thus Cormorant.

The scale of the fish kills along the Owendululleagh River would have affected population dynamics along the river and in the lake for several years, depending on species characteristics and life cycles. Cormorant has a varied diet depending on location and prey availability. Although they have preference for Eel, which was the least affected of fish species (as it does not spawn in freshwater) and was one of the first to recover, they are not dependent on it and Cormorant and is also known commute to coastal areas to forage for food.

Having regard to the various survey data referenced in the rEIAR which indicate that that the Cormorant population at Lough Cutra was in decline before the construction phase commenced and the 2003 peat slide event occurred, and to the various surveys that have been undertaken since the event, I am satisfied that the early construction phase (including the peat slide event) did not give rise to any adverse effects on the SPA and it's SCI species Cormorant.

Construction works recommenced in 2004, after extensive site investigations had been undertaken and mitigation measures were implemented to manage the trees felling and excavation works on peat slopes, and to control the release of sediments and hydrocarbons to watercourses. The rEIAR construction phase mitigation measures, which included a range of site management, sediment control and water quality protection measures ensured that any fine sediments released during the later construction phase, or any hydrocarbon contaminants resulting from accidental

spills, would not reach the SPA. I am satisfied that the later construction phase did not give rise to any adverse effects on the SPA and it's SCI species Cormorant.

In relation to the possible presence of Cormorant at the windfarm site before or during the construction phase, it is noted that the NPWS Site Synopsis states that the Lough Cutra Cormorants commute W to forage in coastal areas, and no adverse effects on this species would have occurred within the project site.

Operational phase:

The operational phases commenced in c.2006. This phase could have had and could continue to have an effect on the SPA, its SCI species Cormorant and associated aquatic prey species, as a result of ongoing maintenance works, including the access track upgrade works in c.2014. Such works could potentially affect water quality by the unregulated and/or uncontrolled release of sediments and hydrocarbons into surrounding watercourses. However, the rEIAR sediment control and water quality protection mitigation measures would have and would prevent surface and ground water contamination. The mitigation measures taken in combination with the substantial aquatic separation distance between the windfarm and European site, would have, and would continue to ensure the protection of water quality and aquatic ecology (including prey species) in Lough Cutra SPA, with no adverse effect on the SCI species Cormorant.

The windfarm site and overhead grid connection are also located a considerable distance outside the core foraging range for Cormorant, and there was not, and would not be a collision risk with the turbines, operational rotor blades or overhead power lines, or any associated fatalities.

Decommissioning phase:

The decommissioning phase will commence in 2040. This phase could have an effect on the SPA, its SCI species Cormorant and associated aquatic prey species. The works would include increased vehicular activity at the windfarm site, minor site-specific road widening and the removal of underground cables. Such works could

potentially affect water quality by the unregulated and/or uncontrolled release of sediments and hydrocarbons into surrounding watercourses. However, the rEIAR sediment control and water quality protection mitigation measures would prevent surface and ground water contamination. The mitigation measures taken in combination with the substantial aquatic separation distance between the windfarm and the European site, would ensure the protection of water quality and aquatic ecology (including prey species) in Lough Cutra SPA, with no adverse effect on the SCI species Cormorant anticipated.

Conclusion: It can be reasonably concluded on the basis of best scientific knowledge therefore that the windfarm project did not and would not adversely affect the integrity of Lough Cutra SPA in view of the sites' Conservation Objectives, either on its own or in-combination with other plans and projects in the wider area.

Lough Cutra SAC:

This SAC has been designated for its importance to Lesser horseshoe bat. The NPWS Site Synopsis description of Lough Cutra is summarised above for the SPA. The Owendalulleagh River is the main in-flowing river to the c.385ha lake. A series of connected woodlands on the W side of the lake provide foraging habitat for the Lesser horseshoe bats which roost at the site. Between 1999 and 2001 up to 93 bats have been recorded in hibernation at Lough Cutra Castle and it is thought likely that a summer nursery roost also occurs here. The rEIAR referenced several subsequent field surveys which indicate that the general bat numbers at the roost have either increased or remained stable since the first count in 1987. Survey data indicates that the population remained stable after the windfarm was constructed, and the presence of 142 individuals in 2010, and 129 in 2018 was recorded.

The **Conservation Objectives** for the SAC seeks to restore the favourable conservation condition of this species subject to a list of attributes and targets (including Population numbers; Number of roosts; Condition of roosts (winter/ summer/auxiliary); Foraging habitat & Linear features [within 2.5km]; and Light pollution [within 2.5km]).

The windfarm project is not located within this European site and there are no **direct** effects on the SAC as a result of the works.

Construction phase:

There is an indirect aquatic connection between the windfarm project and the Lough Cutra SAC site via on- and off-site watercourses and the Owendululleagh River which drains into the SE corner of the lake. There was potential for adverse effects on water quality and aquatic ecology during the construction phase (including the tree felling, excavations & 2003 peat slide event) as a result of the unmitigated release of fine sediments to surface and ground water during construction work, and hydrocarbons by way of accidental spillages from machinery.

Peat sediments were detected along the network of receiving waterbodies as far west as Kinvara Bay, including at Lough Cutra, in the immediate aftermath of the peat slide event, and a sediment plume was noted at the confluence of the Owendululleagh River and the lake. Sediment contamination could have affected the chemical balance, biological regime, and substrate conditions within Lough Cutra, with resultant impacts on the abundance of invertebrate prey species for Lesser horseshoe bat. Therefore, there was potential for **indirect** effects on the Qualifying Interest species.

As previously stated in relation to the Lough Cutra SPA, the rEIAR referenced several water quality and aquatic surveys that were undertaken by a range of agencies immediately after the 2003 peat slide event and in the subsequent years. The surveys indicate that the impacts of the peat slide event on water quality and aquatic ecology along the Owendululleagh River were profound and significant, especially in the upper reaches of the river. However, surveys undertaken shortly after the peat slide event in the lower reaches of the Owendululleagh River close to its confluence with Lough Cutra recorded a substantial increase in suspended sediments but only a modest decline in water quality with respect to aquatic invertebrate populations (Q4-5 to Q4). The surveys indicate that the bulk of the peat sediments settled along the Owendululleagh River and within a c.4.0sq.km area in

the S section of Lough Cutra at the in-flow from the river, which could have had a localised impact on benthic communities (including invertebrates).

Having regard to the overall size of the lake (c.385ha) it is unlikely that any widespread sedimentation occurred and any that did occur would have been short term and temporary, having regard to the dynamic relationship between the lake and with the in-flowing and out-flowing rivers. Similarly, the inflow of suspended acidic peat sediments would have been substantially diluted by the volume of water in the lake with no resultant adverse impacts on invertebrate prey species. Given the time of year (October) it is likely that invertebrate species would have been inactive. Therefore, having regard to the foregoing, I am satisfied that the chemical balance, biological regime and substrate condition of the lake were not affected to the extent that there would have been resultant adverse effects on the availability of invertebrate prey species for Lesser horseshoe bat.

Having regard to the various rEIAR referenced surveys that were undertaken after the 2003 peat slide event which indicate a stable and/or increasing bat population, I am satisfied that none of the key attributes or targets for the QI species Lesser horseshoe bat (including Population numbers; Number of roosts; Condition of roosts (winter/ summer/auxiliary); Foraging habitat & Linear features [within 2.5km]; and Light pollution [within 2.5km]) would have been adversely affected during the early construction phase, including the 2003 peat slide event. It is also noted from the maps contained in the NPWS Conservation Objectives document, that the foraging area for Lesser horseshoe bat extends a considerable distance to the SW of the site and well away from the SE section of Lough Cutra where peat sediments occurred.

Construction works recommenced in 2004, after extensive site investigations had been undertaken and mitigation measures were implemented to manage the tree felling and excavation works on peat slopes and to control the release of sediments and hydrocarbons to watercourses. The rEIAR construction phase mitigation measures, which included a range of site management, sediment control and water quality protection measures ensured that any fine sediments released during the later construction phase, or any hydrocarbon contaminants resulting from accidental spills, would not reach the SAC. Having regard to the various rEIAR referenced surveys that were undertaken after the 2003 peat slide event which indicate a stable

and/or increasing bat population, I am satisfied that none of the key attributes or targets for the QI species Lesser horseshoe bat (as summarised above) would have been adversely affected during the later construction phase.

In relation to the possible presence of Lesser horseshoe bat at the windfarm site before or during the construction phase, it is noted that the site is well outside the foraging range of the Lough Cutra Lesser horseshoe bats, and no adverse effects on this species or the SAC would have occurred within the project site.

Operational phase:

The operational phase commenced in c.2006. This phase could have had and could continue to have an effect on the SAC, its QI species Lesser horseshoe bat and associated aquatic prey species, related to ongoing maintenance works, including the access track upgrade works in c.2014. Such works could potentially affect water quality by the unregulated and/or uncontrolled release of sediments and hydrocarbons into surrounding watercourses. However, the rEIAR sediment control and water quality protection mitigation measures would have and would prevent surface and ground water contamination. The mitigation measures taken in combination with the substantial aquatic separation distance between the windfarm and European site, would have, and would continue to ensure the protection of water quality and aquatic ecology (including prey species) in Lough Cutra SAC, with no adverse effect on the QI species Lesser horseshoe bat.

The windfarm site and overhead grid connection are also located a considerable distance outside the core foraging range for Lesser horseshoe bat, and there was not, and will not be a collision risk with the turbines, operational rotor blades or overhead power lines, or any associated fatalities. The rEIAR post construction monitoring during the operational phase would continue to protect water quality. None of the key attributes or targets for Lesser horseshoe bat (as summarised above) were, or would be adversely affected during the operational phase.

Decommissioning phase:

The decommissioning phase will commence in 2040. This phase could have an effect on the SAC, its QI species Lesser horseshoe bat and associated aquatic prey

species. The works would include increased vehicular activity at the windfarm site, minor site-specific road widening and the removal of underground cables. Such works could potentially affect water quality by the unregulated and/or uncontrolled release of sediments and hydrocarbons into surrounding watercourses. However, the rEIAR sediment control and water quality protection mitigation measures would prevent surface and ground water contamination. The mitigation measures taken in combination with the substantial aquatic separation distance between the windfarm and the European site, would ensure the protection of water quality and aquatic ecology (including prey species) in Lough Cutra SAC, with no adverse effect on the QI species Lesser horseshoe bat anticipated.

The windfarm site is also located well outside the core foraging range for Lesser horseshoe bat and the decommissioning works would not cause a disturbance to this species. None of the key attributes or targets for Lesser horseshoe bat (summarised above) would be adversely affected during the decommissioning phase.

Conclusion: It can be reasonably concluded on the basis of best scientific knowledge therefore that the windfarm project did not and would not adversely affect the integrity of the Lough Cutra SAC in view of the sites' Conservation Objectives, either on its own or in-combination with other plans and projects in the wider area.

Coole-Garryland Complex, Caherglassaun & Cahermore Turloughs SACs:

There may be an indirect aquatic connection between the windfarm project and several European sites located to the W of the project which are designated for Turloughs. The windfarm site has an indirect aquatic connection to some of these sites via on- and off-site watercourses which drain to the Owendululleagh and Boleyneendorrish Rivers to the S and N of the windfarm site. Three of these sites have been screened in for further assessment because they may be linked to the windfarm site via the Owendululleagh River, which was affected by the 2003 peat slide event during the early construction phase.

The Coole-Garryland Complex SAC is situated in a low-lying karstic limestone area W of Gort, in Co. Galway. It contains a series of seasonal lakes (turloughs), which are fed by springs and a partly submerged river, surrounded by woodland, pasture

and limestone heath. It is interconnected with Cahermore Turlough SAC and Caherglassaun Turlough SAC to the NW of Gort and SE of Kinvarra.

The **Conservation Objectives** for the Caherglassaun and Cahermore Turloughs seek to restore the favourable conservation condition of these habitats which are defined by a list of attributes and targets (including Habitat area & distribution; Hydrological regime; Physical structure; Soil type & nutrient status; Chemical processes; Water quality; Active peat formation; Vegetation structure & species; and Fringing habitats). There are no Attributes and Targets specified for the Coole-Garryland Complex.

The windfarm project is not located within this European site and there are no **direct** effects on the SACs as a result of the works.

Construction phase:

The 2003 peat slide event affected the Owendululleagh River which flows into Lough Cutra to the SW of the windfarm site over an aquatic distance of c.22km. The lake is in turn drained by watercourses that ultimately discharge to the sea at Kinvara Bay via a series of Turloughs at Caherglassaun, Cahermore and the Coole-Garryland Complex SACs. This connection would be via on- and off-site watercourses, the Owendululleagh River, Lough Cutra and the Beagh/Gort River systems. There was potential for adverse effects on water quality during the construction phase (including the tree felling, excavations & 2003 peat slide event) as a result of the unmitigated release of fine sediments to surface and ground water during construction work and hydrocarbons by way of accidental spillages from machinery.

Fine peat sediments were detected along the network of receiving waterbodies as far west as Kinvara Bay, to the NW of Lough Cutra and the Turloughs, in the immediate aftermath of the peat slide event. Given that Turloughs are karst/limestone features which are alkaline, an influx of acidic peat sediments had the potential to affect the chemical composition of water flowing through the Turloughs.

The various aquatic surveys undertaken after the peat slide event, indicate that the bulk of the peat sediments settled along the Owendululleagh River and within a c.4.0sq.km area in the S section of Lough Cutra. Although some fine peat sediments traversed the Turloughs en-route to Kinvara Bay, it is likely that the concentration of suspended sediments would have been highly diluted by this stage, and that any material would have been flushed out shortly after. Construction works recommenced in 2004, after extensive site investigations had been undertaken and mitigation measures implemented to manage the tree felling and excavation works on peat slopes and to control the release of sediments to watercourses.

Having regard to the substantial separation distance with the source of the peat slide event, the recorded deposition rates along the Owendululleagh River and in Lough Cutra, along with the volume of water that was discharging through the underground system and expected flow velocities for the time of year (late October), I am satisfied that the construction phase (including the peat slide event) did not have any significant adverse effects on any of the European sites that are designated for Turloughs.

In relation to the other Qualifying Interests for the ***Coole-Garryland SAC*** (including Limestone pavements), I am satisfied that construction works (including the peat slide event) did not have an adverse effect on any of the remaining habitats and species for which this site was designated, having regard to the nature of the Qualifying Interests, the separation distance from the peat slide source, the recorded sediment deposition rates, and the dilution properties of the receiving waterbodies.

In relation to the other Qualifying Interests for the ***Caherglassaun Turlough*** SAC (including Rivers with muddy banks [with Chenopodion rubri & Bidention vegetation] & Lesser horseshoe bat), I am satisfied that construction works (including the peat slide) did not have an adverse effect on any of the remaining habitats and species for which this site was designated, having regard to the nature of the Qualifying Interests, the separation distance from the peat slide source, the recorded sediment deposition rates, the dilution properties of the receiving waterbodies and the location of the windfarm site well outside of the core foraging range for Lesser horseshoe bat.

Operational phase:

The operational phases commenced in c.2006. This phase did not and would not have an adverse effect on the SACs and their Qualifying Interest habitats and species, having regard to the substantial aquatic separation distance between the windfarm project and these sites, which is also well outside the core foraging range for Lesser horseshoe bat (QI species for Caherglassaun Turlough SAC).

Decommissioning phase:

The decommissioning phase will commence in 2040. The works could have the potential to release sediments into nearby watercourses because of increased vehicular activity at the windfarm site, minor road widening and the removal of underground cables. No adverse effects are anticipated subject to best construction practice and the implementation of sediment control mitigation measures, and having regard to the substantial aquatic separation distance between the windfarm site and the European sites, which is also located well outside the core foraging range for Lesser horseshoe bat (QI species for Caherglassaun Turlough SAC).

Conclusion: It can be reasonably concluded on the basis of best scientific knowledge therefore that the windfarm project did not and would not adversely affect the integrity of the Turlough SACs in view of the sites' Conservation Objectives, either on its own or in-combination with other plans and projects in the wider area.

Remedial Appropriate Assessment Conclusion:

I am satisfied that the windfarm project did not, and would not have any adverse effects (direct, indirect or in-combination) on the Conservation Objectives, Qualifying Interests or Special Conservation Interests for the Slieve Aughty Mountains SPA, Lough Cutra SPA, Lough Cutra SAC, Coole-Garryland Complex SAC, Caherglassaun Turlough SAC, Cahermore Turlough SAC, or for any other European Site.

8.5 Remedial 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

development, individually or in combination with other plans or projects did not and would not adversely affect the integrity of the European site Nos. 004168, 004056, 000299, 000252, 000238 and 002294, or any other European site, in view of the site's Conservation Objectives.

9.0 RECOMMENDATION

I recommend that Substitute Consent should be granted for the Derrybrien windfarm project for the reasons and considerations set down below, subject to compliance with the attached conditions and in accordance with the following Draft Order.

Reasons and considerations

Having regard to:

a. The National Planning Framework - Ireland 2040,
b. The Climate Action Plan, 2019,
c. The Regional Spatial & Economic Strategy for the Northern & Western Region 2022,
d. the "Wind Energy Development Guidelines - Guidelines for Planning Authorities", issued by the Department of the Environment, Heritage and Local Government in 1996 and 2006,
e. the policies of the planning authority as set out in the Galway County Development Plans, 1997-2003, 2003-2009 and 2015-2021,
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 retain the windfarm project and the likely significant effects of the windfarm project on European Sites, and
i. the report and recommendation of the Inspector.

Remedial Appropriate Assessment:

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

Remedial Environmental Impact Assessment:

The Board completed a remedial environmental impact assessment of the windfarm project taking account of:

(a) the nature, scale, location, and extent of the windfarm project on a site,

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

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

(d) the Inspector's report.

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

The Board considered that the main significant direct and indirect effects of the windfarm project on the environment were, and are as follows:

- The peat instability and peat erosion that occurred during the early stage of the construction phase, and the risk of peat instability and peat erosion during the later construction, operational and decommissioning phases which were, and would be mitigated by the implementation of measures set out in the Environmental Impact Assessment Report (rEIAR) which include specific provisions relating to peat and spoil management.
- The pollution of surface waters that occurred during the early stage of the construction phase, and the risk of pollution of ground and surface waters during the later construction, operational and decommissioning phases which were and would be mitigated by the implementation of measures set out in the Environmental Impact Assessment Report (rEIAR) which include specific provisions relating to groundwater, surface water and peat erosion.
- Biodiversity impacts, including on aquatic habitats and species that occurred during the early stage of the construction phase, and the risk of biodiversity impacts, including on habitats, otters, birds, bats, fisheries and aquatic invertebrates during the later construction, operational and decommissioning phases which were, and would be mitigated by the implementation of specific mitigation measures to protect habitats and species.
- Noise, vibration, dust and shadow flicker during the construction, operational and decommissioning phases which were, or would be avoided by the implementation of the measures, including mitigation measures set out in the Environmental Impact Assessment Report (rEIAR) which include specific provisions relating to the control of dust, noise and shadow flicker.
- The increase in vehicle movements and resulting traffic during the construction and decommissioning phase were and would be mitigated by traffic management measures and the preparation of a Traffic Management Plan.

- Landscape and visual impacts during the operational phase from the insertion of the turbines, met masts and overhead cables into the upland setting, the location and siting of which would assist in assimilating the works into the landscape.
- The impact on cultural heritage was and would be mitigated by archaeological monitoring.
- Positive environmental impacts would arise during the operational phase from the generation of renewable energy.

The Board completed a remedial environmental impact assessment in relation to the windfarm project and concluded that, any impacts on the environment that occurred during the early stages of the construction phase were temporary and short to medium term in duration following the implementation of remedial measures, and subject to the implementation of the mitigation measures proposed as set out in the rEIAR, and subject to compliance with the conditions set out below, the effects of the windfarm project on the environment, by itself and in combination with other plans and projects in the vicinity, were, and would be acceptable. In doing so, the Board adopted the report and conclusions of the Inspector.

Proper planning and sustainable development:

It is considered that subject to compliance with the conditions set out below the windfarm project would accord with European, national, regional, and local planning and related policy. It did not and would not have an unacceptable impact on the landscape or visual amenity, it did not and would not seriously injure the visual or residential amenities of the area or of property in the vicinity, and it was and would be acceptable in terms of traffic safety and convenience. Following the implementation of remedial measures, the windfarm project did not and would not have a long-term impact on ecology and biodiversity. The windfarm project was, and would, therefore, be in accordance with the proper planning and sustainable development of the area.

10.0 CONDITIONS

1. The development shall be retained, operated, and decommissioned in accordance with the plans and particulars lodged with the application, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority and the development shall be retained and completed in accordance with the agreed particulars.
   Reason: In the interest of clarity.

2. This permission shall be for a period of 40 years from the date of the first commissioning of the wind farm project.
   Reason: In the interests of the proper planning and sustainable development of the area.

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

4. The developer shall ensure that all peat related mitigation measures are monitored throughout the entire life cycle of the project and are implemented in full for the decommissioning works.
   Reason: In the interest of protection of the environment.

5. Shadow flicker arising from the windfarm project shall not exceed 30 minutes in any day or 30 hours in any year at any dwelling.
   Reason: In the interest of residential amenity.

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

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

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

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

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

   The developer shall submit to and agree in writing with the planning authority a noise compliance monitoring programme for the continued operation of 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 this Order.
   Reason: In the interest of residential amenity.

7. The developer shall retain the services of a suitably qualified and experienced Civil Engineer and Ecologist for the duration of the decommissioning works in order to prevent damage to the integrity or stability of the peatland environment.
   Reason: In the interest of protecting the environment.

8. The developer shall retain the services of a suitably qualified and experienced bird specialist with respect to Hen Harrier to continue undertaking appropriate monthly surveys of this site. Details of the surveys to be undertaken and associated reporting requirements shall be developed following consultation and agreement in writing with the planning authority within 6 months of the date of this Order. These reports shall be submitted on an agreed date annually for the full duration of the windfarm project, with the prior written agreement of the planning authority. Copies of the reports shall be sent to the Department of Housing, Local Government and Heritage (National Parks and Wildlife Service).
   Reason: To ensure appropriate monitoring of the impact of the development on Hen Harrier.

9. In the event that the windfarm 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 within 6 months of the date of this Order, following consultations with the relevant authorities.
   Reason: In the interest of protecting telecommunications signals and of residential amenity.

10. Prior to commencement of decommissioning works, a transport management plan for the 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, including over-sized loads, and detailed arrangements for the protection of bridges, culverts, or other structures to be traversed, as may be required. The plan should also contain details of how the developer intends to engage with and notify the local community in advance of the removal of oversized loads. All works to the public road network shall be at the developer's expense.
    Reason: In the interest of traffic safety.

11. Prior to commencement of decommissioning works, 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 decommissioning works should be thoroughly cleaned and washed before arrival at 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.

12. 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 masts, 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 24 months of decommissioning or cessation of operation.
    Reason: To ensure satisfactory reinstatement of the site upon full or partial cessation of the project.

13. Standard financial contribution (for repair of public roads after decommissioning).

14. Standard bond condition (to ensure satisfactory reinstatement of the site after decommissioning).

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Karla Mc Bride
Senior Planning Inspector
12th March 2021