

Ballyfeeny Green Energy Project



Environmental Impact Assessment Report Volume VI

Natura Impact Statement (NIS)

September 2025

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Ballyfeeny Green Energy Limited

Ballyfeeny Green Energy Project

AA Screening & Natura Impact Statement

August 2025

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It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Quality Assurance

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The findings outlined within this report and the data we have provided are to our knowledge true and express our bona fide professional opinions. This report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) good practice guidelines. Where pertinent CIEEM Guidelines used in the preparation of this report include the *Guidelines for Ecological Report Writing* (CIEEM, 2017a), *Guidelines for Preliminary Ecological Appraisals* (CIEEM, 2017b) and *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine*, (CIEEM, 2024). CIEEM Guidelines include model formats for Preliminary Ecological Appraisal and Ecological Impact Assessment. Also, where pertinent, evaluations presented herein take cognisance of recommended Guidance from the EPA such as *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (EPA, 2022), and in respect of European sites, *Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (European Commission, 2018).

Due cognisance has been given at all times to the provisions of the *Wildlife Acts 1976-2024*, the *European Union (Natural Habitats) Regulations*, the *European Communities (Birds and Natural Habitats) Regulations 2011-2021*, EU Regulation on Invasive Alien Species under *EU Regulation 1143/2014*, the *EU Birds Directive 2009/147/EC* and *Habitats Directive 92/43/EEC*.

No method of assessment can completely remove the possibility of obtaining partially imprecise or incomplete information.

Version	Date			Name	Signature
Final	10/09/2025	Report signed off by:		Dr Alex Copland BSc PhD MEnvSc MCIEEM	
Project Reference	2232C	Title	Ballyfeeny Green Energy Project: AA Screening and Natura Imp[act Statement		

Notice

This report was produced by INIS Environmental Consultants Ltd. (INIS) on behalf of Ballyfeeny Green Energy Limited (hereafter known as the Applicant) to accompany **EIAR Chapter 6 - Biodiversity** for the Ballyfeeny Green Energy Project. The purpose of this report is to assess impacts to Natura 2000 sites arising from the Ballyfeeny Green Energy Project and associated pathways, with all reasonable skill, care and due diligence within the terms of the contract with the client, incorporating our terms and conditions and taking account of the resources devoted to it by agreement with the client.

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1. INTRODUCTION

This combined Appropriate Assessment Screening Report (AA) and Natura Impact Statement (NIS) report has been prepared by Inis Environmental Consultants Ltd. (INIS) in relation to the proposed **Ballyfeeny Green Energy Project** (the 'Project'). The purpose of this reporting is to determine whether the proposed Project, based on best scientific knowledge, will have an adverse effect on the integrity of a European site, either alone or in combination with other plans and projects.

The initial element of this report is Appropriate Assessment Screening (Stage 1). The purpose of AA Screening is to assess potential connectivity between the Project and European sites and determine the likelihood of significant effects (LSEs) of the Project upon designated European sites.

Where significant effects are unknown, ambiguous or are considered likely in view of the Qualifying Interests (QIs) or Special Conservation Interests (SCIs) and the respective Site-Specific Conservation Objectives (SSCOs) of relevant European sites, they cannot be screened out during Stage 1. In this case, Appropriate Assessment (Stage 2, aka Natura Impact Statement (NIS)) is required to identify any potential adverse effects on the integrity of the European sites.

Where Appropriate Assessment (AA Stage 2 aka NIS) identifies the potential for adverse effects on the integrity of a European site, the NIS section of this report prescribes mitigation measures in relation to the identified adverse effects on the site's integrity. This report is conducted in line with the requirements of Article 6(3) of the EU Habitats Directive (92/43/EEC) and the National Parks and Wildlife Service (NPWS) Guidance for Planning Authorities (2010).

The preparation of this NIS report has had regard to current legislation and best practice guidance (as described in section 3.3 of this report), and supplementary data obtained during a desk study and multidisciplinary ecology surveys including bird, bat, otter and other mammal, habitat and aquatic habitat surveys undertaken by Inis Environmental Ecologists on the site and environs (up to 2km buffer), between Spring 2023 and Autumn 2024. The Appropriate Assessment (AA) Screening Report and Natura Impact Statement (NIS), is accompanied by an Environmental Impact Assessment Report (EIAR), the assessment of effects on ecological features not relating to European sites is provided in the **EIAR Chapter 6 – Biodiversity**. Although the purpose of the assessment are different the data derived in the course of both exercises has informed the preparation of this NIS.

1.1. Legislative Context

Approximately 10% of the land area of Ireland is included within the network of European Sites, which includes Special Protection Areas (SPAs) to protect important areas for birds, and Special Areas of Conservation (SACs) to protect a range of habitats and species. Legal protection for these sites is provided by the Birds Directive and Habitats Directive, as amended), which are jointly transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

Article 6(3) of the Habitats Directive requires that, in relation to European designated sites (i.e. SACs and SPAs that form the Natura 2000 network):

"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".

These obligations in relation to AA have been implemented in Ireland under Part XA of the Planning and Development Act 2000, as amended ("the 2000 Act"), and in particular Section 177U and Section 177V thereof. The relevant provisions of Section 177U in relation to AA screening have been set out below:

"177U.— (1) A screening for appropriate assessment of a draft Land use plan or application for consent for Proposed Development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or Proposed Development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site.

(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site."

A competent authority must determine that an AA is required in respect of any European site where, following screening, it cannot be excluded that the plan or project will have a significant effect on the European site, in view of its conservation objectives. Under article 6(4) of the Habitats Directive, if adverse impacts are likely, and in the absence of alternative options, a plan or project must nevertheless proceed for imperative reasons of overriding public interest (IROPI), including social or economic reasons, a Member State is required to take all compensatory measures necessary to ensure the overall integrity of the European Site. The European Commission must be informed of any compensatory measures adopted, unless a priority habitat type or species is present and likely to be adversely impacted or lost, in which case an opinion from the European Commission is required beforehand (unless for human health or public safety reasons, or if it is of benefit to the environment).

This report has been prepared with regard to the following legislation:

- Directive 92/43/EC (as amended) of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive");
- Directive 2009/147/EC (as amended) of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the "Birds Directive");
- European Communities (Birds and Natural Habitats) Regulations 2011-2021 (as amended); and
- Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats Directive' 92/43/EEC, (European Commission, 2018);
- Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment;

- Directive 2014/52/EU of the European Parliament and to the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

1.2. Statement of Authority

Mr. Conor Daly authored this report under the direction of Dr Alex Copland. Ms. Laura Stenson co-authored this report. Dr Alex Copland reviewed and revised this report.

Dr Alex Copland BSc PhD MEnvSc MCIEEM is Technical Director with INIS. He has over 30 years of professional experience working in both statutory and private companies, in third-level research institutions and with environmental NGOs. He is a full member of the Institute of Environmental Sciences (IES) and the Chartered Institute of Ecology and Environmental Management (CIEEM). He is proficient in experimental design and data analysis and has managed several large-scale, multi-disciplinary ecological projects, managing staff and resources to meet budgetary constraints and the successful delivery of projects on time. These have included research and targeted management work for species of conservation concern, ecological assessments (including fieldwork and reporting) for large-scale infrastructure projects (including Strategic Infrastructure Developments) and delivering successful planning outcomes, the design and delivery of practical conservation actions with a range of stakeholders and end-users, education and interpretation on the interface between people and the environment and the development of coordinated, strategic plans for birds and biodiversity. In relation to windfarms, Alex has overseen the delivery of technical (ecology) inputs into eight windfarm EIAR chapters in Ireland, totalling nearly 100 turbines and a generation capacity exceeding 350MW. He has written numerous scientific papers, developed and contributed to evidence-based position papers, visions and strategies on birds and habitats in Ireland. He also sits on the Editorial Panel of the scientific journal, Irish Birds, which publishes original ornithological research relevant to Ireland's avifauna, and CIEEM's Irish Policy Group.

Mr. Conor Daly MSc BSc is an Ecologist with Inis Environmental Consultants Ltd. Conor was awarded a MSc in Biodiversity and Conservation and an Honours BSc in Zoology. As part of his BSc and MSc, Conor has compiled reports for environmental impact assessments and conservation management. As an ecologist, Conor has written Preliminary Environmental Assessments (PEA) and Appropriate Assessment (AA) Screening reports during his career prior to Inis for large and complex windfarms in Co. Offaly and water sourcing projects across Ireland. As an ecologist with INIS, Conor has been involved in conducting a range of reports, including AA Screenings, Natura Impact Statements (NIS), and Environmental Impact Assessment (EIA) Screenings for windfarms of small scale (4-8 turbines) and large scale (22 turbines) which involved complex mitigation measures including curtailment for bat species and breach management for HDD works crossing under SAC river watercourses. As INIS Reporting Team Lead, Conor oversees the report template standard and has ensured the INIS team's report writing is in line with CIEEM best practice guidance in accordance with the registered practice code of conduct.

Ms. Laura Stenson BSc is an Ecologist with Inis Environmental Consultants Ltd. Laura has an honours BSc in Earth and Ocean Sciences from University of Galway and has three years' experience working in consultancy. Laura has extensive report writing experience, which includes the production, review and editing of Appropriate Assessment Screening Reports (AA), Natura Impact Statements (NIS) and Ecological Impact Assessments (EIA). She has experience in multi-disciplinary surveys, including

habitat classification, mammal surveys, various bird surveys (e.g. Wintering and Breeding birds, I-WeBS, Adapted Brown & Shepherd), invasive species surveys, pre-construction mammal surveys, Ecological Clerk of Works, and bat surveys. Laura is currently in the process of applying for a Qualifying level membership with the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.3. Constraints and Limitations

The environmental outline and baseline ecology information for this AA was based on information provided by the Client regarding the site layout with desk study information sourced from several governmental body and ecological databases and extensive field studies for all likely ecological receptors following Best Practice guidance to inform the receiving environment. The information provided in this report accurately and comprehensively describes the ecological baseline of the Project and provides a prediction of the likely ecological effects of the Project, along with prescriptions for mitigation. The specialist studies, analysis, reporting, and assessment methodologies have all been undertaken in accordance with the appropriate guidelines. No significant limitations in relation to the scope, scale, or context of the impact assessment have been identified.

There are several limitations inherent to field-based surveying. These particularly relate to suitable weather conditions for completing surveys, with good visibility and little wind or rain. When undertaking and completing fieldwork, careful consideration and planning is required to ensure optimal weather conditions during survey periods. The results collected for this report were all collected in suitable weather conditions for survey work.

In summary, it is considered that no significant constraints exist; the desk study and survey data provide accurate detail on the baseline biodiversity in relation to avifauna within the Project and environs, and the analysis represents an accurate assessment of effects and impacts from the Project.

2. DESCRIPTION OF THE PROJECT

2.1. Location of the Project

The proposed wind farm site is located at Ballyfeeny (also known as Ballyfeeney) and Tully, Co. Roscommon, c.4.5km northeast of Strokestown and 15km northwest of Longford town, positioned at Irish grid reference c. E598813 N782007 ITM (see **Figure 1**) The site encompasses approximately 55.827 hectares (ha) and is accessed off the R371 road.

The Site has an elevation of approximately 70m Above Ordnance Datum (AOD) at its lowest to approximately 124m AOD at its highest elevation. Analysis of the coarse topographic information indicates that the proposed Project straddles the top and lower eastern flank of a small hill and sits on lands that generally slope to the east in the cases of Turbines T02, T03, T04, T05 and T06. Lands slope to the south and east at T01 and are generally flat at the Onsite Substation.

The proposed wind farm Site consists of areas of forestry, portions of agricultural grassland and pastureland for cattle together with parcels of mature and private forestry. Additionally, an adjacent active quarry—known as Ballyfeeney Rock Quarry—exists on the western boundary of the Site. Two watercourses run adjacent to the boundaries of the proposed Site, known as the Culliagh Stream and Ballymartin Stream. Dominant habitats within the Site include hedgerows, treelines and drainage ditches.

The current land use on the wider environment Project consists of agricultural pastureland and some forestry. To the northeast of the site is a mineral extraction site. Temporal regression through the EPA Corine datasets shows gradual change in land use in the wider environment of the site beginning in the 2000 – 2006 Corine dataset. What was previously mapped as 324-Transitional Woodland and Scrub transitions to 131- Mineral Extraction. Hence, the wider landscape character is one of increased industrial development within a largely rural setting.

Annaghmore Lough lies approximately 6.4km to the west of the site boundary and is designated as a Special Area of Conservation (SAC). Lough Forbes lies approximately 7.4km to east (in a straight line) of the site boundary and is also designated as an SAC. This area is also designated as a Special Protection Area (SPA), named Ballykenny-Fisherstown Bog SPA.

2.2. Description of the Project

This AA/NIS is prepared support of a planning application sought by Ballyfeeny Green Energy Limited (the ‘Applicant’) for the development of a wind farm and associated infrastructure in Ballyfeeny and adjacent townlands, County Roscommon.

The proposed wind energy development comprises six wind turbines and all associated infrastructure including Turbine Foundations, Turbine Hardstands, Site Access Tracks, Wind Farm Internal Cabling, Relay Tower, Onsite Substation and all associated infrastructure. The proposed development also includes the underground grid connection from the Onsite Substation along the public road network, to where the R371 meets the Sliabh Bawn Substation Road (hereafter the proposed ‘Development’).

For the purposes of this AA/NIS, the works required within the existing Sliabh Bawn 110kV Substation and works to install the underground grid connection, along the Sliabh Bawn Substation Road to where it meets the R371, have been included as part of the assessment. However, these works will be subject

to a separate planning permission and do not form part of this planning application. The underground grid connection works within the planning application Redline Boundary (RLB), the works required within the existing Sliabh Bawn 110kV Substation and along the Sliabh Bawn Substation Road to the R371, are collectively known as the Grid Connection Route (GCR).

The AA/NIS also presents an assessment of temporary accommodating works required along the public road network from the port of origin in Galway Port, to facilitate the delivery of turbine components to the wind farm Site. Two route options have been assessed in full within the EIAR. These routes collectively are referred to as the Turbine Delivery Route (TDR). These temporary accommodating works are assessed in this AA/NIS, however, do not form part of this planning application.

For this AA/NIS the proposed Development, the works for the underground grid connection within the existing Sliabh Bawn 110kV Substation and along the Sliabh Bawn Substation Road to the R371 and the temporary accommodating works along the TDR, are hereafter referred to as the proposed 'Project'. A full and detailed description of the proposed Development for the purposes of the planning application and the additional elements that form part of the overall Project assessed in this AA/NIS, is contained in **EIAR Chapter 2 – Project Description**.

The main components of the proposed Project will comprise of:

- The construction and operation of a wind farm consisting of six wind turbines;
- The turbine specification is unconfirmed but will fall within the parameter range outlined by Roscommon County Council and will be one of the following three Options;
 - Technology Option 1: tip height of 160m, rotor diameter of 136m and hub height of 92m; or
 - Technology Option 2: tip height of 156m, rotor diameter of 133m and hub height of 90m; or
 - Technology Option 3: tip height of 159m, rotor diameter of 138m and hub height of 90m;
- Construction of Turbine Hardstands (including crane and assembly areas) and Turbine Foundations;
- Construction of approximately 3.9km of new permanent internal Site Access Tracks and the upgrade of 0.5km of existing internal access tracks;
- Construction of a permanent 38kV Onsite Substation, including one single story substation building with welfare facilities, Lidar, diesel generator and fuel storage tank, all associated electrical plant and equipment, all associated underground cabling, rainwater harvesting and storage tank, wastewater holding tank, security fencing, gates, signage, and all ancillary structures and works;
- Installation of underground electrical and communications cabling connecting the wind turbines to the proposed 38kV Onsite Substation;
- Construction, of two Temporary Construction Compounds with associated site offices, welfare facilities, car parking, site fencing and lighting;
- Erection of a permanent 30m high Communications Relay Tower;

- Construction access via six site entrances (SE1 – SE6) to include:
 - SE1 on the R371, SE2 and SE3 on the L6018, and SE4, SE5 and SE6 on the L60498;
 - SE1 and SE6 are temporary and will be reinstated following construction. SE1 may be re-established if required for turbine component repair or replacement. SE2 – SE5 will be retained permanently for operational access;
- Tree felling to facilitate the construction and operation of the proposed Project;
- Installation of approximately 5.8km of permanent underground electrical cabling for the Grid Connection Route including cabling within the public road corridor, extending from the proposed onsite 38kV Substation at Ballyfeeny to end at the existing Sliabh Bawn 110kV Substation in the townland of Bunnageddy (also known as Runnageddy);
- All associated site works, including site clearance, landscaping, site drainage, security gates, fencing, permanent and temporary signage and biodiversity mitigation and enhancements, including hedgerow and treeline planting.
- Temporary accommodating works along the TDR, to facilitate turbine delivery from the port of entry at the Port of Galway to the wind farm site entrance (SE1) at Ballyfeeny, via Lough Atalia Road, College Road, R339, R685, N6, M6, M18, M17, N17, N5 (New N5 Ballaghadereen to Scramoge Road Project) and the R371

The Applicant is seeking a 10-year planning permission and 35-year operational life, initiating from the date of full commissioning of the entire wind farm. The development is covered by the provisions of the Renewable Energy Directive III (Directive 2023/2413).

The planning application is subject to section 34D of the Planning and Development Act, 2000, as amended. When a notice issues in accordance with section 34D(b), the provisions of article 26A of the Planning and Development Regulations 2001 to 2025 shall apply.

2.2.1. Approach to Design Flexibility

The Applicant is applying for design flexibility in accordance with Section 32I and 32H of the Planning and Development Act 2000 (as amended). A design flexibility meeting request was made by the Applicant (**Appendix 1.4 – Design Flexibility Meeting Request**) to the Local Authority on the 17th of April 2025. A meeting was held between the Applicant and the Local Authority on the 12th of May 2025. The Local Authority issued a notification of opinion on design flexibility with regard to application for permission on 10th of June 2025 (**Appendix 1.5 - DFR-25-1 - Notification of Opinion by LA**).

As part of the opinion by the Local Authority the following was outlined;

“The Parameters within which the turbine specifications will fall are as follows:

- *Turbine total tip height range of 156m – 160m*
- *Turbine Rotor diameter range of 136m – 138m*

- *Turbine Hub Height range of 90m – 92m*

The applicant is advised to provide with the application the most robust information in respect to the turbine tip height, turbine rotor diameter and turbine hub height within the EIAR which assesses the effects associated with the design flexibility parameters sought.”

With respect to the notification of opinion by the Local Authority, this AA/NIS, has considered three distinct Technology Options within the range outlined by the Local Authority and in accordance with the design flexibility parameters sought. This is on the basis of which the planning application may be determined by the Local Authority.

The need for design flexibility arises due to the extensive timeframes associated with the development of wind turbines and their associated works. The entire process from planning submission, construction and grid availability, etc., can take numerous years to complete. Wind turbine technology is continuously evolving and thus it is considered appropriate that the application be made before certain details such as the final turbine specification is confirmed.

EIAR Chapter 1 – Introduction, Table 1-3, outlines the options and associated parameters that are used in this AA/NIS and the EIAR, comprising three potential turbines classified as Technology Option 1, 2 and 3.

As the differences in Technology Options relate only to minor differences in the turbine rotor diameter, hub height and total tip height, as such, there will be no difference in likely significant effects arising from the proposed Project on European sites from the three Technology Options.

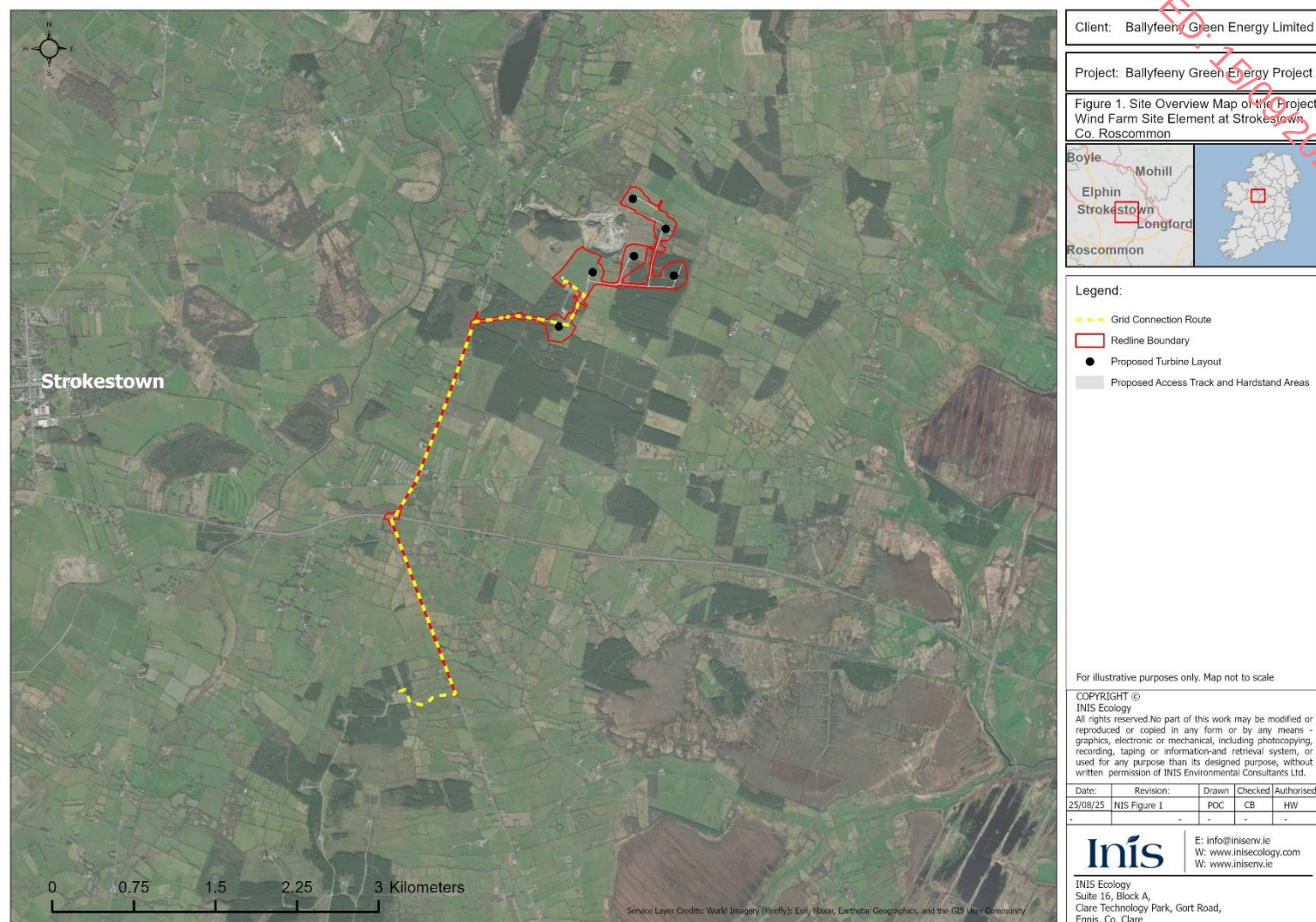


Figure 1 Site overview map of the Project wind farm site element at Strokestown, Co. Roscommon

3. METHODOLOGY

Appropriate Assessment (AA) is the process through which the possible nature conservation implications of any plan or project on European sites within the Natura 2000 site network are considered by a Competent Authority (i.e. Roscommon County Council), before a decision is made to allow that plan or project to proceed.

3.1. Stages of Appropriate Assessment

Appropriate Assessment is a four-stage process that involves a number of steps and tests. These tests are applied using a stage-by-stage approach. Each step or stage in the assessment process precedes and provides a basis for other steps. The four stages (see **Figure 2**) of the AA are described below.

Guidance on this assessment process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2010). These guidance documents identify a staged approach as described below.

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission (EC) in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2010). These guidance documents identify a staged approach to conducting an AA, as shown in Figure 2. Each step or stage in the assessment process precedes and provides a basis for other steps. The four stages in an AA, are further described below.

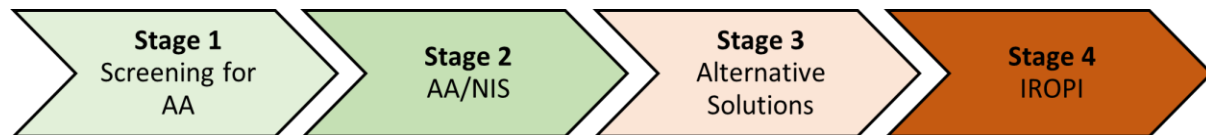


Figure 2 The Appropriate Assessment Process (from: AA of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2010).

3.2. Appropriate Assessment Process

3.2.1. Stage 1 – Screening for AA

The Screening for AA will incorporate the following steps:

- Determining whether a project or plan is directly connected with or necessary to the conservation management of any European sites;
- Describing the project or plan;
- Identifying the European sites potentially affected by the project or plan;
- Identifying and describing any potential effects of the project or plan on European sites, alone, in-combination and cumulatively with other plans/projects; and
- Assessing the likelihood of significant effects on European sites.

This stage examines the likely effects of a project either alone or in combination with other projects upon any European site within the Natura 2000 network and considers whether it can be objectively

concluded that these effects will be significant. Stage 1 screening will determine whether an AA (Stage 2) of the proposed Project is required. If likely significant effects of any project cannot be screened out in Stage 1, the process moves to Stage 2.

The threshold for a Likely Significant Effect (LSE) is treated in the screening exercise as being above a de minimis level. The opinion of the Advocate General in CJEU case C-258/11 outlines:

“The requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European Site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill”.

As such, ‘relevant’ European Sites in this report are those within the potential Zone of Influence (Zol) of activities associated with the project, where impact pathways to European Sites were identified through the source-pathway-receptor model. This is discussed in more detail below in Section 3.4.1 and Section 3.4.2

Screening for AA has been undertaken in reference to relevant case law; notably Case C-323/17 People Over Wind and Sweetman, which established that a Screening for AA exercise cannot take account of mitigation procedures when making any assessment of likely significant effects on a European Site. To quote the determination:

“Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site”.

3.2.2. Stage 2- Appropriate Assessment (Natura Impact Statement)

In this stage, the impact of the project on the integrity of any Natura 2000 site within the Natura 2000 network is considered with respect to the conservation objectives of the site and to its structure and function. Mitigation measures are included in the assessment at this stage. The output from Stage 2 is also known as a Natura Impact Statement (NIS). If it is not possible to reduce the residual effects to an acceptable or non-significant level through the use of avoidance and or mitigation, Stage 3 of the process must be undertaken.

3.2.3. Stage 3 – Alternative Solutions

Should the AA (Stage 2) determine that adverse impacts are likely upon a Natura 2000 site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse impacts. For the avoidance of doubt, no reliance is placed on Stage 3 here. If there are alternative solutions that exist that can be implemented that do not have negative impacts on European sites, they should be adopted regardless of cost. This alternative proposal then reverts to Stage 2 to be reassessed. Once it has been determined that all reasonable alternatives have been assessed and considered the AA will then progress to Stage 4.

3.2.4. Stage 4 – IROPI

Assessment where no alternative solutions exist and where adverse impacts remain but where Imperative Reasons of Overriding Public Interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to any Natura 2000 site and the ecological coherence of the whole Natura 2000 network, will be necessary. It is the characteristics of the project or plan that will determine whether or not the Competent Authority can allow it to progress. European case law highlights that consideration must be given to alternatives outside the project area in carrying out the IROPI test. It is a rigorous test which projects are generally considered unlikely to pass. In any event, the developer does not purport to place any reliance on Stage 4.

3.3. Relevant Guidance and Sources of Information

EU and national guidance exist in relation to Member States' fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in this AA report has regard to the following legislation and guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government (DoEHLG, 2010);
- Communication from the Commission on the Precautionary Principle (European Commission, 2000);
- Practice Note PN01 - Appropriate Assessment Screening for Development Management. Office of the Planning Regulator (OPR, 2021);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats Directive' 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission. European Commission (EC, 2018);
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission. (EC, 2001);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission (EC, 2007a);
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. European Commission. (EC, 2007b);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);
- Nature and biodiversity cases: Ruling of the European Court of Justice (European Commission, 2006);
- Interpretation Manual of European Union Habitats. Version EUR 28 (European Commission, 2013);
- Article 6 of the Habitats Directive: Rulings of the European Court of Justice (Sundseth and Roth, 2014);

- The Planning and Development Act 2000-2021 (including Part XA³ of the Planning and Development Act 2000);
- The Planning and Development Regulations 2001-2021;
- Birds Directive (Council Directive 2009/147/EC);
- European Communities (Birds and Natural Habitats) Regulations 2011 (as amended);
- National Parks and Wildlife Service (NPWS) Guidance for Planning Authorities (NPWS, 2010);
- Roscommon County Development Plan 2022-2028;
- Roscommon Climate Action Plan 2024 – 2029; and
- National Biodiversity Action Plan 2023-2030 (DoCHG, 2023).

In addition, ecological documents (including EIAR Biodiversity and Ornithology chapters, other AA/NIS reports and relevant supporting documents) for similar projects in the vicinity of the Project (including Derryadd Wind Farm (2019 (ABP:303592) and 2025 applications (ABP:322485) and Sliabh Bawn Wind Farm (Roscommon Co Co: 10507)) have also been consulted to consider for relevant source-pathway-receptor interactions to contribute to in-combination effects.

3.4. Identification of European Sites

The identification of relevant European sites to be included in this report was based on the identification of the Zone of Influence (Zoi) of the proposed Project, a source-pathway-receptor model of effects, and the likely significance of any identified effects.

3.4.1. Source-Pathway-Receptor Model

Current guidance informing the approach to screening for AA defines the Zone of Influence of a Project as the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests (QIs) of a European site. It is best practice that this is established on a case-by-case basis using the S-P-R model.

The likely effects of the Project on European sites have been appraised using the S-P-R model, where:

- 1) A 'Source' is defined as the individual element of the Project that has the potential to impact on a European site, its qualifying features and its conservation objectives;
- 2) A 'Pathway' is defined as the means or route by which a source can affect the ecological receptor; and
- 3) A 'Receptor' is defined as the Special Conservation Interests (SCIs) of the Special Protection Area (SPA) or Qualifying Interests (QIs) of a Special Area of Conservation (SAC) for which Conservation Objectives (COs) have been set for the European sites being screened.

An S-P-R model is a standard tool used in environmental assessment. For an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results means that there is no pathway for an effect to occur and therefore no likelihood of that effect occurring. The S-P-R model was used to identify a list of European sites, and their QIs/SCIs, with potential links to European sites. These are termed 'relevant' European sites/QIs/SCIs throughout this report.

An effect can be described as a direct effect (such as the loss of a QI habitat or the mortality to a QI/SCI species) or an indirect effect (such as degradation to a habitat from (for example) water pollution).

The relevant European sites were identified based on the following:

- Identification of potential sources of effects based on the Project description and details, including changes to potentially suitable ex-situ habitats at the Site (i.e., habitats utilised by SCI bird species outside of their designated SPAs);
- Use of up-to-date GIS spatial datasets for European designated sites and water catchments – downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie) to identify European sites which could potentially be affected by the Project; and
- Identification of potential pathways between the Project and any European sites within the ZOI of any of the identified sources of effects.
 - The catchment data were used to establish or discount potential hydrological connectivity between the Project and any European sites.
 - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Project and any European sites.
 - Air and land connectivity assessed based on Project details and proximity to European sites.
 - Consideration of potential indirect pathways, e.g., impacts to flight paths, ex-situ (effects outside the designated site but relevant to its QIs/SCIs and Conservation Objectives) habitats, etc.

3.4.2. Zone of Influence

The proximity of the Project to European sites, and more importantly QIs/SCIs of European sites, is of importance when identifying potential likely significant effects. During the initial scoping of this report, a suitable ZOI based on potential receptors was applied for impact assessment.

A conservative approach has been used, which minimises the risk of overlooking distant or obscure effect pathways, while also avoiding reliance on buffer zones within which all European sites should be considered. This approach assesses the complete list of all QIs/SCIs of European sites in Ireland (i.e. potential receptors), instead of listing European sites within buffer zones. This follows European Commission guidance which requires this exercise to identify:

- *“Any Natura 2000 sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;*
- *Any Natura 2000 sites within the likely zone of influence of the plan or project. Natura 2000 sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g. water) and various types of waste, discharge or emissions of substances or energy;*
- *Natura 2000 sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g. loss of feeding areas, reduction of home range);*

- *Natura 2000 sites whose connectivity or ecological continuity can be affected by the plan or project” (European Commission, 2021, p.10).*

Following the guidance set out by the National Roads Authority (NRA, 2009), the Project have been evaluated based on an identified ZOI with regard to the potential impact pathways to ecological features, that are classed as static or mobile. The ZOI of the Project on mobile species (e.g., birds, mammals, and fish), and static species and habitats (e.g., saltmarshes, woodlands, and flora) is considered differently depending on the location. Mobile species have ‘ranges’ outside of the European site in which they are QI/SCI. The ranges of mobile QI/SCI species vary considerably, from several metres (e.g., in the case of whorl snails *Vertigo* spp.), to hundreds of kilometres (in the case of migratory wetland birds).

Whilst static species and habitats are generally considered to have ZOIs within close proximity of the Project, they can be significantly affected at considerable distances from an effect source; for example, where an aquatic QI habitat or plant is located many kilometres downstream from a pollution source. Bird species disturbance distances were considered based on the most recent available evidence for wintering and breeding periods (SNH, 2016).

Hydrological linkages between the Project and European sites (and their QIs/SCIs) can occur over significant distances; however, any effect will be site specific depending on the receiving water environment and nature of the potential impact, the type of linkage and the potential for dilution and dispersion.

3.4.3. Likely Significant Effect

The threshold for a Likely Significant Effect (LSE) is treated in the screening exercise as being above a de minimis level¹. The opinion of the Advocate General in CJEU Case C-258/11 outlines:

“The requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill”.

In this report, therefore, ‘relevant’ European sites are those within the potential ZOI of activities associated with the Project, where LSE pathways to European sites were identified through the S-P-R model.

The conservation objectives of the European sites identified to lie within the ZOI were reviewed and assessed to establish whether the construction and operation of the proposed Project has the potential to have a negative impact on any of the QIs and/or conservation objectives listed for the site. The assessment framework is taken from the best practice guidelines issued by the European Commission, *“Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC”*.

¹ *Sweetman v. An Bord Pleanála (Court of Justice of the EU, case C-285/11). A de minimis effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.*

The potential for significant effects that may arise from the proposed Project was considered using key indicators:

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.
- Changes in population density.
- Changes in water quality and resource.

In addition, information pertaining to the conservation objectives of the European sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

3.4.4. In Combination Effects

Article 6(3) of the Habitats Directive requires that the proposed Project is considered in-combination with the effects with other plans and projects. As set out in EC (2018), significance will vary depending on factors such as extent, intensity, magnitude of impact, probability, type, duration, timing, cumulative effects, and the vulnerability of the habitats and or species concerned.

Relevant plans and projects that have been approved in the past five years should be included in the in-combination provision. For other proposed plans or projects, consideration is restricted to plans or projects in respect of which development consent has been sought (EC, 2021).

Where impacts arising from the proposed Project overlap with those from other projects, plans and activities which could result in adverse effects are to be considered. This means that an overlap of the physical extents of the impacts arising from the two (or more) projects, plans or activities must be established for an in-combination effect to arise. For example, for a cumulative sedimentation effect to be established, it must be determined that the extent of sediment release from both projects has the potential to overlap (temporally and/or spatially) and may affect a receptor (habitat or species) at the same location.

Exceptions to this exist for certain mobile receptors that may move between, and be subject to, two or more separate physical extents of impact from two or more projects. Where relevant, mitigation is proposed as necessary to prevent adverse in-combination.

3.5. Ecological Data

3.5.1. Desk Study

A desk study was completed to characterise the wider environment of the Project site, to identify potential pathways between the Project and the receiving environment and assess the potential for all QIs and SCIs of European sites to occur, given their ecological requirements identified by Balmer *et al.*, (2013) for SCIs, and the NPWS for QIs (NPWS, 2019a, 2019b, 2019c). SCI birds and mobile QI species can travel many kilometres from their core areas, and desktop surveys assessed the potential presence of such species beyond the European sites for which they are QIs/SCIs. Full details of the desk study sources are shown in **Appendix 6.2: Technical Appendix Desk Study**.

3.5.2. Field study

Multidisciplinary surveys for the water, land, soils and ecology, (including bird, bat, habitat, otter and other mammals, and aquatic habitat surveys were undertaken by experienced Ecologists on the site and environs (up to 2km buffer but wider in some cases dependent on the relevant ecological receptor), between Spring 2023 and Autumn 2024) have been undertaken. These surveys were conducted to inform baseline ecology on the Site. In addition, pathways for impact e.g. surface water drains and streams and linkage to potential downstream sensitive Qis/SCIs were identified and mapped. The surveys assessed the potential for all QIs/SCIs of European sites and scheduled² invasive species to occur, given their ecological requirements identified by Balmer *et al.*, (2013) for birds, and the NPWS for all other species/habitats (NPWS, 2019b, 2019c).

For full details of survey field survey methodology, effort and results, see the corresponding chapters and technical appendices that support the EIAR for this Project. (Refer to **Chapter 6 Biodiversity; Chapter 7 Land, Soils and Geology; Chapter 8 Water, Hydrology and Hydrogeology; Appendix 6.4: Technical Appendix Habitats; Appendix 6.5: Technical Appendix Ornithology; Appendix 6.6: Technical Appendix Bats; Appendix 6.7: Technical Appendix Mammals and Other Receptors and Appendix 6.8: Technical Appendix Aquatics**).

² Invasive species scheduled under the S.I. No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011. Under the Regulations, any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified (...) any plant which is included in Part 1 of the Third Schedule, shall be guilty of an offence.

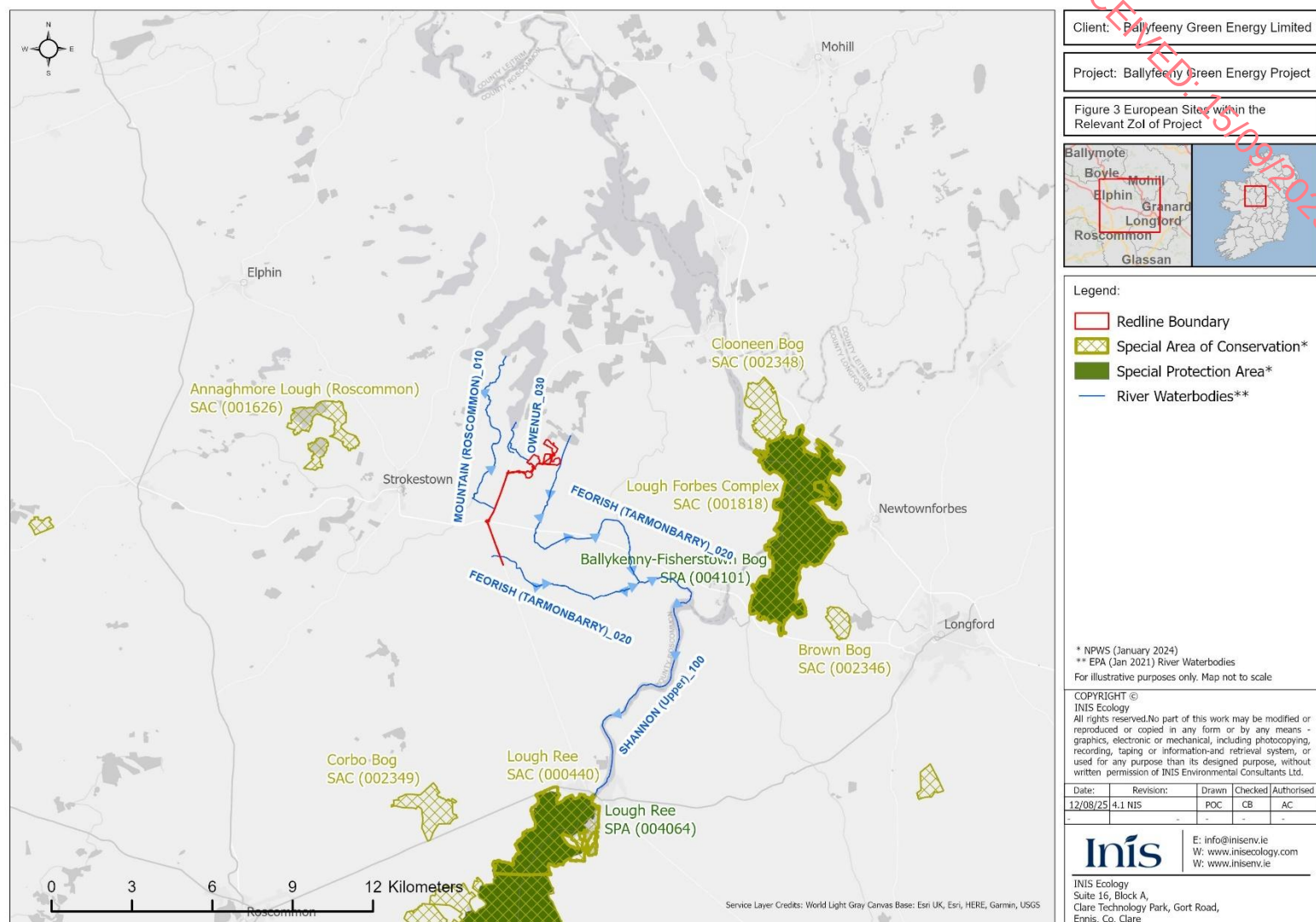


Figure 3 Designated sites within the considered Zol of Project

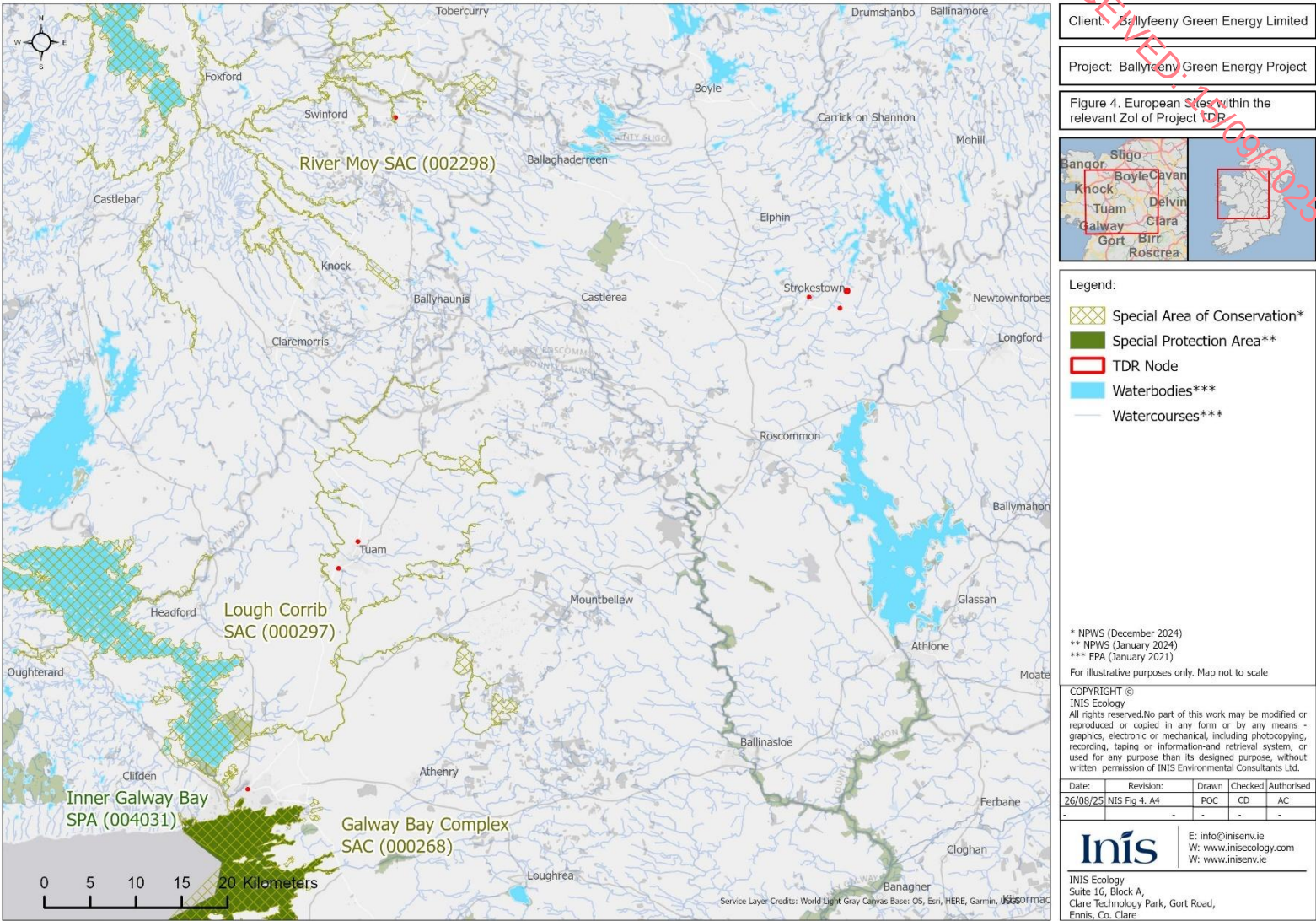


Figure 4 Designated sites within the considered Zol of Project TDR

4. RECEIVING ENVIRONMENT

4.1. Desk Study

4.1.1. Hydrology

The proposed Project is located within the Upper Shannon Catchment, with the wind farm Site, GCR and Turbine Delivery Route (TDR) situated across three of the catchment's sub-catchments; the Scramoge_SC_010 to the west, the Shannon [Upper]_SC_070 to the east and the Shannon [Upper]_SC_040 sub-catchment to the north.

WFD sub-catchments are subdivided into river sub-basins, which are the WFD management and reporting divisions. The proposed Project and surrounding watercourse are situated across three river sub-basins. These are the MOUNTAIN (ROSCOMMON)_010 west of the Site, the OWENUR_030 north of the Site, and the FEORISH (TARMONBARRY)_020 east of the Site. The FEORISH(TARMONBARRY)_010 river sub-basin is located northeast of the Site, downstream of the OWENUR_030.

Note that a standalone Water Framework Directive (WFD) Assessment Report has been prepared for the proposed Project and is included in **EIAR Appendix 8.5** and should, be read in conjunction with this NIS.

4.1.1.1. Rivers & Streams

4.1.1.1.1. Site Drainage

The local hydrology includes the Culliagh Stream (first order stream) ([26C14] [IE_SH_26F030400]), which runs adjacent to the Site's eastern boundary and approximately 70m from the Redline Boundary and c.150m west of T03. The Culliagh Stream flows south and turns east to join the Feorish River (second order river) ([26F03] [IE_SH_26F030400]) before joining the Shannon Upper River (third order river) ([26S02] [IE_SH_26S021600]) c.8.7km downstream from the nearest point of the Redline Boundary. According to the SW 2016-2021 reporting it has a monitored ecological value of Poor and is At Risk of not achieving its WFD targets.

The closest WFD waterbody to the site is the Ballymartin_26 ([26B82][IE_SH_26O060890]), which is within the OWENUR_030 sub-basin. This waterbody abuts the Redline boundary c.307m southwest of T01 and approximately 60m from the proposed Onsite Substation and Communications Relay Tower. It flows westward, merges with the Gillstown_26 ([26G36][IE_SH_26O060890]) and flows northeast into Kilglass Lough c.2km upstream. EPA mapping designates this waterbody as a stream. According to the SW 2016-2021 reporting it has a modelled ecological value of Good, though confidence is low. An additional stream, also mapped as the Owenur_30 by the EPA, with an additional title of Glen_26 ([26G38] [IE_SH_26O060890]), flows westward to Kilglass Lough, rising ~800m as the crow flies northwest of T06, outside the Redline Boundary.

4.1.1.1.2. GCR Drainage

The Gortustia Stream (first order stream) ([26G29][IE_SH_26M030100]), rises west of the GCR, which flows into the Scramoge 26 River (second order river) ([26S01][IE_SH_26M030100]). The Scramoge River then continues into the Mountain (Roscommon) (third order river) ([26M03]

[IE_SH_26M030100]) within the Mountain (Roscommon)_010 sub-basin and ultimately reaches Kilglass Lough.

The GCR crosses the Bellmount or Cloggernagh Stream (first order stream) ([26B99][IE_SH_26F030400]) further south, just before it turns west to join the existing Sliabh Bawn 110kV Substation.

4.1.1.1.3. TDR Drainage

Table 1 details the WFD river waterbodies that are located within 150m of the TDR Nodes, where proposed temporary accommodating works will take place. The status of these rivers' ranges from 'Poor' to 'Good'. Watercourses highlighted in bold text flow directly beneath the road at the locations of the Nodes and proposed works.

Table 1 Rivers within 150m of TDR Nodes

WFD River	WFD Status	Closest Node
MOUNTAIN (ROSCOMMON)_010	Poor	No. 3075
MANTUA STREAM_010	Good	No. 3045
CARRICKNABRAHER_020	Poor	No. 3040
CARRICKNABRAHER_010	Good	No. 3030
TRIMOGE_010	Good	No. 3005
CHARLESTOWN STREAM_010	Moderate	No. 3010, No. 3015, No. 3020, No. 3025
CLARE (GALWAY)_060	Moderate	No. 2055
CLARE (GALWAY)_020	Good	No. 2065, No. 2070, No. 2080, No. 2085
BALLINDINE_010	Poor	No. 2090
BREEDOGE_010	Good	No. 4050
OWENNAFOREESHA_010	Moderate	No. 4050
SCRAMOGE_010	Moderate	No. 4095
SCRAMOGE_020	Good	No. 4115, No. 4125
STROKESTOWN_010	Poor	No. 4155

The following pressures are noted as applying to these rivers within 150m to the site and along the TDR, as per EPA mapping:

- Agricultural pressures
- Anthropogenic pressures
- Domestic wastewater pressures
- Extractive Industry pressures
- Forestry pressures
- Hydromorphology pressures
- Invasive species pressures
- Urban run-off pressures

- Urban wastewater pressures
- Water treatment pressures
- Waste pressures.

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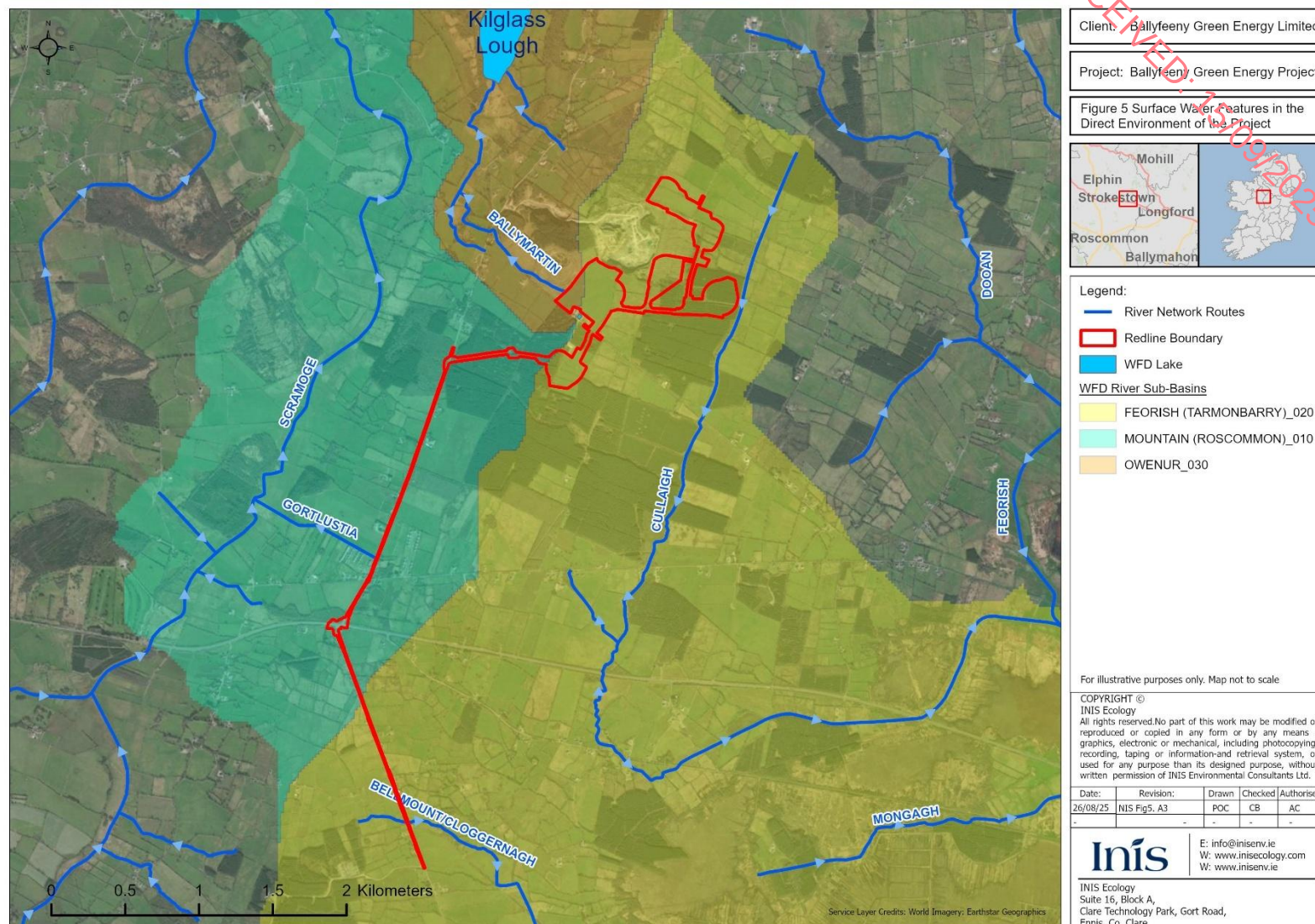


Figure 5 Surface water features in the direct environment of the Project

4.1.1.2. Lakes

The following lake waterbodies can be found within a 15km distance of the site:

Table 2 Lake waterbodies within a 15km precautionary ZOI from the Redline Boundary

EU Code	NAME	Segment Code	Area (km ²)
IE_SH_26_281	Nafulla	26_281	0.01294866
IE_SH_26_489	Fin Strokestown	26_489	0.17618365
IE_SH_26_582	Corbally	26_582	0.23552615
IE_SH_26_611	Shad	26_611	0.11673863
IE_SH_26_669	Annaghmore Lough	26_669	0.53094042
IE_SH_26_700	Rinn	26_700	1.65191551
IE_SH_26_710	Corry	26_710	1.53636275
IE_SH_26_723	Forbes	26_723	2.97712299
IE_SH_26_746	Grange Lough	26_746	1.46894856
IE_SH_26_747a	Bofin LM	26_747a	4.89865618
IE_SH_26_747b	Boderg	26_747b	4.03031099
IE_SH_26_747c	Tap South	26_747c	0.11254327
IE_SH_26_747d	Tap North	26_747d	0.61874259
IE_SH_26_748	Kilglass	26_748	2.02050553
IE_SH_26_749	Grange North	26_749	0.99436051
IE_SH_26_750a	Ree	26_750a	100.203972
IE_SH_26_751	Nablahy South	26_682	0.52880369
IE_SH_26_752	Nablahy North	26_682	0.17704601
IE_SH_26_706	Grange	26_706	0.07803789

Of these lake waterbodies, the closest to the Project are Kilglass Lough, Lough Forbes, Grange Lough, and Annaghmore Lough. Grange Lough and Lough Forbes are both mapped as drinking water lake waterbodies by the EPA (2025).

Pressures to these lakes listed by the EPA are:

- Agricultural pressures
- Anthropogenic pressures
- Domestic wastewater pressures
- Industry pressures
- Invasive species pressures.

4.1.2. Hydrogeology

The north-west section of the wind farm Site (T01, T02, T04, T05 and T06) is within the Lough Acrick groundwater body (IE_SH_G_156). A small eastern section of the wind farm Site, beneath T03, and the southern portion of the GCR is within the Scramoge South groundwater body (IE_SH_G_202). The northern portion of the GCR is located in the Kilglass Dromod groundwater body (IE_SH_G_120), and the mid-portion of the GCR is within the Scramoge North groundwater body (IE_SH_G_201). All groundwater bodies within the project Site have a 'Good' WFD status.

All groundwater bodies within the wind farm Site are classed as 'Good' status across multiple quality assessments, including quantitative status, chemical status and drinking water protected area tests.

The western portion of the Site (turbines T01, T02, T04, T06, associated Access Tracks and GCR) falls within an area of 'Extreme' groundwater vulnerability. Turbine T05 is located within an area of 'High' groundwater vulnerability and the most easterly turbine, T03 falls within an area of 'Moderate' groundwater vulnerability. Groundwater vulnerability varies from 'Low' to 'Extreme' along the TDR, with some sections of exposed rock.

4.1.3. Soils & Geology

As outlined in section 2.1, the proposed wind farm Site sits on lands that generally slope to the east in the cases of Turbines T02, T03, T04, T05 and T06. Lands slope to the south and east at Turbine T01 and are generally flat at the Onsite Substation. Ground elevations vary from 70m Above Ordnance Datum (AOD) to 124m AOD at the highest point.

The bedrock underlying the wind farm Site is a mixture of blue-grey greywacke and black argillite, with pale conglomerate and red sandstone under the GCR. The subsoils are composed mainly of sandstone till (Lower Palaeozoic/Devonian) and sandstone and shale till (Lower Palaeozoic), with smaller sections of undifferentiated alluvium and bedrock at surface.

The closest active quarrying operation to the Site, at Ballyfeeny Rock Quarry, is located less than 150m from the closest wind farm infrastructure at turbine T04 and T06. The quarry currently supplies a combination of sands and gravel and crushed aggregate products at this facility.

According to the GSI online database, the proposed Site is immediately underlain by the Finnalaghta Formation which consists of black, grey greywacke and black argillite, the Fearnaght Formation which consists of pale conglomerate and red sandstone and the Lackan Formation, Jasper rich feldspathic sandstone, is the upper most rock strata.

A study was made of available geological information. This study indicated that the following natural drift geology is present across the Site (EIAR Volume 4, Figure 7-5).

- Topsoil;
 - Boulder Clay (Glacial Till / Mineral Soils; the predominate soil within the northern part of the Site);
 - Alluvium. (Alluvium is present at the eastern edge of the site where it is associated with a minor watercourse);
 - No soils (Outcropping rock; recorded on GSI mapping within the southern part of the Site)
- Corine Land Classifications within the RLB: 231 Agricultural Areas – Pastures; 243 Agricultural Areas – Heterogeneous agricultural areas; 312 Forest and semi-natural areas – Coniferous forests; 314 Forest and semi-natural areas – Mixed forests;
- SIS National Soils Classification and Soil Fertility within RLB: 700b Kilrush - Surface-water Gley: poorly drained mineral soil; 05RIV River – River Alluvium, poorly drained.

Please refer to **EIAR Chapter 7 Land Soils and Geology** and **Chapter 8 Water, Hydrology and Hydrogeology** for further information.

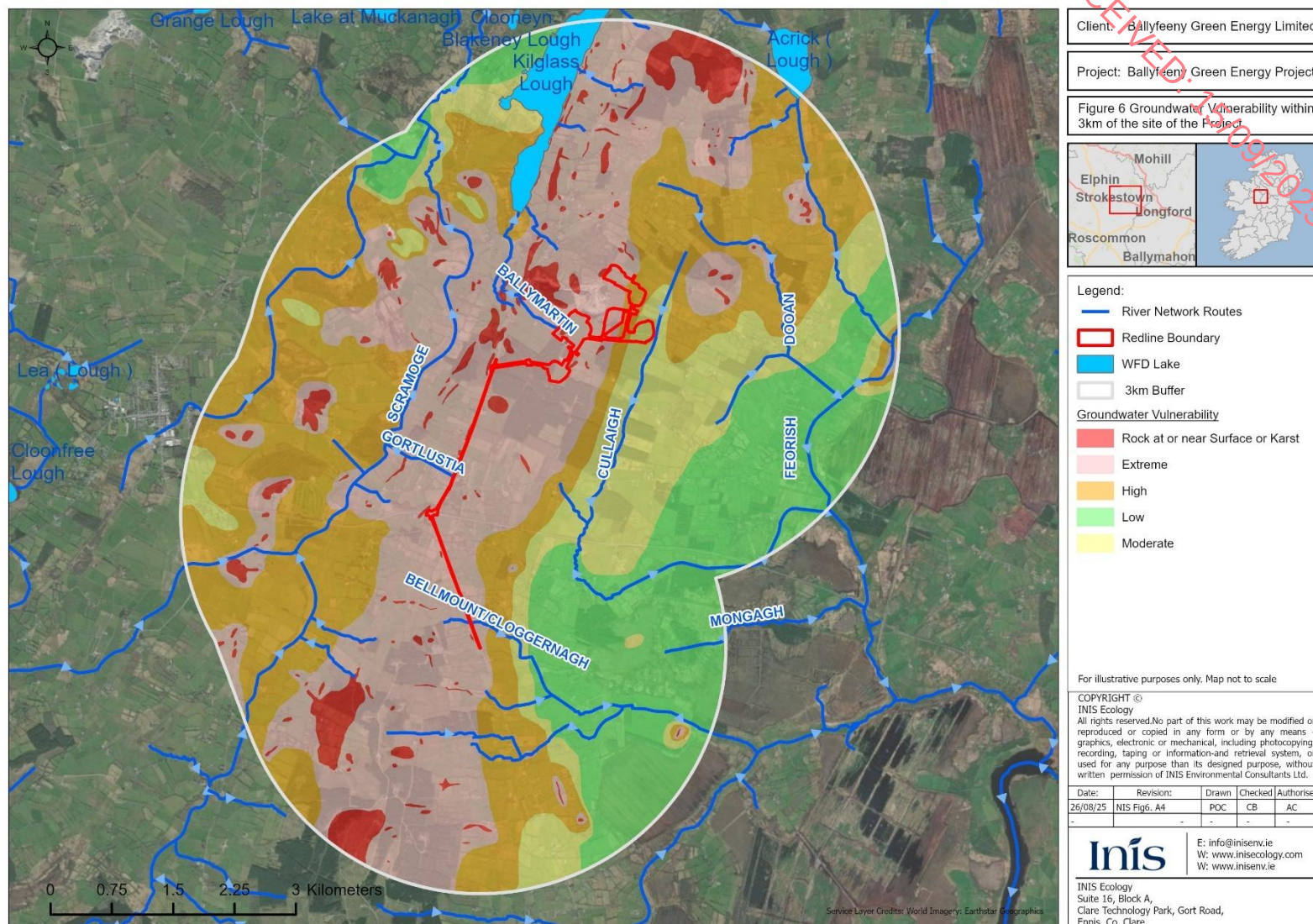


Figure 6 Groundwater vulnerability within 3km of the site of the proposed Project

4.2. Field study

Field surveys indicated the presence of a number of QIs and SCIs considered for the AA screening within the receiving environment of the Project.

A total of 11 bird SCIs (for Lough Ree SPA) were recorded during I-WeBS searches: Common Tern (*Sterna hirundo*), Coot (*Fulica atra*), Goldeneye (*Bucephala clangula*), Lapwing (*Vanellus vanellus*), Little Grebe (*Tachybaptus ruficollis*), Mallard (*Anas platyrhynchos*), Shoveler (*Spatula clypeata*), Teal (*Anas crecca*), Tufted Duck (*Aythya fuligula*), Whooper Swan (*Cygnus cygnus*), Wigeon (*Mareca penelope*). Mallard, Shoveler and Golden Plover (*Pluvialis apricaria*) were recorded during VP survey efforts. Full details of bird survey efforts and results are presented in **Appendix 6.5: Technical Appendix Ornithology**. Due to their occurrence within a potential ZOI for the Project, these SCIs were considered ex-situ receptors for the Lough Ree SPA.

Otter footprints were recorded within the Feorish river tributaries (Bellmount or Cloggernagh Stream [26B99; IE_SH_26F030400] (IE_SH_26F030400)) south of the GCR crossing point for this waterbody (ITM: 596985, 778256) and a regular spraint site was recorded at C6 on the Currughroe Stream ((ITM 598407, 774403) which is not crossed by the grid connection but is connected to the stream that is crossed by the grid connection (**Appendix 6.7: Technical Appendix Mammals and Other Receptors**). As such, this QI is considered an ex-situ receptor for the Lough Ree SAC.

Greenland White-fronted Goose was not recorded during any survey efforts. Despite its absence, this species is considered in the screening for likely significant effects due to the proximity of the Project to the Ballykenny-Fisherstown SPA on a purely precautionary basis.

The field surveys undertaken for the proposed Project identified no evidence of Invasive Alien Plant Species listed under the third schedule of S.I. 477 or the first schedule of S.I. 347 EU Regulations. Cherry Laurel (*Prunus laurocerasus*), a high impact invasive species, was recorded along the TDR. Cherry Laurel can have the potential for negative impacts on native plants and habitats outcompeting native species. The stand is not located within any proposed temporary accommodation work areas along the TDR. For further information please refer to **EIAR Volume 3, Appendix 6.4 Technical Appendix Habitats**.

5. STAGE 1: SCREENING FOR APPROPRIATE ASSESSMENT

5.1. Identification of European sites

The preliminary ZOI was chosen based on potential receptors of the Project to evaluate the potential for significant effects on European sites, alone and/or in-combination with other plans or projects. The preliminary ZOI of the Project was determined to be 15km and intersects eight European sites. Sites within the relevant ZOI, as determined based on connectivity with mobile QIs/SCIS or direct connectivity via terrestrial or hydrological pathways (OPR, 2021) did not include sites outside the preliminary ZOI.

Table 3 European sites within ZOI and distance to the Project.

Site code	Site name	Distance to Project (km)	
SACs		Direct (in a straight line)	Hydrological
001626	Annaghmore Lough (Roscommon) SAC	6.4km	No Hydrological pathway
002348	Clooneen Bog SAC	7.3km	No Hydrological pathway
001818	Lough Forbes Complex SAC	7.4km	No direct Hydrological pathway. Is located 3.4km upstream of the Shannon confluence with the Feorish River.
002346	Brown Bog SAC	11.6km	No Hydrological pathway
000440	Lough Ree SAC	11.7km	18.6km via Bellmont (Cloggernagh) (GCR crossing); 22.1km via the Culliagh stream (runs adjacent to the wind farm Site's eastern boundary and approximately 150m west of T03)
002349	Corbo Bog SAC	12.1km	No Hydrological pathway
SPAs			
004101	Ballykenny-Fisherstown Bog SPA	7.4km	No direct Hydrological pathway
004064	Lough Ree SPA	11.8km	18.6km via Bellmont (Cloggernagh) (GCR crossing); 22.1km via the Culliagh stream (runs adjacent to the wind farm Site's eastern boundary and approximately 150m west of T03)

Table 4 Distance from European sites within ZOI and the Project TDR.

Site code	Site name	Distance to proposed Project (km) - TDR
SACs		
002298	River Moy SAC	Node 3020: 46m
000268	Galway Bay Complex SAC	Node 2020: 1km
000297	Lough Corrib SAC	Node 2020: 1.8km Node 2055: 1.1km Node 2060: 1.3km

SPAs		
004031	Inner Galway Bay SPA	Node 2020: 1.1km

The nearest European site to the Projects Wind Farm or GCR is the Annaghmore Lough (Roscommon) SAC separated by a minimum distance of approximately 6.4km. The TDR covers a wider area across multiple counties and is closest to the River Moy SAC at 46m from the 3020 Node. No surface run-off pathways are engaged along the TDR works.

5.2. Screening Process

The Screening process examines the potential connectivity with, and the likely effects of the Project (as described, either alone or in combination, with other projects or plans) upon a Natura 2000 site and considers whether it can be objectively concluded that a) potential connectivity exists, and b) these effects will not be significant.

5.3. Screening: Is the Project Directly Connected to or Necessary for Management of a European site?

For a project or plan to be 'directly connected with or necessary to the management of the site', the 'management' component must refer to management measures that are for conservation purposes, and the 'directly' element refers to measures that are solely conceived for the conservation management of a site and not direct or indirect consequences of other activities.

The Project is not necessary to the management of European sites.

5.4. Assessment of Source-Pathway-Receptor Model

As described in the methodology (Section 3), current guidance recommends that ZOI is established on a case-by-case basis using the source-Pathway-Receptor (S-P-R) model. No works are proposed within any EU designated site. However, the following elements of the Project were identified and assessed for their potential effects and connectivity to European sites.

Table 5 Source-Pathway-Receptor Model for the Project.

Source of Potential Effect	Description of Pathway	Potential Receptors of the Effect
Construction Phase		
Wind farm Site		
Disturbance: Construction activities (Noise/vibration)	Air	Potential disturbance to mobile SCIs/Qis including birds and mammals that are noise sensitive species, are possible as a result of increased noise construction activities.
Disturbance: Lighting		Lighting during construction works has the potential to effect nocturnal species foraging and roosting behaviour.
Disturbance: Human presence (Noise/visual disturbance)		Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased physical presence from humans during the construction phase of the Project.
Disturbance: Vehicle activity (Noise/visual disturbance)		Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased noise from the movement of vehicles during the construction phase of the Project.
Mortality: Vehicle Activity	Direct	Mortality is an unlikely event but is considered forward to identify the extent of the significance in a worst-case scenario.
Pollution/ Contamination: Direct water run-off	Hydrological	Surface water run-off carrying suspended silt or contaminants – hydrocarbons could cause potential contamination within the catchment area by flowing into the Culliagh Stream, a tributary of the Feorish sub-basin or the Ballymartin_26, a tributary of the Owenur sub-basin.
Pollution/ Contamination: Earthworks (e.g. digging, tree felling);		Excavation will take place within the wind farm Site to install the Turbine Hardstands, Access Tracks and Wind Farm Internal Cabling. Tree felling for construction and operational bat buffers will also results in release of nutrients and chemicals from the commercial forestry. During these works there is potential for fine sediment pollution, increased erosion, nutrient run-off to flow into the Culliagh stream and the Ballymartin 26 stream.
Pollution/ Contamination: Use of contaminants (e.g. gravel, hydrocarbons, spoil)		Surface water run-off carrying suspended silt or contaminants – hydrocarbons could cause potential contamination within the catchment area by flowing into Culliagh stream and the Ballymartin 26 stream. Construction machinery and concrete foundation works pose the highest risk for this source-pathway impact.

Source of Potential Effect	Description of Pathway	Potential Receptors of the Effect
Pollution/ Contamination: Accidental hydrocarbon spills.		Surface run-off carrying suspended fuel or other hydrocarbon substances from incidents onsite could cause potential contamination within the catchment area by flowing into the Culliagh stream and the Ballymartin 26 stream. Construction machinery and concrete foundation works pose the highest risk for this source-pathway impact.
Grid Connection		
Disturbance: Construction activities (Noise)	Air	Grid Connection works will take place along the R371 and joining the Sliabh Bawn 110kV Substation. This route will cross one watercourse (Bellmount (or Cloggernagh) Stream and passes the Gortlusia Stream as it rises adjacent to the R371. The crossing method proposed for the Bellmount (or Cloggernagh) is cable trenching within the existing road carriageway.
Disturbance: Construction activities (Vibration)	Ground	
Disturbance: Human presence (Visual disturbance)	Air	Grid Connection works will take place along the R371 and at the joining to the Sliabh Bawn 110kV Substation. This route will cross one watercourse (Bellmount (or Cloggernagh) Stream and passes the Gortlusia Stream as it rises adjacent to the R371. The crossing method proposed is cable trenching within the existing road carriageway. Human presence will involve bridge side sources from these works related to monitoring.
Pollution/ Contamination: Direct Water run-off	Hydrological	During the construction of the GCR, machinery operating adjacent to Bellmount (or Cloggernagh) Stream could knock exposed sediment directly into the water channel or move material to a position where, should it rain, the sediment would be more vulnerable to mobilisation by surface water runoff (either as sheet flow or slumping of sediment piles into the channel).
Pollution/ Contamination: Use of contaminants (e.g. gravel, hydrocarbons, spoil)		Machinery operating adjacent to Bellmount (or Cloggernagh) Stream and Gortlusia Stream could knock exposed sediment directly into the water channel or move material to a position where, should it rain, the sediment would be more vulnerable to mobilisation by surface water runoff (either as sheet flow or slumping of sediment piles into the channel).
		It is proposed to utilise Horizontal Directional Dig at (HDD) one location along the GCR – the N5/R371 road junction; to cross the N5 without open excavation of the road, (see Planning Drawing 23604-304 and 562). The HDD at this location will be approximately 50 m in length.
		This intersects the Scramoge North groundwater body which is shared by small streams that flow into the Scramoge. As such, these works have potential for groundwater contaminant sources to the Scramoge, which flows into the Kilglass stream. Given the separation distance, the likelihood for significant contamination event to impact streams within the Scramoge North ground

Source of Potential Effect	Description of Pathway	Potential Receptors of the Effect
		waterbody being extremely low and the nature of HDD works not considered likely to interact directly with groundwater, this effect is not considered a likely pathway for effects to any QI or SCI within the relevant SCI. The GCR will cross one watercourse the Bellmount (or Cloggernagh) Stream located in the Scramoge South groundwater body, which flows to the Curraghroe stream, the Feorish (Tammonbarry) and the Shannon [Upper], which has downstream pathways to the Lough Ree SAC (Bellmount (Cloggernagh) Stream,) and ex-situ habitat for the Lough Ree SAC. The GCR will pass over the existing stream within the existing carriageway. No instream works are proposed.
Pollution/ Contamination: Accidental instream hydrocarbon spills.	Pollution/ Contamination (Hydrological)	Machinery operating adjacent to Bellmount (Cloggernagh) Stream may accidentally push/move exposed sediment directly into the water channel or move material to a position where, should it rain, the sediment would be more vulnerable to mobilisation by surface water runoff (either as sheet flow or slumping of sediment piles into the channel). As such, these works have potential for contaminant sources to both the Gortlusia Stream and Bellmount (Cloggernagh) Streams.
Turbine Delivery Route		
Disturbance: Vegetation clearance (Noise/visual disturbance)	Air	Potential disturbance to mobile SCIs/QIs including birds and mammals from hedge and tree trimming. No QIs/SCIs are considered likely receptors of this effect as the flora are mostly riverine or lake verge habitat niche species and have no dependency on hedgerows and treelines. Works along the delivery route are not expected to contribute to this effect above negligible levels making any significant effect on relevant SCIs/QIs unlikely.
Disturbance: Construction activities & vehicle activity (Noise/vibration)		Potential disturbance to mobile SCIs/QIs from verge widening and utility relocation works, and from increased heavy vehicle movements during works.
Disturbance: Habitat Alteration	Terrestrial	Habitat alteration from hedge and tree trimming (especially if bat roost or bird nest potential exists nearby). No relevant QI or SCI species are sensitive to this kind of habitat impact. As such, LSE is considered from this source-pathway.
Mortality: Vegetation clearance	Direct	Mortality risk for mobile species (e.g. Otter, birds) during hedge/tree trimming or from increased vehicle movements. Only one point near the River Moy SAC (002298) poses risks for this impact as the road is within the foraging range for Otter from the nearby river waterbody. Given the timing of works related to this impact source and works isolated parallel with existing roads with active traffic (Node: 3020), no such impact on this QI species (Otter) is likely.

Source of Potential Effect	Description of Pathway	Potential Receptors of the Effect
Pollution/Contamination: Run-off from verge works	Hydrological	If works occur near roadside drains or ditches connected to watercourses, sediment or contaminants could enter hydrologically linked streams. No such pathways exist for the TDR route.
Operational Phase		
Disturbance: Operational phase activities (Noise/vibration)	Air	Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased noise from humans and the movement of vehicles during the maintenance events and operating turbines of the Project.
Disturbance: Operational Turbines		Operational Turbines have been shown to contribute to disturbance pathways to bird receptors.
Disturbance: Human presence (Noise/visual disturbance)		Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased noise from humans during the operational phase of the Project (e.g. undertaking maintenance activities). Connectivity to give rise to an ex-situ impact varies depending on the species; the maximum disturbance distance of the SCIs for the SPAs considered is 8km (Greenland White fronted Goose (SNH, 2016)).
Disturbance: Vehicle Activity (Noise/visual disturbance)		Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased movement of vehicles during the operational phase of the Project.
Mortality: Operational Turbines	Direct	Bird species have been shown to be at risk from collision with operational turbines.
Mortality: Vehicle Activity		Mortality is an unlikely event but is considered forward to identify the extent of the significance in a worst-case scenario.
Pollution/Contamination: Accidental hydrocarbon spills.	Hydrological	Maintenance of operational turbines, vehicles and equipment has the potential for accidental fuel or oil spills.
Decommissioning Phase		
Disturbance: Decommissioning	Air	Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased noise activities during the decommissioning phase of the Project.

Source of Potential Effect	Description of Pathway	Potential Receptors of the Effect
activities (Noise/vibration)		
Disturbance: Lighting		Lighting during decommissioning works has the potential to effect nocturnal species foraging and roosting behaviour.
Disturbance: Human presence (Noise/visual disturbance)		Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased noise from humans during the decommissioning phase of the Project.
Disturbance: Vehicle Activity (Noise/visual disturbance)		
Mortality: Vehicle Activity	Direct	Mortality is an unlikely event but is considered forward to identify the extent of the significance in a worst-case scenario.
Construction works – direct disturbance (light and noise impacts).	Disturbance: Air (Light and noise impacts)	Potential disturbance to mobile SCIs/Qis including birds and mammals is possible as a result of increased noise from humans and the movement of vehicles during the decommissioning phase of the Project.
Pollution/Contamination: run-off.		Only limited groundworks will take place within the wind farm Site during decommissioning. During these works there is potential for surface run-off to flow into the Feorish and Owenur sub-basins.
Pollution/Contamination: Accidental hydrocarbon spills.	Hydrological	Surface run-off carrying suspended fuel or other hydrocarbon substances from incidents onsite could cause potential contamination within the downstream watercourses by flowing into the Feorish and Owenur sub-basins. Decommissioning machinery pose the highest risk for this source-pathway impact.

5.5. Assessment of Connectivity to European sites

Potential pathways between the Project and European sites were identified in Table 5. In Table 6 we use those pathways to identify whether European sites are potentially connected to the proposed Project.

A number of sites were screened out based on the extent of distance between the Project and the site, the absence of any terrestrial, hydrological connectivity or other pathways and the non-mobile nature of its Qis.

The TDR nodes where works will take place will involve interactions within the footprints of public roads connecting Galway city, heading north to the N5 before heading East. Due to this, additional sites were in proximity to these works outside the Zol of the windfarm and grid connection elements. None of these sites were determined to have any likely pathways for effects based on the distance of the nearest TDR node, the nature of the works related to these nodes, and the absence of hydrological pathways as no instream works are present.

One European site is located 46m at its closest point to Node 3020. However, the works located at this site will be confined to the footprint of the existing road with no instream works, no significant effect is considered to have the potential to result in surface-run off pathways based on the elevations and sufficient artificial drainage system already present within the existing infrastructure.

As such, **no European sites within the relevant Zol of the proposed Projects TDR are considered further** for screening based on these sites having no downstream connectivity with the Projects potential sources, these sites are not considered further and are screened out for likely significant effects.

Table 6 European sites considered with the Source-Pathway-Receptor (S-P-R) method to establish notable links between the sources of effects arising from the Development, and any relevant European sites (those sites shaded are screened in for further assessment).

Site code	Site name	Qis/SCIs (* denotes a priority habitat)	Screen In/Out & Pathway
001626	Annaghmore Lough (Roscommon) SAC	7230 Alkaline fens 1013 Geyer's Whorl Snail (<i>Vertigo geyeri</i>)	Due to the nature of the works, and the lack of pathway connectivity across the phases of the Project, no connectivity or likely significant effects are envisaged. Screened out
002348	Clooneen Bog SAC	7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion 91D0 Bog woodland*	Due to the nature of the works, and the lack of pathway connectivity across the phases of the Project, no connectivity or likely significant effects are envisaged. Screened out
001818	Lough Forbes Complex SAC	3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation 7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion 91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)*	This SAC is located upstream of the Feorish and Shannon Upper confluence which is the nearest point for the proposed Project potential surface run-off sources to be connected to this site. None of the identified Qis for this site are mobile or are mapped within the hydrological pathway connected to the proposed Project associated works. As such, no direct pathways are present to connect Project sources with any of this sites QI's. Therefore, this site is not included in the current Screening Assessment. Screened out
002346	Brown Bog SAC	7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion	Due to the nature of the works, and the lack of pathway connectivity across the phases of the Project, no connectivity or likely significant effects are envisaged. Screened out

Site code	Site name	Qis/SCIs (* denotes a priority habitat)	Screen In/Out & Pathway
000440	Lough Ree SAC	3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7230 Alkaline fens 8240 Limestone pavements* 91D0 Bog woodland* 91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)* 1355 Otter (<i>Lutra lutra</i>)	Hydrological connectivity via ex situ Otter activity. The Project interacts with watercourses flowing into this European site and has hydrological and ecological connectivity to rivers in the wider area with records for Otter. Otter has a foraging range greater than the distance between the surface run-off point which is 12.1km upstream of the confluence with River Shannon (Upper)_100 and the distance from the grid connection crossing and the same confluence with the River Shannon (Upper)_100 being closer at 8.7km. The confluence continues 9.9km downstream to the Lough Ree SAC. Otter is recorded by NPWS at multiple points within the Feorish sub-basin connected to the grid connection crossing source. This places the receiving environment of the proposed Project within the foraging range of ex-situ Otter (13.2km $\pm$ 5.3km, Reid <i>et al.</i>, 2013). Therefore, potential ex-situ connectivity is considered. Therefore, under the Precautionary principle, this SAC is considered for potential ex-situ effects. All QI habitats for Lough Ree SAC have been considered in this screening assessment. This site is connected downstream of a potential surface run-off source from the proposed wind farm Site and grid connection works source. Based on the extent of downstream dissolution in play (18.6km at its closest point), in-situ Qis are unlikely to receive any extent of effect as a result of the Project. Only one of the QI habitats (Alkaline Fens) is mapped ex-situ of the SAC and is downstream of surface run-off source mentioned above. However, this location is more than 8.7km downstream from the nearest source, no significant pollutant or contamination event is expected to occur that would result in significant effect on this Ex-situ habitat. As such, no habitats listed for this site are considered to experience likely significant effect. Lough Ree SAC is therefore Screened in for further assessment for ex-situ effects on Otter only.

Site code	Site name	Qis/SCIs (* denotes a priority habitat)	Screen In/Out & Pathway
002349	Corbo Bog SAC	Habitats 7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion	Due to the nature of the works, and the lack of pathway connectivity across the phases of the Project, no connectivity or likely significant effects are envisaged. Screened out
004101	Ballykenny-Fisherstown Bog SPA	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Disturbance/displacement for Greenland White-fronted Goose. This site is 7.4km east (in a straight line) of the wind farm Site. Although no direct hydrological downstream pathways are present, the SCI for this site, Greenland White-fronted Goose, has a considered foraging range of 5-8km (SNH, 2016). The nearby Kilglass Lough is considered a habitat area used by this SCI species (SNH, 2025). As such, ex-situ effects for this SCI have the potential significant effects. Specifically, ex situ effects in the form of disturbance/displacement via proximity and hydrological pathways to the Kilglass Lough which was part of this SCIs population foraging range (NPWS, 2012). Therefore, under the Precautionary principle, this site is considered for potential ex-situ disturbance/displacement effects on the suitable foraging habitat within the Kilglass Lough. Ballykenny-Fisherstown Bog SPA is therefore Screened in for further assessment for ex-situ effects on Greenland White-fronted Goose.

Site code	Site name	Qis/SCIs (* denotes a priority habitat)	Screen In/Out & Pathway
004064	Lough Ree SPA	A004 Little Grebe (<i>Tachybaptus ruficollis</i>) A038 Whooper Swan (<i>Cygnus cygnus</i>) A050 Wigeon (<i>Mareca penelope</i>) A052 Teal (<i>Anas crecca</i>) A053 Mallard (<i>Anas platyrhynchos</i>) A056 Shoveler (<i>Spatula clypeata</i>) A061 Tufted Duck (<i>Aythya fuligula</i>) A065 Common Scoter (<i>Melanitta nigra</i>) A067 Goldeneye (<i>Bucephala clangula</i>) A125 Coot (<i>Fulica atra</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A142 Lapwing (<i>Vanellus vanellus</i>) A193 Common Tern (<i>Sterna hirundo</i>) A999 Wetlands and Waterbirds	Yes. SCIs of this European site are recorded in the wider receiving environment, including within the Kilglass Lough. Therefore, there is potential for ex-situ effects. Specifically, ex situ effects in the form of disturbance/displacement, pollution/contamination to foraging habitats. Hence, this site is considered for potential ex-situ effects. This site is connected downstream of a potential surface run-off source from the proposed wind farm Site and Grid Connection works source. Based on the extent of downstream dissolution in play (18.6km at its closest point), this SPA is unlikely to receive any extent of effect as a result of the Project. Lough Ree SPA is therefore Screened in for further assessment for ex-situ effects on all SCIs.

5.6. Assessment of Likely Significant Effects – Scoping of Effects

A European site will only be at risk from likely significant effects where a S-P-R link exists between the Development Site and the European site. All of the European sites considered under the S-P-R method are listed in Table 6, with three European sites as listed identified to have a S-P-R link of note to the Project, namely:

- 000440 Lough Ree SAC
- 004101 Ballykenny-Fisherstown Bog SPA, and
- 004064 Lough Ree SPA.

Table 7 Overview of screened in European sites

European Site	Summary (taken from Site Synopsis available via NPWS)
Lough Ree SAC	Lough Ree SAC (Site Code: 000440) is Ireland's third-largest lake, located on the River Shannon between Lanesborough and Athlone, spanning Counties Longford, Roscommon, and Westmeath. This Special Area of Conservation protects 8 Annex I habitats and 1 Annex II species under the EU Habitats Directive. Lough Ree SAC represents a critical mesotrophic lake ecosystem with exceptional biodiversity, ancient woodlands, and internationally important bird populations, though facing threats from agricultural enrichment and peat siltation limiting aquatic plant growth.
Ballykenny-Fisherstown Bog SPA	Ballykenny-Fisherstown Bog SPA (Site Code: 004101) is a Special Protection Area located on the Longford-Roscommon border in Ireland's north-central midlands, centered around Lough Forbes on the River Shannon system. The site encompasses a naturally eutrophic lake with well-developed swamp vegetation that transitions to seasonally flooded grassland, marsh, and raised bog. The Ballykenny-Fisherstown bog complex is bisected by the Camlin River and features wet central areas with abundant bog mosses (<i>Sphagnum</i> spp.) and well-developed hummocks. Notably, Ballykenny Bog retains some intact margins, a rare feature in the Irish midlands. The site demonstrates complete habitat transitions from raised bog to callow grasslands, with a narrow band of deciduous woodland colonizing the bog-lake interface. This creates

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	a mosaic of wetland habitats supporting diverse bird communities, though the primary conservation target species no longer utilizes the site regularly.
Lough Ree SPA	Lough Ree SPA (Site Code: 004064) is Ireland's third-largest lake, situated on the River Shannon between Lanesborough and Athlone. This Special Protection Area covers a shallow lake system (mostly <10m depth, maximum 36m) with an indented shoreline, sheltered bays, and numerous islands set in Carboniferous limestone. The site encompasses extensive Common Reed beds, monodominant swamps of Common Club-rush and sedges, species-rich calcareous fens, freshwater marsh, and lowland wet grasslands that flood in winter. These diverse wetland habitats create ideal conditions for waterfowl. The site has high ornithological importance for both wintering and breeding birds, with particular significance for three Annex I species: Whooper Swan, Golden Plover, and Common Tern. Parts of the SPA are designated as Wildfowl Sanctuaries, emphasizing its critical role in Ireland's waterbird conservation network.

The AA Screening's objective is to determine on the basis of objective information, all available evidence and in consideration of the worst-case scenario, if it can be excluded to result in likely significant effects on a European site, either alone or in combination with other plans or projects, in view of that site's conservation objectives.

5.6.1. Lough Ree SPA

Lough Ree SPA is screened in for further assessment (see **Table 8**). As outlined in Section 4.1.1.1 above hydrological connectivity exists between the two sites [Lough Ree SPA and the wind farm Site] via the Bellmount (or Cloggernagh) Stream. A section of the GCR along the R371 crosses this watercourse 18.6km upstream of the Lough Ree SPA (Figure 5). The Culliagh stream flows adjacent to the eastern boundary of the wind farm Site, approximately 150m west of T03 (Figure 5). 5) and 22.1km upstream of Lough Ree SPA.

Taking a precautionary approach, potential exists for significant effects via a reduction in water quality, as a result of the Project on aquatic dependent SCI species of this SPA. Therefore, given the hydrological connectivity between the Project and this SPA further assessment is required.

No other pathways to this site are envisaged.

5.6.2. Ballykenny-Fisherstown Bog SPA

This SPA is screened in for further assessment (see Table 9). Ballykenny-Fisherstown Bog SPA is 7.4km east of the Project. Although no direct hydrological downstream pathways are present, the SCI for this site, Greenland White-fronted Goose, has a considered foraging range of 5-8km (SNH, 2016). The nearby Kilglass Lough is considered a habitat area used by this SCI species. As such, ex-situ effects for this SCI have the potential for significant effects. Therefore, under the Precautionary principle, this site is considered for potential ex-situ effects.

5.6.3. Lough Ree SAC

This SAC is screened in for further assessment (see **Table 10**) due to hydrological connectivity via ex situ Otter activity. The Project interacts with watercourses flowing into this European site and has hydrological and ecological connectivity to rivers in the wider area with records for Otter. Otter has a foraging range greater than the distance between the proposed Project Grid Connection which is 8.7km upstream of the confluence with River Shannon (Upper)_100 which is 9.9km upstream of the Lough Ree SAC. This places the receiving environment of the proposed Project within the foraging range of ex-situ Otter (13.2km $\pm$ 5.3km, Reid *et al.*, 2013). Therefore, potential ex-situ connectivity is considered.

Therefore, under the Precautionary principle, this SAC is considered for potential ex-situ effects.

Table 8 Assessment of Likely Significant Effects for Lough Ree , with analysis per SCI (shaded effects are brought forward to AA Stage 2 (NIS)).

Effect	QIs [code]/SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Common Scoter <i>Melanitta nigra</i> [A065]	Typical range: Up to 5–10km from roost/nest; mainly local within lake and nearby waterbodies. Lough Ree SPA is c.11.8km south of the wind farm Site (in a straight line), from the northernmost extent of the SPA to the southernmost extent of the wind farm Site boundary. In Irish lakes (such as Lough Ree), most foraging occurs locally within the lake itself and adjoining bays, though birds may move between lakes up to 10km apart when searching for food or undisturbed areas (NPWS). Common Scoter do not typically forage on grassland. Their foraging is almost exclusively aquatic, focused on lakes, large rivers, coastal waters, and sheltered bays where they dive for invertebrates, small fish, and plant material. Their sensitive disturbance distance is 300m-500m for breeding disturbance (Goodship and Furness, 2022). This species was not recorded during the VP survey period, during I-WeBS or within the NBDC grid square data, and so cannot be significantly affected by disturbance/displacement. As Lough Ree is 14km south of Kilglass Lough, and no other lakes are present in the intervening distance between Lough Ree and the site, no likely significant effects on Common Scoter are anticipated and no further assessment of this species is required.
	Common Tern <i>Sterna hirundo</i> [A193]	Range: Usually within 10km of colony (Becker and Ludwig, 2004). Most birds forage within 15km of shore or breeding site with 30km maximum range for coastal colonies (Power <i>et al.</i> , 2021). At a zone of influence of 30km, the construction phase of the Project has the potential to result in likely significant effects on this SCI. Common Tern disturbance distance is 300m-400m for breeding disturbance (Goodship and Furness, 2022). This species was not recorded during the survey period, during I-WeBS or within the NBDC grid square data, no evidence supports Common Tern being a receptor of the Projects effects. Therefore Common Tern cannot be significantly affected by disturbance/displacement. Given the project is outside the 10km foraging range typically observed for this species, no likely significant effects on Common Tern are anticipated and no further assessment of this species is required.
	Coot <i>Fulica atra</i> [A125]	Winter population is designated for this site. Coot was only recorded during I-WeBS visits across Kilglass Lough and the lakes north of the Project. This species was not recorded during survey period. Given the intervening distance between Lough Ree and the site, no likely significant effects are anticipated and no further assessment of this species is required.
	Goldeneye <i>Bucephala clangula</i> [A067]	Typical range: Up to 5km Duncan and Marquiss (1993); foraging mostly on nearby waterbodies. Goldeneye disturbance distance is 150m-800m for non-breeding disturbance (Goodship and Furness, 2022). No records of this species were recorded during the survey period, during I-WeBS or within the NBDC grid square data, as such no evidence supports Goldeneye being a receptor of the Projects effects. The project is outside the 5km foraging range typically observed for this species, no likely significant effects are anticipated and no further assessment of this species is required.

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Lapwing <i>Vanellus vanellus</i> [A142]	Typical range: Typically, within 1–2km of nest while breeding, their sensitivity to disturbance distance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). However, given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line) and the absence of suitable foraging grasslands within boundary of the Project, no likely significant effects are anticipated on Lapwing and no further assessment of this species is required.
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Typical range: Generally, stays within the locality of breeding sites during the winter period, although some movements are likely from small to larger wetlands (Konter & Konter, 2006). Given the intervening distance between Lough Ree and the wind farm Site (c.11.8km south in a straight line), no likely significant effects are anticipated on this SCI and no further assessment of this species is required. e
	Mallard <i>Anas platyrhynchos</i> [A053]	Typical range: Although larger distances have been observed, Mallard typically range up to 1km between roosting and foraging habitats during winter (Legagneux <i>et al.</i> , 2009). Assigning a worst-case scenario ZoI of 10km, the Project construction works will not impact areas of high foraging or roosting value for Mallard. The activity recorded during I-WeBS and VP surveyssupport this finding based on the levels of activity recorded. As such, no likely significant effects are anticipated on Mallard and no further assessment of this species is required.
	Shoveler <i>Spatula clypeata</i> [A056]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Shoveler and no further assessment of this species is required.
	Teal <i>Anas crecca</i> [A052]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Teal and no further assessment of this species is required.
	Tufted Duck <i>Aythya fuligula</i> [A061]	Typical range: Local movements within wetlands, usually <5km between roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Tufted Duck and no further assessment of this species is required.
	Whooper Swan <i>Cygnus cygnus</i> [A038]	Typical range: Accepted foraging range is 5km from roosting areas (SNH, 2016). Whooper Swan was recorded during I-WeBS within the wider lake network north of the Kilglass Lough and occasionally during VPs in winter and migration months (September and April) the nearest flight being over 1km from the nearest turbine (EIAR Appendix 6.5). Their sensitive disturbance distance is 200m-600m for non-breeding disturbance (Goodship and Furness, 2022). As the Project is outside the core foraging range for Whooper Swan, any Whooper Swans forming part of the Lough Ree population cannot be significantly affected by disturbance/displacement effects therefore no further assessment of this species is required.

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Wigeon <i>Mareca penelope</i> [A050]	Typical range: Local movements within wetlands, usually <3km between roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Their sensitivity to disturbance is within 200m-500m for non-breeding birds (Goodship and Furness, 2022). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Wigeon and no further assessment of this species is required.
	Golden Plover <i>Pluvialis apricaria</i> [A140]	Typical Range: Up to 3km core range nest during breeding up to a max of 11km (SNH, 2016); may fly further in non-breeding season, especially during migration. Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), the limited number of individuals recorded during VP surveys (only in April 2024) and no flocks recorded utilising the Kilglass Lough habitat, no likely significant effects are anticipated on this SCI and no further assessment of this species is required.
	Wetlands and Waterbirds [A999]	This SCI pertains to wetland habitat in-situ of the SPA. As such, this SCI is not expected to experience this effect given its non-species and non-mobile feature.
Pollution/ Contamination	Common Scoter <i>Melanitta nigra</i> [A065]	The Project is connected hydrologically to this SPA. The proposed GCR crosses the Bellmount (or Cloggernagh) Stream 18.7km upstream of the SPA. While there is no EPA mapped watercourses within the wind farm Site, the Culliagh Stream flows adjacent to the eastern boundary of the wind farm site, 22.1km upstream of the SPA. All SCIs for this SPA have suitable foraging habitat within the river networks downstream of the Projects hydrological pathways. Where pollution and contamination events occur along the Feorish and Shannon Upper sub-basin, this could result in indirect effects on food options for these bird species ex-situ of the Lough Ree SPA. Taking a precautionary approach and in the absence of mitigation measures to avoid such occurrences, further assessment is required with regard to the listed SCIs of this SPA.
	Common Tern <i>Sterna hirundo</i> [A193]	
	Coot <i>Fulica atra</i> [A125]	
	Goldeneye <i>Bucephala clangula</i> [A067]	
	Lapwing <i>Vanellus vanellus</i> [A142]	
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	
	Mallard <i>Anas platyrhynchos</i> [A053]	
	Shoveler <i>Spatula clypeata</i> [A056]	
	Teal <i>Anas crecca</i> [A052]	

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Tufted Duck <i>Aythya fuligula</i> [A061] Whooper Swan <i>Cygnus cygnus</i> [A038] Wigeon <i>Mareca penelope</i> [A050] Golden Plover <i>Pluvialis apricaria</i> [A140]	
	Wetlands and Waterbirds [A999]	This SCI pertains to wetland habitat in-situ of the SPA. As such, this SCI is not expected to experience this effect given its non-species and non-mobile feature. Therefore, no potential exists for significant effects via a reduction in water quality as a result of the Project on this SCI.
Habitat Loss & Alteration	All SCIs (A004, A038, A050, A052, A053, A056, A061, A065, A067, A125, A140, A142, A193, A999)	Works are entirely outside of the SPA and do not remove or modify SPA wetland habitats or ex-situ habitats e.g., at Kilglass Lough; no instream works. Therefore, in the absence of a potential pathway, direct habitat loss/alteration effects are not considered any further
Habitat/Species Fragmentation	Common Scoter <i>Melanitta nigra</i> [A065]	Typical range: Up to 5–10km from roost/nest; mainly local within lake and nearby waterbodies. Lough Ree SPA is c.11.8km south of the wind farm Site (in a straight line), from the northernmost extent of the SPA to the southernmost extent of the wind farm Site boundary. In Irish lakes (such as Lough Ree), most foraging occurs locally within the lake itself and adjoining bays, though birds may move between lakes up to 10km apart when searching for food or undisturbed areas (NPWS). Common Scoter do not typically forage on grassland. Their foraging is almost exclusively aquatic, focused on lakes, large rivers, coastal waters, and sheltered bays where they dive for invertebrates, small fish, and plant material. Their sensitive disturbance distance is 300m-500m for breeding disturbance (Goodship and Furness, 2022). Given no records of this species during surveys, it cannot be significantly affected by fragmentation effects. . As Lough Ree is 14km south of Kilglass Lough, and no other lakes are present in the intervening distance between Lough Ree and the site, no likely significant effects are anticipated on Common scoter and no further assessment of this species is required.
	Common Tern <i>Sterna hirundo</i> [A193]	Range: Usually within 10km of colony (Becker and Ludwig, 2004). Most birds forage within 15km of shore or breeding site with 30km maximum range for coastal colonies (Power <i>et al.</i> , 2021). At a zone of influence of 30km, the construction phase of the Project has the potential to result in likely significant effects on this SCI. Their sensitive disturbance distance is 300m-400m for breeding disturbance (Goodship and Furness, 2022). As such, given no records of this species were recorded during surveys , during I-WeBS or within the NBDC grid square data, no evidence supports Common Tern being a

Effect	QIs [code]/SCIs [code]	Scoping of Effects
		receptor of the Projects effects. Also given the project is outside the 10km foraging range typically observed for this species, no likely significant effects are anticipated on Common Tern from this pathway and no further assessment of this species is required.
	Coot <i>Fulica atra</i> [A125]	Winter population is designated for this site. Coot was only recorded during I-WeBS visits across Kilglass Lough and the lakes north of the Project. Given the intervening distance between Lough Ree and the site, no likely significant effects are anticipated on Coot from this pathway and no further assessment of this species is required.
	Goldeneye <i>Bucephala clangula</i> [A067]	Typical range: Up to 5km Duncan and Marquiss (1993); foraging mostly on nearby waterbodies. Goldeneye disturbance distance is 150m-800m for non-breeding disturbance (Goodship and Furness, 2022). As such, given no records of this species were recorded during surveys, during I-WeBS or within the NBDC grid square data, no evidence supports Goldeneye being a receptor of the Projects effects via this pathway. Also given the project is outside the 5km foraging range typically observed for this species, no likely significant effects are anticipated on Goldeneye and no further assessment of this species is required.
	Lapwing <i>Vanellus vanellus</i> [A142]	Typical range: Typically, within 1–2km of nest while breeding, their sensitivity to disturbance distance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). However, given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line) and the absence of suitable foraging grasslands within boundary of the Project, no likely significant effects are anticipated on Lapwing and no further assessment of this species is required.
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Typical range: Generally, stays within the locality of breeding sites during the winter period, although some movements are likely from small to larger wetlands (Konter & Konter, 2006). Given the intervening distance between Lough Ree and the wind farm Site (c.11.8km south in a straight line), no likely significant effects are anticipated on this SCI and no further assessment of this species is required.
	Mallard <i>Anas platyrhynchos</i> [A053]	Typical range: Although larger distances have been observed, Mallard typically range up to 1km between roosting and foraging habitats during winter (Legagneux <i>et al.</i> , 2009). Assigning a worst-case scenario ZoI of 10km, the Project construction works are will not impact areas of high foraging or roosting value for Mallard. The activity recorded during I-WeBS and VPs supports this finding based on the levels of activity recorded. As such, no likely significant effects are anticipated on Mallard and no further assessment of this species is required.
	Shoveler <i>Spatula clypeata</i> [A056]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Shoveler and no further assessment of this species is required.

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Teal <i>Anas crecca</i> [A052]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Teal and no further assessment of this species is required.
	Tufted Duck <i>Aythya fuligula</i> [A061]	Typical range: Local movements within wetlands, usually <5km between roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Tufted Duck and no further assessment of this species is required.
	Whooper Swan <i>Cygnus cygnus</i> [A038]	Accepted foraging range is 5km from roosting areas (SNH, 2016). Whooper Swan was recorded during I-WeBS within the wider lake network north of Kilglass Lough and occasionally during VPs in winter and migration months (September and April) the nearest flight being over 1km from the nearest turbine (EIAR Appendix 6.5). Their sensitive disturbance distance is 200m-600m for non-breeding disturbance (Goodship and Furness, 2022). As the Project is outside the core foraging range for Whooper Swan, any Whooper Swans forming part of the Lough Ree population cannot be significantly affected by fragmentation effects therefore no further assessment of this species is required.
	Wigeon <i>Mareca penelope</i> [A050]	Typical range: Local movements within wetlands, usually <3km between roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Their sensitivity to disturbance is within 200m-500m for non-breeding birds (Goodship and Furness, 2022). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Wigeon and no further assessment of this species is required.
	Golden Plover <i>Pluvialis apricaria</i> [A140]	Typical Range: Up to 3km core range nest during breeding up to a max of 11km (SNH, 2016); may fly further in non-breeding season, especially during migration. Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), the limited number of individuals recorded during VP surveys (only in April 2024) and no flocks recorded utilising the Kilglass Lough habitat, no likely significant effects are anticipated on this SCI and no further assessment of this species is required.
	Wetlands [A999]	SCI pertains to wetland habitat in-situ of the SPA. As such, this SCI is not expected to experience this effect given its non-species and non-mobile feature. Therefore, no potential exists for significant effects via habitat fragmentation as a result of the Project on this SCI.
Operational Phase		
Disturbance/ Displacement	Common Scoter <i>Melanitta nigra</i> [A065]	Typical range: Up to 5–10km from roost/nest; mainly local within lake and nearby waterbodies. Lough Ree SPA is c.11.8km south of the wind farm Site (in a straight line), from the northernmost extent of the SPA to the southernmost extent of the wind farm Site boundary. In Irish lakes (such as Lough Ree), most foraging occurs locally within the lake itself and adjoining bays, though birds may move between lakes up to 10km apart when searching for food or undisturbed areas (NPWS). Common Scoter do not typically forage on grassland. Their foraging is almost exclusively aquatic, focused on lakes, large

Effect	QIs [code]/SCIs [code]	Scoping of Effects
		rivers, coastal waters, and sheltered bays where they dive for invertebrates, small fish, and plant material. Their sensitive disturbance distance is 300m-500m for breeding disturbance (Goodship and Furness, 2022). Given no records of this species were recorded flying through the VP viewshed area. fragmentation effects are not likely. As Lough Ree is 14km south of Kilglass Lough, and no other lakes are present in the intervening distance between Lough Ree and the site, no likely significant effects are anticipated on Common scoter and no further assessment of this species is required.
	Common Tern <i>Sterna hirundo</i> [A193]	Range: Usually within 10km of colony (Becker and Ludwig, 2004). Most birds forage within 15km of shore or breeding site with 30km maximum range for coastal colonies (Power <i>et al.</i> , 2021). At a zone of influence of 30km, the construction phase of the Project has the potential to result in likely significant effects on this SCI. Their sensitive disturbance distance is 300m-400m for breeding disturbance (Goodship and Furness, 2022). As such, given no records of this species were recorded during VP surveys, during I-WeBS or within the NBDC grid square data, no evidence supports Common Tern being a receptor of the Projects effects via this pathway. Also given the project is outside the 10km foraging range typically observed for this species, operational disturbance / displacement effects are not likely to occur. As such, no likely significant effects are anticipated on Common Tern from this pathway and no further assessment of this species is required.
	Coot <i>Fulica atra</i> [A125]	Winter population is designated for this site. Coot was only recorded during I-WeBS visits across Kilglass Lough and the lakes north of the Project. Given the intervening distance between Lough Ree and the site, no likely significant effects are anticipated on Coot.
	Goldeneye <i>Bucephala clangula</i> [A067]	Typical range: Up to 5km Duncan and Marquiss (1993); foraging mostly on nearby waterbodies. Goldeneye disturbance distance is 150m-800m for non-breeding disturbance (Goodship and Furness, 2022). As such, given no records of this species during VP surveys,, during I-WeBS or within the NBDC grid square data, no evidence supports Goldeneye being a receptor of the Projects effects. Also given the project is outside the 5km foraging range typically observed for this species, no likely significant effects via this pathway are anticipated on Goldeneye.
	Lapwing <i>Vanellus vanellus</i> [A142]	Typical range: Typically, within 1–2km of nest while breeding, their sensitivity to disturbance distance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). However, given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line) and the absence of suitable foraging grasslands within boundary of the Project, no likely significant effects are anticipated via this pathway on Lapwing.
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Typical range: Generally, stays within the locality of breeding sites during the winter period, although some movements are likely from small to larger wetlands (Konter & Konter, 2006). Given the intervening distance between Lough Ree and

Effect	QIs [code]/SCIs [code]	Scoping of Effects
		the wind farm Site (c.11.8km south in a straight line), no likely significant effects are anticipated via this pathway on this SCI.
	Mallard <i>Anas platyrhynchos</i> [A053]	Typical range: Although larger distances have been observed, Mallard typically range up to 1km between roosting and foraging habitats during winter (Legagneux <i>et al.</i> , 2009). Assigning a worst-case scenario ZOI of 10km, the Project construction works will not impact areas of high foraging or roosting value for Mallard. The activity recorded during I-WeBS and VPs supports this finding based on the levels of activity recorded. As such, no likely significant effects from operational disturbance / displacement are anticipated via on Mallard and no further assessment is required.
	Shoveler <i>Spatula clypeata</i> [A056]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Shoveler.
	Teal <i>Anas crecca</i> [A052]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Teal.
	Tufted Duck <i>Aythya fuligula</i> [A061]	Typical range: Local movements within wetlands, usually <5km between roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Tufted Duck.
	Whooper Swan <i>Cygnus cygnus</i> [A038]	Accepted foraging range is 5km from roosting areas (SNH, 2016). Whooper Swan was recorded during I-WeBS within the wider lake network north of the Kilglass Lough and occasionally during VPs in winter and migration months (September and April) the nearest flight being over 1km from the nearest turbine (EIAR Appendix 6.5). Their sensitive disturbance distance is 200m-600m for non-breeding disturbance (Goodship and Furness, 2022). Given the sightings occurred primarily during peak migration periods and as the Project is outside the core foraging range for Whooper Swan, any Whooper Swans forming part of the Lough Ree population cannot be significantly affected by operational phase disturbance / displacement. As such, no likely significant effects are anticipated on Whooper Swan from this pathway and no further assessment is required.
	Wigeon <i>Mareca penelope</i> [A050]	Typical range: Local movements within wetlands, usually <3km between roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Their sensitivity to disturbance is within 200m-500m for non-breeding birds (Goodship and Furness, 2022). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Wigeon.

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Golden Plover <i>Pluvialis apricaria</i> [A140]	Typical Range: Up to 3km core range nest during breeding up to a max of 11km (SNH, 2016); may fly further in non-breeding season, especially during migration. Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), the limited number of individuals recorded during VP surveys (only in April 2024) and no flocks recorded utilising the Kilglass Lough habitat, no likely significant effects via this pathway are anticipated on this SCI and no further assessment of this species is required.
	Wetland and Waterbirds [A999]	This SCI pertains to wetland habitat in-situ of the SPA. As such, this SCI is not expected to experience this effect given its non-species and non-mobile feature.
Pollution/ Contamination	Common Scoter <i>Melanitta nigra</i> [A065]	The Project is connected hydrologically to this SPA. The proposed GCR crosses the Bellmount (or Cloggernagh) Stream 18.7km upstream of the SPA. While there is no EPA mapped watercourses within the wind farm Site, the Culliagh Stream flows adjacent to the eastern boundary of the wind farm site, 22.1km upstream of the SPA. All SCIs for this SPA have suitable foraging habitat within the river networks downstream of the Projects hydrological pathways. Where pollution and contamination events occur along the Feorish and Shannon Upper sub-basin, this could result in indirect effects on food options for these bird species ex-situ of the Lough Ree SPA. As such, taking a precautionary approach and in the absence of mitigation measures to avoid such occurrences, further assessment is required with regard to the listed SCIs of this SPA.
	Common Tern <i>Sterna hirundo</i> [A193]	
	Coot <i>Fulica atra</i> [A125]	
	Goldeneye <i>Bucephala clangula</i> [A067]	
	Lapwing <i>Vanellus vanellus</i> [A142]	
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	
	Mallard <i>Anas platyrhynchos</i> [A053]	
	Shoveler <i>Spatula clypeata</i> [A056]	
	Teal <i>Anas crecca</i> [A052]	
	Tufted Duck <i>Aythya fuligula</i> [A061]	
	Whooper Swan <i>Cygnus cygnus</i> [A038]	

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Wigeon <i>Mareca penelope</i> [A050]	
	Golden Plover <i>Pluvialis apricaria</i> [A140]	
	Wetlands and Waterbirds [A999]	
Mortality (Collision Risk)	Common Scoter <i>Melanitta nigra</i> [A065]	Typical range: Up to 5–10km from roost/nest; mainly local within lake and nearby waterbodies. Lough Ree SPA is c.11.8km south of the wind farm Site (in a straight line), from the northernmost extent of the SPA to the southernmost extent of the wind farm Site boundary. In Irish lakes (such as Lough Ree), most foraging occurs locally within the lake itself and adjoining bays, though birds may move between lakes up to 10km apart when searching for food or undisturbed areas (NPWS). Common Scoter do not typically forage on grassland. Their foraging is almost exclusively aquatic, focused on lakes, large rivers, coastal waters, and sheltered bays where they dive for invertebrates, small fish, and plant material. Their sensitive disturbance distance is 300m-500m for breeding disturbance (Goodship and Furness, 2022). Given no records of this species were recorded flying through the VP viewshed area it cannot be significantly affected by collision mortality/barrier effects. As Lough Ree is 14km south of Kilglass Lough, and no other lakes are present in the intervening distance between Lough Ree and the site, no likely significant effects are anticipated on Common scoter.
	Common Tern <i>Sterna hirundo</i> [A193]	Range: Usually within 10km of colony (Becker and Ludwig, 2004). Most birds forage within 15km of shore or breeding site with 30km maximum range for coastal colonies (Power <i>et al.</i> , 2021). At a zone of influence of 30km, the construction phase of the Project has the potential to result in likely significant effects on this SCI. Their sensitive disturbance distance is 300m-400m for breeding disturbance (Goodship and Furness, 2022). As such, given no records of this species were recorded flying through the VP viewshed area, during I-WeBS or within the NBDC grid square data, it cannot be significantly affected by collision mortality/barrier effects. Also given the project is outside the 10km foraging range typically observed for this species, no likely significant effects are anticipated on Common Tern from this pathway.
	Coot <i>Fulica atra</i> [A125]	Winter population is designated for this site. Coot was only recorded during I-WeBS visits across Kilglass Lough and the lakes north of the Project. Given the intervening distance between Lough Ree and the site, no likely significant effects are anticipated on Coot.
	Goldeneye <i>Bucephala clangula</i> [A067]	Typical range: Up to 5km Duncan and Marquiss (1993); foraging mostly on nearby waterbodies. Goldeneye disturbance distance is 150m-800m for non-breeding disturbance (Goodship and Furness, 2022). As such, given no records of this species were recorded flying through the VP viewshed area, during I-WeBS or within the NBDC grid square data, it cannot

Effect	QIs [code]/SCIs [code]	Scoping of Effects
		be significantly affected by collision mortality/barrier effects. Also given the project is outside the 5km foraging range typically observed for this species, no likely significant effects are anticipated on Goldeneye.
	Lapwing <i>Vanellus vanellus</i> [A142]	Typical range: Typically, within 1–2km of nest while breeding, their sensitivity to disturbance distance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). Given no records of this species were recorded flying through the VP viewshed area, it cannot be significantly affected by collision mortality/barrier effects. The former combined with intervening distance between Lough Ree and the site (c.11.8km south in a straight line) and the absence of suitable foraging grasslands within boundary of the Project, no likely significant effects are anticipated on Lapwing.
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Typical range: Generally, stays within the locality of breeding sites during the winter period, although some movements are likely from small to larger wetlands (Konter & Konter, 2006). Given the intervening distance between Lough Ree and the wind farm Site (c.11.8km south in a straight line), no likely significant effects are anticipated on this SCI.
	Mallard <i>Anas platyrhynchos</i> [A053]	Typical range: Although larger distances have been observed, Mallard typically range up to 1km between roosting and foraging habitats during winter (Legagneux <i>et al.</i> , 2009). Assigning a worst-case scenario ZoI of 10km, the Project construction works will not impact areas of high foraging or roosting value for Mallard. The activity recorded during I-WeBS and VPs supports this finding based on the levels of activity recorded. As such, this species cannot be significantly effected by collision mortality/barrier effects. As such, no likely significant effects are anticipated on Mallard.
	Shoveler <i>Spatula clypeata</i> [A056]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Shoveler.
	Teal <i>Anas crecca</i> [A052]	Typical range: Local movements within wetlands, usually <5km from roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Teal.
	Tufted Duck <i>Aythya fuligula</i> [A061]	Typical range: Local movements within wetlands, usually <5km between roosting or foraging areas (Guillemain <i>et al.</i> , 2008). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Tufted Duck.
	Whooper Swan <i>Cygnus cygnus</i> [A038]	Accepted foraging range is 5km from roosting areas (SNH, 2016). Whooper Swan was recorded during I-WeBS within the wider lake network north of the Kilglass Lough and occasionally during VPs in winter and migration months (September and April) the nearest flight being over 1km from the nearest turbine (EIAR Appendix 6.5). Their sensitive disturbance distance is 200m-600m for non-breeding disturbance (Goodship and Furness, 2022). Given the sightings primarily occurred

Effect	QIs [code]/SCIs [code]	Scoping of Effects
		during peak migration periods and as the Project is outside the core foraging range for Whooper Swan, any Whooper Swans forming part of the Lough Ree population cannot be significantly affected by operational phase collision mortality/barrier effects. As such, no likely significant effects are anticipated on Whooper Swan from this pathway and no further assessment is required.
	Wigeon <i>Mareca penelope</i> [A050]	Typical range: Local movements within wetlands, usually <3km between roosting or foraging areas (Legagneux <i>et al.</i> , 2009). Their sensitivity to disturbance is within 200m-500m for non-breeding birds (Goodship and Furness, 2022). Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), no likely significant effects are anticipated on Wigeon.
	Golden Plover <i>Pluvialis apricaria</i> [A140]	Typical Range: Up to 3km core range nest during breeding up to a max of 11km (SNH, 2016); may fly further in non-breeding season, especially during migration. Given the intervening distance between Lough Ree and the site (c.11.8km south in a straight line), the limited number of individuals recorded during VP surveys (only in April 2024) and no flocks recorded utilising the Kilglass Lough habitat, no likely significant effects via this pathway are anticipated on this SCI and no further assessment of this species is required.
	Wetland and Waterbirds [A999]	This SCI pertains to wetland habitat in-situ of the SPA. As such, no potential exists for significant effects on this SCI via this pathway.
Decommissioning Phase		
Disturbance/ Displacement	Common Scoter <i>Melanitta nigra</i> [A065]	Due to the separation distance between the Project and Lough Ree SPA, the lack of connectivity between the SPA and the Project (including the very low (or absent) numbers of SCI species in the Project area and immediate environs, the scale and localised nature of the works undertaken at decommissioning, and the disturbance distances for the SCI species, disturbance to these SCIs is not expected. Therefore, no likely significant effects are anticipated via this pathway during the decommissioning phase on the listed SCIs. No further assessment of these species is required.
	Common Tern <i>Sterna hirundo</i> [A193]	
	Coot <i>Fulica atra</i> [A125]	
	Goldeneye <i>Bucephala clangula</i> [A067]	
	Lapwing <i>Vanellus vanellus</i> [A142]	
	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	
	Mallard <i>Anas platyrhynchos</i> [A053]	

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Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Shoveler <i>Spatula clypeata</i> [A056] Teal <i>Anas crecca</i> [A052] Tufted Duck <i>Aythya fuligula</i> [A061] Whooper Swan <i>Cygnus cygnus</i> [A038] Wigeon <i>Mareca penelope</i> [A050] Golden Plover <i>Pluvialis apricaria</i> [A140] Wetland and Waterbirds [A999]	
Pollution/ Contamination	Common Scoter <i>Melanitta nigra</i> [A065] Common Tern <i>Sterna hirundo</i> [A193] Coot <i>Fulica atra</i> [A125] Goldeneye <i>Bucephala clangula</i> [A067] Lapwing <i>Vanellus vanellus</i> [A142] Little Grebe <i>Tachybaptus ruficollis</i> [A004] Mallard <i>Anas platyrhynchos</i> [A053] Shoveler <i>Spatula clypeata</i> [A056] Teal <i>Anas crecca</i> [A052]	The Project is connected hydrologically to this SPA. The proposed GCR crosses the Bellmount (or Cloggernagh) Stream 18.7km upstream of the SPA. While there is no EPA mapped watercourses within the wind farm Site, the Culliagh Stream flows adjacent to the eastern boundary of the wind farm site, 22.1km upstream of the SPA. All SCIs for this SPA have suitable foraging habitat within the river networks downstream of the Projects hydrological pathways. Where pollution and contamination events occur along the Feorish and Shannon Upper sub-basin, this could result in indirect effects on food options for these bird species ex-situ of the Lough Ree SPA. Taking a precautionary approach and in the absence of mitigation measures to avoid such occurrences, further assessment is required with regard to the listed SCIs of this SPA.

Effect	QIs [code]/SCIs [code]	Scoping of Effects
	Tufted Duck <i>Aythya fuligula</i> [A061]	
	Whooper Swan <i>Cygnus cygnus</i> [A038]	
	Wigeon <i>Mareca penelope</i> [A050]	
	Golden Plover <i>Pluvialis apricaria</i> [A140]	
	Wetland and Waterbirds [A999]	
	Wetlands and Waterbirds [A999]	SCI pertains to wetland habitat in-situ of the SPA. As such, this SCI is not expected to experience this effect given its non-species and non-mobile feature.

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Table 9 Assessment of Likely Significant Effects for Ballykenny-Fisherstown Bog SPA , with analysis per SCI (shaded effects are brought forward to AA Stage 2 (NIS)).

Effect	QIs [code]/SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	The foraging range of Greenland White-fronted Goose is 8km and the Ballykenny-Fisherstown Bog SPA is located 7.4km (in a straight line) from the wind farm Site - within the foraging range for this SCI. There is nearby suitable habitat for this SCI to use, (Kilglass Lough), and hence this species is likely to move through, or potentially linger in, landscapes near the Project site. Construction-phase activities (noise, human presence, machinery) introduce a credible risk of disturbing geese in local habitats outside the SPA, including Kilglass Lough. Displaced or disturbed geese may alter feeding and roosting behaviour, affecting their energy budgets and overall SPA conservation objectives. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Due to the absence of a direct hydrological connectivity between the Project and Ballykenny-Fisherstown Bog SPA, contamination effects are not expected to in-situ habitats for the SCI. However, the Kilglass Lough is part of this SCIs key foraging range according to the site synopsis (NPWS, 2012). As such, pollution events via the Owenur_030 and Mountain (Roscommon)_010 sub-basins cannot be ruled out. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Habitat Loss & Alteration	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	There are no works within the SPA or its supporting ex-situ feeding/roost areas, and there is no habitat take of Kilglass Lough or other known ex-situ areas. Greenland White-fronted Goose use wet grasslands, callows, and marshes for feeding—especially those with sedges, rushes, and grasses, and lakes, bogs, and undisturbed open water edges for roosting. They avoid woodland, dense scrub, and heavily disturbed/built-up areas. As the Project does not involve the loss of these types of foraging habitats, habitat loss/alteration effects are not considered likely.
Habitat/Species Fragmentation	Greenland White-fronted Goose [A395]	No removal or severance of ex-situ feeding/roost habitat; turbines and tracks are remote from the SPA and established foraging areas. Fragmentation effects are therefore not considered likely.
Operational Phase		
Disturbance/ Displacement	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	The foraging range of Greenland White-fronted Goose is 8km and the Ballykenny-Fisherstown Bog SPA is located 7.4km (in a straight line) from the wind farm Site - within the foraging range for this SCI. There is nearby suitable habitat for this SCI to use, (Kilglass Lough), and hence this species is likely to move through, or potentially linger in, landscapes near the Project site. Operational-phase activities (visual and noise from operational turbines, noise, human presence, machinery) introduce a credible risk of disturbing geese in local habitats outside the SPA, including Kilglass Lough. Displaced or disturbed geese may alter feeding

		and roosting behaviour, affecting their energy budgets and overall SPA conservation objectives. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Due to the absence of hydrological connectivity between the Projects operational sources and Ballykenny-Fisherstown Bog SPA, contamination effects are not expected. Therefore, likely significant contamination related effects arising from the operational phase of the Project on these SCIs are not considered likely.
Mortality	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Due to the absence of any records of Greenland White-fronted Goose during field surveys, the separation distance between the turbines and the SPA, the high avoidance rate of turbines by grey geese (99.8%; SNH, 2013) and the low risk associated with grey geese collisions with wind turbines (NatureScot, 2025), mortality effects are not expected. Therefore, likely significant mortality related effects arising from the operational phase of the Project on these SCIs are not considered likely.
Decommissioning Phase		
Disturbance/ Displacement	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	The foraging range of Greenland White-fronted Goose is 8km and the Ballykenny-Fisherstown Bog SPA is located 7.4km (in a straight line) from the wind farm Site - within the foraging range for this SCI. There is nearby suitable habitat for this SCI to use, (Kilglass Lough), and hence this species is likely to move through, or potentially linger in, landscapes near the Project site. Decommissioning-phase activities (noise, human presence, machinery) introduce a credible risk of disturbing geese in local habitats outside the SPA, including Kilglass Lough. Displaced or disturbed geese may alter feeding and roosting behaviour, affecting their energy budgets and overall SPA conservation objectives. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Due to the absence of a direct hydrological connectivity between the Project and Ballykenny-Fisherstown Bog SPA, contamination effects are not expected to in-situ habitats for the SCI. However, the Kilglass Lough is part of this SCIs key foraging range according to the site synopsis (NPWS, 2012). As such, pollution events via the Owenur_030 and Mountain (Roscommon)_010 sub-basins cannot be ruled out. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.

Table 10 Assessment of Likely Significant Effects for Lough Ree SAC, with analysis per QI (shaded effects are brought forward to AA Stage 2 (NIS)). .

Effect	QIs [code]/SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Otter (<i>Lutra lutra</i>) [1355]	Otter is present within the connected watercourses of the Grid Connection Route. Due to its presence downstream of construction related works, and that the Project is within the foraging distance for Otter, there is potential for disturbance effects to occur. The construction phase may introduce disturbance (noise, vibration, water pollution, habitat alteration) into connected watercourses, with potential downstream transfer to areas used by otters, even if not directly adjacent to the SAC. Otter's use of a wide landscape via connected rivers means they may experience disturbance or displacement downstream of work areas. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	Otter (<i>Lutra lutra</i>) [1355]	Otter is present within the connected watercourses of the Grid Connection Route. Hence, they are vulnerable to any waterborne contaminants arising from construction activities (e.g., hydrocarbons, silt, chemical spills). Due to its presence downstream of construction related works, there is potential for contamination effects to occur. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Mortality	Otter (<i>Lutra lutra</i>) [1355]	During the construction phase of the Project, movement of vehicles is the primary source for this pathway. This impact has the potential to occur within the wind farm Site and on the watercourse crossing along the GCR for Otter. Otters have the potential to leave the watercourses within the receiving environment and cross public roads and construction site roads. However, given the elevation at which the Project is located, the streams directly adjacent to the Project are small and therefore unlikely to have Otter present to interact with project vehicles. Therefore, likely significant mortality related effects arising from the construction phase of the Project on Otter is not considered likely.
Habitat Loss & Alteration	Otter (<i>Lutra lutra</i>) [1355]	No land-take or instream works within the SAC or connected watercourses; GCR uses cable trenching within the existing R371 road at Bellmount (Cloggernagh) Stream. No holts/couches recorded downstream of the Site; otter use downstream is commuting/foraging. Therefore, habitat loss/alteration leading to likely significant effects is not expected.
Habitat/Species Fragmentation	Otter (<i>Lutra lutra</i>) [1355]	Temporary cable trenching at an existing bridge crossing; no instream works and no new physical barriers to riparian movement. Fragmentation of commuting corridors is not expected to give rise to likely significant effects.
Operational Phase		

Disturbance/ Displacement	Otter (<i>Lutra lutra</i>) [1355]	Otter is present within the connected watercourses of the Grid Connection route. Due to its presence downstream, and that the Project is within the foraging distance for Otter, there is potential for disturbance effects to occur. Regular or sporadic use of maintenance vehicles and personnel moving along the Grid Connection route and associated infrastructure, occasional works to repair, upgrade, or inspect equipment, associated noise, vibration, or movement near watercourses used by Otters, unscheduled events (e.g., emergency repairs or incidents requiring rapid response near otter habitat). These activities could cause short-term displacement, stress, avoidance behaviour, or interruption of foraging, breeding, or holt use if they occur close to sensitive habitat features—even outside the SAC, but within the Otter's range. Lighting could potentially cause indirect impacts, such as slight avoidance of brightly lit areas if lights are especially intense or close to riparian habitat (e.g., bridges). As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	Otter (<i>Lutra lutra</i>) [1355]	Otter is present within the connected watercourses of the Grid Connection Route. Hence, they are vulnerable to any waterborne contaminants arising from construction activities (e.g., hydrocarbons, silt, chemical spills). Due to its presence downstream, there is potential for contamination effects to occur. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Mortality	Otter (<i>Lutra lutra</i>) [1355]	Movement of vehicles is the sole source for this pathway from the operational phase of the Project via maintenance works at the wind farm Site and along the Grid Connection near the watercourse crossings. However, given the elevation at which the Project is located, the streams directly adjacent to the Project are small and therefore unlikely to have Otter present to interact with project vehicles. Therefore, likely significant mortality related effects arising from the operational phase of the Project on Otter is not considered likely.
Decommissioning Phase		
Disturbance/ Displacement	Otter (<i>Lutra lutra</i>) [1355]	Due to the presence of Otter downstream of decommissioning related works, and that the Project is within the foraging distance for Otter, there is potential for disturbance effects to occur. Otter is the only Mobile QI that has suitable habitat downstream of the Project. No other QIs listed for the Lough Ree SAC have the potential to be impacted by this pathway. As such, Otter is considered for ex-situ effects. This phase of works is proposed to occur 35 years after the completion of the construction phase. As such, the extent of significant effects can be assessed based on the existing baseline with the future baseline effects dependent on the ecological baseline surveys conducted prior to these works beginning. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	Otter (<i>Lutra lutra</i>) [1355]	Due to the presence of Otter downstream of decommissioning related works, there is potential for contamination effects to occur. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Mortality	Otter (<i>Lutra lutra</i>) [1355]	During the decommissioning phase of the Project, movement of vehicles is the primary source for this pathway. This impact has the potential to occur within the wind farm Site and on the watercourse crossing along the GCR for Otter. No other QIs or SCIs were identified as potential receptors for this effect. Otters have the potential to leave the watercourses within the receiving environment and cross public roads and construction site roads. However, given the elevation at which the Project is located, the streams directly

		adjacent to the Project are small and therefore unlikely to have Otter present to interact with project vehicles. Therefore, likely significant mortality related effects arising from the decommissioning phase of the Project on Otter is not considered likely .
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5.7. In-Combination Effects

Legislation, guidance and case law (see **Section 1.1** and **Section 3.1**) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the Project. **EIAR Chapter 16 - Cumulative Effects Assessment** details the approach to the assessment of cumulative effects.

5.8. Projects

Appendix 16.1: Long List of other Projects for Cumulative Effects Assessment presents the list of other projects that have the potential to cause cumulative effects together with the proposed Project.

In brief, the list of other projects was established from a desk study of relevant data sources completed in mid-May 2025 for any new and relevant sites. Planning applications older than 10 years were excluded from the list. These are likely to have already been built or no longer being progressed. The list includes other wind farm and relevant projects within a 20km radius of the proposed wind farm Site, incorporating the GCR; and relevant projects within a 50m buffer either side of the proposed Turbine Delivery Route (TDR).

This list was further refined based on likely significant cumulative effects arising to biodiversity. Scoped-in projects included all wind farms within 20km of the Project, other projects within 2km of the Redline Boundary or 50m of relevant nodes on the TDR. A summary of these scoped-in projects is shown in **Table 5.3**.

Due to the scale of the Project and the extent of likely significant effects to be considered in stage 2 of this AA, any project with potential for in-combination effects were screened-in for adverse in-combination effects under the precautionary principle. A total of six projects were screened in for assessment as having the potential to give rise to likely significant in-combination effects (Table 11 Planning Search Results from the County Planning and EIA Portal Maps.).

A full assessment of in-combination effects for scoped-in projects is presented in **Section 9**.

5.9. Plans

5.9.1. Roscommon County Development Plan 2022-2028³

The Roscommon County Development Plan 2022-2028 (Roscommon County Council, 2022) is compliant with the Planning and Development Act, 2000 (as amended), which dictates the inclusion of a number of mandatory objectives, including:

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

³ Roscommon County Council (2022) Roscommon County Development Plan 2022-2028, Roscommon County Development Plan. Available at: <https://www.rosdevplan.ie/> (Accessed: 16 April 2024).

To this effect, it is a specific Objective of the Roscommon County Development Plan to:

- **CDP 5.7 Renewable Energy:** Rural areas have the potential to be harnessed for renewable energy projects, including wind, hydro and solar energy. Chapter 8 of the CDP outlines the policy objectives for renewable energy within the County.
- **CDP 8 Climate Action, Energy and Environment:** Climate action refers to a global recognition of the need to increase efforts to reduce greenhouse gas emissions and increase resilience and adaptability to climate-related hazards.
- **CDP 10: Natural Heritage:** County Roscommon supports a wide range of natural heritage and biodiversity of local and national importance. A wide range of economic and social benefits and services result from the protection of environmental quality and biodiversity.

No significant in-combination effect between the Project and actions within the Roscommon CDP are considered likely, so this plan is screened out from further assessment.

5.9.2. Other Plans

No Biodiversity Action Plan has been published for Co. Roscommon.

The 4th National Biodiversity Action Plan 2023 – 2030⁴ provides broad objectives for government and local authorities to promote biodiversity recovery and enhancement across the island of Ireland.

There are five main objectives in this document:

- Objective 1: Adopt a Whole-of- Government, Whole- of-Society Approach to Biodiversity
- Objective 2: Meet Urgent Conservation and Restoration Needs
- Objective 3: Secure Natures Contribution to People
- Objective 4: Enhance the Evidence Base for Action on Biodiversity
- Objective 5: Strengthen Ireland’s Contribution to International Biodiversity Initiatives

No significant in-combination effect between the Project and other plans (including the National Biodiversity Action Plan) are considered likely, so this plan is screened out from further assessment.

⁴ <https://www.npws.ie/legislation/national-biodiversity-action-plan>

Table 11 Planning Search Results from the County Planning and EIA Portal Maps.

Project	Planning / Project Ref.	Nearest Distance to the Proposed wind farm Site	Description / Status	Scoped in / out for cumulative assessment
Ballyfeeny Rock Quarry	07272	Shared boundary	Active quarry and ancillary processes (blasting, crushing, screening).	Yes
Sliabh Bawn Wind Farm	10507	3km	Operational 20-turbine wind farm.	Yes
Lanesboro- Sliabh Bawn, 100kV overhead line upgrade	23342	3km	Upgrade the existing Lanesboro - Sliabh Bawn 100kV overhead line.	Yes
Derryadd Wind Farm	322485	16km	Construction of a wind farm comprising 22 no. wind turbines, 1 no. 110kV substation and all related works.	Yes
Ion Renewables BESS	22223	9km	Construction of a stationary battery energy storage facility which includes forty 20ft containers and eight medium voltage transformers and (ii) all associated site and development works	No
Ballykenny Solar Farm	305969/19222	12km	Construction of a 9MW solar farm with associated infrastructure, landscaping and cable route	No
Cloon to Lanesborough 110kV Overhead line	302597/18/320	12.5km	Refurbish the existing single circuit 110kV overhead electricity line.	No
Clegghill Solar Farm	248470/1747	13km	Construction of a solar farm comprising of photovoltaic panels on ground mounted frames, together with associated infrastructure	No
Lough Ree Power Station (BESS & Sync Con)	2275/315485	13km	Development at the 'Lough Ree Power (LRP) Station', consisting of the demolition of the existing LRP station and the development and operation of electricity grid services - namely a battery energy storage system (BESS) and a Synchronous Condenser (Sync Con).	No

Kinbrace Battery Energy Storage System (BESS)	301965/PD18/7	14km	Battery energy storage facility which will comprise of rechargeable battery units contained within up to 31 No. 40 foot containers on site and associated development of unit substations.	No
Derrane Wind Farm	303677	16km	Construction of a wind farm comprising 2 no. wind turbines, and all related works.	Yes
N5 Ballaghaderreen to Scramoge Realignment Scheme	300493	3km	N5 Ballaghaderreen to Scramoge Road Development and associated CPO. The proposed road has been designed as a Type 1 Single Carriageway Cross section with two 3.65m lanes and associated hard shoulders, road verges and drainage ditches.	Yes

6. SCREENING CONCLUSIONS

Inis Environmental Consultants Ltd. has prepared this report to inform an AA screening to assess whether the Project at Strokestown, Co. Roscommon, individually or in combination with other plans or projects, and in view of best scientific knowledge, is likely to have a significant effect on any European site(s).

The screening exercise was completed in compliance with the relevant European Commission guidance, national guidance, and case law. The potential impacts of the Project have been considered in the context of the European sites potentially affected, their QIs or SCIs, and their Conservation Objectives.

Through an assessment of the source-pathway-receptor model, which considered the Zol of effects from the Project and the potential in-combination effects with other plans or projects, the following findings were reported:

- The Project is not directly connected with, or necessary to, the management of any European site;
- In the absence of mitigation, likely significant effects arising from the Project **cannot be ruled out** on the QIs of **Lough Ree SAC**, in view of best scientific knowledge and in view of the Conservation Objectives of the European site concerned; and
- In the absence of mitigation, likely significant effects arising from the **Project cannot be ruled out** on the SCIs of **Lough Ree SPA and Ballykenny-Fisherstown Bog SPA**, in view of best scientific knowledge and in view of the Conservation Objectives of the European site concerned.

On the basis of objective scientific information and in completion of the report to inform Screening for AA in respect of the proposed wind farm Project at Ballyfeeny, and surrounding townlands, Co. Roscommon, it is the considered opinion of Inis Environmental Consultants Ltd. that in the absence of mitigation, likely significant effects on the receptors identified in Table 12 in following European sites (Lough Ree SAC, Lough Ree SPA & Ballykenny-Fisherstown Bog SPA) cannot be ruled out during the construction, operation and decommissioning phases of the proposed Project. As a result it is respectfully submitted that the competent authority carry out an Appropriate Assessment (AA) in respect to the proposed Project. To assist with the AA, relevant Qis/SCIs, either individually or in-combination with other projects and plans and are further assessed for possible adverse effects below within **the Stage 2 NIS**. See Table 12 for a summary of the screening results.

Table 12 Summary of impact assessment on European sites as a result of the Project

	Lough Ree SAC (000440)	Ballykenny–Fisherstown Bog SPA (004101)	Lough Ree SPA (004064)
Habitat Loss / Alteration	No	No	No
Habitat or Species Fragmentation	No	No	No
Disturbance and/or Displacement of Species	Yes (Otter ex-situ)	Yes (Greenland White- fronted Goose ex-situ)	No
Changes in Population Density	No	No	No
Changes in Water Quality and/or Resource	Yes (Otter)	No	Yes (Several SCIs ex-situ)
In-combination effects	Yes	Yes	Yes
Stage 2 AA Required	Yes	Yes	Yes

7. STAGE 2: NATURA IMPACT STATEMENT (NIS)

The Stage 2 NIS of this AA report examines whether the Project has the potential to cause adverse effects on the integrity of any European sites through the impact pathways screened in during Stage 1, based on the S-P-R model, appraised in Section 5.4 and further scoped in Section 5.6.

Sources for likely significant effects associated with each of the Project phases have been appraised and associated with different potential zones of influence. This Statement will specifically appraise the significance of any effects on the Qis and SCIs of **Lough Ree SAC and SPA**, and **Ballykenny-Fisherstown Bog SPA**, within each of these zones of influence identified in the stage 1 screening to be potentially affected and their associated Conservation Objectives.

7.1. NIS Methodology

This NIS has been prepared following the steps described below:

- Review and description of available data for the relevant European site(s) potentially affected as identified in the Screening Report;
- Identification and description of potential effects on the relevant European site(s) and their designated Qis/SCIs;
- Assessment of the likely significance of the effects and/or impacts identified on the relevant Qis/SCIs in view of their Site-Specific Conservation Objectives (SSCOs);
- Description and characterisation of other projects or plans that in combination with the Development have the potential for having significant effects on the relevant Qis/SCIs in view of their SSCOs; and
- Identification of appropriate mitigation measures to remove the likelihood of significant effects on any European site(s) and their Qis/SCIs;
- Exclusion of sites where it can be objectively concluded that there will be no significant effects once mitigation measures are adhered to.

7.2. Sources and Pathways for Adverse Effects on Integrity

The Stage 1 Screening for Likely Significant Effects (LSE) process, following the Source-Pathway-Receptor model conceptualised for the Project construction phase (**Section 5.4**), identified several possible sources for LSEs on the Qis and SCIs of Lough Ree SAC and SPA and Ballykenny-Fisherstown Bog SPA (see **Table 13**).

Table 13 Summary of sources and pathways giving rise to possible LSEs on Qis/SCIs from the Project

Site	Source	Pathway	Project Phase			LSEs
			Construction	Operational	Decommissioning	
Lough Ree SAC	Disturbance	Air/Ground	Otter	Otter	Otter	The following potential likely significant effects were considered for the relevant Qis screened-in for the Lough Ree SAC. - Disturbance/displacement to ex-situ Otter; - Changes in key indicators of conservation status value for ex-situ Otter (water quality).
	Contamination	Hydrological				
Lough Ree SPA	Contamination	Hydrological	Common Scoter, Common Tern, Coot, Goldeneye, Lapwing, Little Grebe, Mallard, Shoveler, Teal, Tufted Duck, Whooper Swan, Wigeon, Golden Plover and Wetlands & Waterbirds.	Common Scoter, Common Tern, Coot, Goldeneye, Lapwing, Little Grebe, Mallard, Shoveler, Teal, Tufted Duck, Whooper Swan, Wigeon, Golden Plover and Wetlands & Waterbirds	Common Scoter, Common Tern, Coot, Goldeneye, Lapwing, Little Grebe, Mallard, Shoveler, Teal, Tufted Duck, Whooper Swan, Wigeon, Golden Plover and Wetlands & Waterbirds	The following potential likely significant effects were considered for the relevant SCIs screened-in for the Lough Ree SPA. Pollution/Contamination for species recorded/foraging at Kilglass Lough and other sites hydrologically connected downstream of the Project but ex-situ of the SPA.
Ballykenny-Fisherstown Bog SPA	Disturbance	Air	Greenland White-fronted Goose	Greenland White-fronted Goose	Greenland White-fronted Goose	The following potential likely significant effects were considered for the relevant SCIs screened-in for the Ballykenny-Fisherstown Bog SPA. Disturbance/displacement to SCI species ex-situ of the SPA.

7.3. European Sites' Qis/SCIs Potentially Affected by the Project

The likelihood of significant effects on the Conservation Objectives (CO) of those European sites with connectivity to the Project has been considered with regards to construction, operation and decommissioning phases of the Project. Qualifying Interests (Qis) / Special Conservation Interests (SCIs), their conservation objectives, and threats to those conditions for the relevant European sites are outlined in **Table 14**. Information based on the Natura 2000 standard data form⁵.

⁵ [natura2000 /expertviewer/](#)

Table 14 Conservation status key conditions and threats to relevant Qis/SCIs Screened in for Assessment

Relevant Qis/SCIs	National Conservation Status (NPWs, 2019b)	Site-Level Status	Primary Pressures and Threats (Inside/Outside)	Distribution within Site Available
Lough Ree SAC				
Otter	Favourable	Good	Water pollution, habitat disturbance, fragmentation, prey availability	No
Ballykenny-Fishertown Bog SPA				
Greenland White-fronted Goose	Favourable	Absent from site since 1990/1991 ⁶	Changes in biotic conditions (Outside) Modification of cultivation practices (Inside) Annual and perennial non-timber crops (Inside) Renewable abiotic energy use (Inside) Utility and service lines (Inside) Improved access to site (Inside) Marine and Freshwater Aquaculture (Inside) Hunting and collection of wild animals (terrestrial) (Inside/Outside) Outdoor sports and leisure activities, recreational activities (Inside) Marine water pollution (Inside) Grazing (Inside) Agriculture activities not referred to above (Inside) Forest planting on open ground (Inside) Other forms of pollution (Inside) Interspecific faunal relations (Inside) Changes in abiotic conditions (Outside)	No
Lough Ree SPA				

⁶ <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004101.pdf>

Relevant Qis/SCIs	National Conservation Status (NPWs, 2019b)	Site-Level Status	Primary Pressures and Threats (Inside/Outside)	Distribution within Site Available
Common Scoter <i>Melanitta nigra</i> [A065]	Favourable	Stable/ Increasing	Pollution to surface waters, Fertilisation (Inside) Forestry (Outside) Invasive non-native species (Inside) Interspecific faunal relations (Inside) Changes to biotic conditions (Inside/Outside) Grazing (Inside) Outdoor sports and leisure activities, recreational activities (Inside)	Full distribution not known. Min 30 individuals within site
Common Tern <i>Sterna hirundo</i> [A193]	Favourable	Stable	Outdoor sports and leisure activities, recreational activities (Inside) Roads, paths and railroads (Inside) Renewable abiotic energy use (Inside) Other forms of pollution (Inside) Invasive non-native species (Inside)	Full distribution not known. Minimum 90 pairs within site
Coot <i>Fulica atra</i> [A125]	Unknown	Poor	Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Renewable abiotic energy use (Inside) Other forms of pollution (Inside) Invasive non-native species (Inside)	Full distribution not known. Minimum 250 individuals within the site.
Goldeneye <i>Bucephala clangula</i> [A067]	Unfavourable – Deteriorating	Poor	Changes in biotic conditions – Cultivation & Fertilisation (Inside/Outside) Forestry (Outside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Hunting and collection of wild animals (terrestrial) (Inside) Renewable abiotic energy use (Inside) Marine and Freshwater Aquaculture (Inside)	Full distribution not known. Minimum 137 individuals within the site.

Relevant Qis/SCIs	National Conservation Status (NPWs, 2019b)	Site-Level Status	Primary Pressures and Threats (Inside/Outside)	Distribution within Site Available
			Other forms of pollution (Inside) Invasive non-native species (Inside)	
Lapwing <i>Vanellus vanellus</i> [A142]	Decrease	Stable	Renewable abiotic energy use (Inside) Modification of cultivation practices (Inside) Marine and Freshwater Aquaculture (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Invasive non-native species (Inside)	Full distribution not known. Minimum 3870 individuals within the site.
Little Grebe <i>Tathagatas ruficollis</i> [A004]	Increasing	Poor	Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Outdoor sports and leisure activities, recreational activities (Inside) human induced changes in hydraulic conditions (Inside) Invasive non-native species (Inside)	Full distribution not known. Minimum 34 individuals within the site.
Mallard <i>Anas platyrhynchos</i> [A053]	Decreasing	Poor	Renewable abiotic energy use (Inside) Modification of cultivation practices (Inside) Hunting and collection of wild animals (terrestrial) (Inside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Other forms of pollution (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Invasive non-native species (Inside) human induced changes in hydraulic conditions (Inside)	Minimum 675 individuals wintering the site.
Shoveler <i>Spatula clypeata</i> [A056]	Fluctuating	Poor	Outdoor sports and leisure activities, recreational activities (Inside) Hunting and collection of wild animals (terrestrial) (Inside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Other forms of pollution (Inside) Invasive non-native species (Inside)	Total distribution unknown, minimum 40 individuals wintering the site.

Relevant Qis/SCIs	National Conservation Status (NPWs, 2019b)	Site-Level Status	Primary Pressures and Threats (Inside/Outside)	Distribution within Site Available
Teal <i>Anas crecca</i> [A052]	Stable/favourable	Poor	Renewable abiotic energy use (Inside) Modification of cultivation practices (Inside) Hunting and collection of wild animals (terrestrial) (Inside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Other forms of pollution (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Invasive non-native species (Inside) human induced changes in hydraulic conditions (Inside)	Total distribution unknown, minimum 912 individuals wintering the site.
Tufted Duck <i>Aythya fuligula</i> [A061]	Stable	Wintering – Poor Breeding – Stable	Changes in biotic conditions (Inside/Outside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Renewable abiotic energy use (Inside/outside) Outdoor sports and leisure activities, recreational activities (Inside) Hunting and collection of wild animals (terrestrial) (Inside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Other forms of pollution (Inside) Invasive non-native species (Inside)	Total distribution unknown, minimum breeding 265 individuals and 665 wintering individuals within the site.
Whooper Swan <i>Cygnus cygnus</i> [A038]	Decreasing	Poor	Utility and service lines (Inside) Renewable abiotic energy use (Inside) Modification of cultivation practices (Inside) Agriculture activities not referred to above (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Other forms of pollution (Inside) Invasive non-native species (Inside)	Total distribution unknown, minimum 89 individuals within the site.

Relevant Qis/SCIs	National Conservation Status (NPWs, 2019b)	Site-Level Status	Primary Pressures and Threats (Inside/Outside)	Distribution within Site Available
Wigeon <i>Mareca penelope</i> [A050]	Decreasing	Poor	Renewable abiotic energy use (Inside) Marine and Freshwater Aquaculture (Inside) Modification of cultivation practices (Inside) Hunting and collection of wild animals (terrestrial) (Inside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Other forms of pollution (Inside) Outdoor sports and leisure activities, recreational activities (Inside) Invasive non-native species (Inside) human induced changes in hydraulic conditions (Inside) Invasive non-native species (Inside)	Total distribution unknown, minimum 1475 individuals within the site.
Golden Plover <i>Pluvialis apricaria</i> [A140]	Decreasing	Poor	Renewable abiotic energy use (Inside) Marine and Freshwater Aquaculture (Inside) Pollution to surface waters (limnic & terrestrial, marine & brackish) (Inside) Modification of cultivation practices (Inside) Renewable abiotic energy use (Inside/outside) Outdoor sports and leisure activities, recreational activities (Inside) Other forms of pollution (Inside) Invasive non-native species (Inside)	Total distribution unknown, minimum 2,035 individuals within the site.
Wetland and Waterbirds [A999]	Unfavourable	Varying	All threats listed in rows above.	Not Applicable.

7.4. Assessment of Effects

Table 15, outlines the attributes and targets associated with the site-specific conservation objectives (SSCOs) for the relevant Qis/SCIs as identified in the preceding section. The potential significant effects of the Project on these attributes and targets are assessed. The assessment outlined below does not consider the influence of mitigation measures on LSEs, which will be considered in Section 8

Table 15 Appropriate Assessment of potential adverse effects on relevant European site integrity in the context of QI/SCI features and their Conservation Objectives during the construction, operation and decommissioning phases of the Project.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
Lough Ree SAC						
Otter [1355]	Distribution	No Significant Decline	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Noise, Vibration; Human presence; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Air - direct (noise, vibration, light)	Disturbance to ex-situ Otter;	Yes. Otter are noise and light sensitive, and highly mobile. Hence in the absence of mitigation, potential adverse effects are likely (albeit likelihood is low). Mitigation to be considered at the next stage of assessment.
					Ex-situ Otter habitat fragmentation; Reduction or fragmentation in ex-situ Otter density.	No. No habitat reduction or fragmentation will occur.
				Surface water run-off (pollution/contamination).	Changes in key indicators of conservation status value for ex-situ Otter (water quality).	Yes. Potential effects on ex-situ distribution within waterbodies upstream of this designated site.
	Extent of Terrestrial Habitat (terrestrial)	No significant decline. Area mapped and calculated as 330.6ha along riverbanks/lake/shoreline/around pools	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Noise, Vibration; Human presence; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Air (Light and noise impacts).	Disturbance to ex-situ Otter;	No. Potential effects on ex-situ distribution within waterbodies upstream of this designated site.
					Ex-situ Otter habitat fragmentation; Reduction or fragmentation in ex-situ Otter density.	No. No loss of habitats will occur.
				Surface water run-off (pollution/contamination).	Changes in key indicators of conservation status value for ex-situ Otter (water quality).	No. Run-off affects water quality/prey and is assessed under the water-quality/fish biomass or freshwater habitat attributes—not “Extent of terrestrial habitat,” which concerns the area of riparian habitat rather than its aquatic quality.
	Extent of Freshwater (River) Habitat	No significant decline. Length mapped and calculated as 22.7km	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Noise, Vibration; Human presence; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Air (Light and noise impacts).	Disturbance to ex-situ Otter;	No. No loss of habitats will occur.
					Ex-situ Otter habitat fragmentation; Reduction or fragmentation in ex-situ Otter density.	
				Surface water run-off (pollution/contamination).	Changes in key indicators of conservation status value for ex-situ Otter (water quality).	
	Extent of Freshwater (Lake) Habitat	No significant decline. Area mapped and calculated as 2097.4ha	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	
	Couching sites and Holts	No significant decline	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works;	Air (Light and noise impacts).	Disturbance to ex-situ Otter;	No. No couching habitats within proximity to the Project exist.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity				
			Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).		Ex-situ Otter habitat fragmentation; Reduction or fragmentation in ex-situ Otter density.					
			Operation (Noise, Vibration; Human presence; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).							
			Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles; Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Changes in key indicators of conservation status value for ex-situ Otter (water quality).					
	Fish Biomass available	No significant decline	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Changes in key indicators of conservation status value for ex-situ Otter (water quality)	Yes. Potential effects of moderate significance on ex-situ distribution within waterbodies upstream of this designated site. Potential to depress local prey availability via turbidity and hydrocarbons.				
			Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).							
			Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).							
	Barriers to connectivity	No significant increase.	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Air (Light and noise impacts).	Disturbance to ex-situ Otter;	Yes Otter is present within the connected watercourses of the Grid Connection route. Due to its presence downstream of construction related works, and that the Project is within the foraging distance for Otter, there is potential for barrier effects to occur - albeit temporarily. The construction phase may introduce disturbance (noise, vibration, water pollution, habitat alteration) into connected watercourses, with potential downstream transfer to areas used by otters, even if not directly adjacent to the SAC.				
							Ex-situ Otter habitat fragmentation; Reduction or fragmentation in ex-situ Otter density.	No. No habitat reduction or fragmentation will occur.		
					Surface water run-off (pollution/contamination).	Changes in key indicators of conservation status value for ex-situ Otter (water quality).	Yes. Potential effects on ex-situ distribution within waterbodies upstream of this designated site.			
Ballykenny-Fisherstown SPA										
Receptor [Code]						Attribute	Target	Source	Relevant Pathways	Potential Impacts
Greenland White-fronted Goose [A395]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.				
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging).	Air (Light and noise impacts).	Disturbance to ex-situ Greenland White-fronted Goose;	No. Moving turbines have the potential to deter this SCI flying through area between the Kilglass Lough and this SPA site. However, displacement for this SCI is not likely due to the absence of this species within the Kilglass I-WeBS surveys and VP efforts. Also, effects on the ex-situ distribution through disturbance are not considered likely due to lack of extensive, suitable winter foraging habitats at the proposed Project site, the spatial				
			Operation (Noise, Vibration; Human presence; Movements of vehicles; Operational Turbines).		Ex-situ Greenland White-fronted Goose habitat fragmentation;					

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles;).	Air (Light and noise impacts).	Reduction or fragmentation in ex-situ Greenland White-fronted Goose density.	distance separation between proposed Project and SPA and the absence of the species at the SPA since 1991 (NPWS, 2025).
			Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging).		Disturbance to ex-situ Greenland White-fronted Goose;	No. Effects on the ex-situ distribution through disturbance are not considered likely due to lack of extensive, suitable winter foraging habitats at the proposed Project site, the spatial distance separation between proposed Project and SPA and the absence of the species at the SPA since 1991 (NPWS, 2025).
			Operation (Noise, Vibration; Human presence; Movements of vehicles).		Ex-situ Greenland White-fronted Goose habitat fragmentation;	
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.	Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles;).	Air (potential flight-line avoidance).	Reduction or fragmentation in ex-situ Greenland White-fronted Goose density.	
			Operation (turbines as potential aerial obstacle); Construction/Decommissioning (crane/plant – temporary).		Localised re-routing/energy cost; functional habitat loss along a commuting corridor	No. Site lies within this SCI's range, therefore a plausible commute could intersect the turbine array. However: no project field records of this species over the site (including during 24 months of Vantage Point surveys), the spatial separation between proposed Project and SPA and the absence of the species at the SPA since 1991 (NPWS, 2025).
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging);	Air (Light and noise impacts).	Disturbance to ex-situ Greenland White-fronted Goose;	
			Operation (Noise, Vibration; Human presence; Movements of vehicles).		Ex-situ Greenland White-fronted Goose habitat fragmentation;	
			Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles;).		Reduction or fragmentation in ex-situ Greenland White-fronted Goose density.	
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging);	Air (Light and noise impacts).	Disturbance to ex-situ Greenland White-fronted Goose;	
			Operation (Noise, Vibration; Human presence; Movements of vehicles).		Ex-situ Greenland White-fronted Goose habitat fragmentation;	
			Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles;).		Reduction or fragmentation in ex-situ Greenland White-fronted Goose density.	
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging);	Air (Light and noise impacts).	Disturbance to ex-situ Greenland White-fronted Goose;	
			Operation (Noise, Vibration; Human presence; Movements of vehicles).		Ex-situ Greenland White-fronted Goose habitat fragmentation;	
			Decommissioning (Noise, Vibration; Human presence; Decommissioning works; Movements of vehicles;).		Reduction or fragmentation in ex-situ	

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
					Greenland White-fronted Goose density.	
Lough Ree SPA						
Receptor [Code]	Attribute	Target	Source	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
Common Scoter <i>Melanitta nigra</i> [A065]	Breeding population trend.	Long term trend is stable or increasing	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Productivity Rate.	Sufficient productivity to maintain the population trend as stable or increasing.	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Common Scoter has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Common Scoter is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Distribution of nesting habitat.	No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Extent and condition of nesting habitat.	Sufficient area of high quality habitat to support the population target				
	Disturbance at breeding site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and distribution				
	Barriers to connectivity and site use.	and hectares Barriers do not significantly impact the breeding population's access to the SPA or other ecologically important sites outside the SP				
	Forage spatial distribution, extent and abundance.	Sufficient area of high quality habitat to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Common Scoter has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Tern is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
Common Tern <i>Sterna hirundo</i> [A193]	Breeding population size.	Long term SPA population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No. There are tern colonies or regular use were recorded within the Site; pathway to Lough Ree is hydrological only via receiving waters.
	Productivity rate.	Sufficient to maintain a stable or increasing population.	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination) to downstream foraging waters	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Common Tern recorded at Kilglass Lough during field work. Kilglass Lough is ~2 river km from the wind farm Site boundary and is within the potential foraging range of Common Tern at Lough Ree. This SCI has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Tern is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Distribution: extent of available nesting options within the SPA.	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Location, hectares, and forage biomass.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site. Short-term increases in suspended solids or hydrocarbons could depress prey availability locally at Kilglass Lough, potentially altering ex-situ foraging distribution.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Common Tern is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Common Tern. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Disturbance at the breeding site.	Disturbance occurs at levels that do not significantly impact on birds at the breeding site.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Disturbance at areas ecologically connected to the colony.	Disturbance occurs at levels that do not significantly impact on breeding population.	Operation (turbines/maintenance); Construction/Decommissioning (cranes/plant, daytime only).	Air (visual/noise/airspace) — potential commuting between Lough Ree SPA and Kilglass Lough across the wind farm site.	Temporary avoidance / displacement from a preferred commute; small energetic cost due to re-routing.	No. Site lies between Lough Ree and Kilglass; therefore a plausible commute could intersect the turbine array. However: no project field records of Common Tern over the site; typical range usually within 20km of colony but most birds forage within 1–5km of shore or breeding site; typical Common Tern commuting follows waterbodies/shorelines (not upland forestry blocks), and Kilglass/Lough Ree shorelines lie outside the array footprint.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Adult survival / collision risk (operational turbines)	(not NPWS target)	Operation – moving turbine blades (airspace).	Air	Mortality	No. Not a likely significant effect due to no recorded Common Tern flights within the rotor-swept height over the array and the species' use being confined to hydrological corridors. Common Tern were recorded downstream at Kilglass/Grange Loughs but were absent from the wind farm site; hence disturbance/collision were not likely significant for this SCI.
	Barriers to connectivity.	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA.	Operation (turbines as potential aerial obstacle); Construction/Decommissioning (craneage/plant – temporary).	Air (potential flight-line avoidance).	Localised re-routing/energy cost; functional habitat loss along a commuting corridor	No. Geometry places the turbine array between two waterbodies used by SPA SCIs. However, given lack of site Common Tern flight records and the tendency for water-following commutes, no barrier effect is expected.
Coot <i>Fulica atra</i> [A125]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Coot has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Coot are dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
Goldeneye <i>Bucephala</i>	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
<i>clangula</i> [A067]	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.	Operation (turbines as potential aerial obstacle); Construction/Decommissioning (craneage/plant – temporary).	Air (potential flight-line avoidance).	Localised re-routing/energy cost; functional habitat loss along a commuting corridor	No. Although Goldeneye are known to commute up to 20–40km between roosting and foraging waterbodies, especially where suitable feeding habitat is dispersed, movements of less than 5km are more usual. Goldeneye populations are migratory, traveling long distances between breeding grounds (often boreal lakes and rivers) and wintering sites (coastal waters, estuaries, large inland lakes and rivers). With no recorded VP flights over the Site the likelihood of interaction is low.
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Goldeneye is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Goldeneye. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Adult survival / collision risk (operational turbines)	(not NPWS target)	Operation – moving turbine blades (airspace).	Air	Mortality	No. Not a likely significant effect due to no recorded Goldeneye flights within the rotor-swept height over the array. Goldeneye were recorded downstream at Kilglass/Grange Loughs but were absent from the wind farm site; hence disturbance/collision were not likely significant for this SCI.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
Golden Plover <i>Pluvialis apricaria</i> [A140]	Winter population trend.	Long term winter population trend is stable or increasing.				
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.	Operation (turbines as potential aerial obstacle); Construction/Decommissioning (crane/plant – temporary).	Air (potential flight-line avoidance).	Localised re-routing/energy cost; functional habitat loss along a commuting corridor	No. Golden Plover was observed during breeding-season VP work; a Golden Plover flightline is mapped (Figure “Breeding 2024 Golden Plover flightline”). Golden Plover is an Annex I / Red-listed species and an SCI of Lough Ree SPA; it was detected in VP watches (flightline mapped) but not within the site boundary. Their typical range is up to 3–4km from their nest during the breeding season, and the project is located approximately 11.8km from Lough Ree SPA, placing it outside the normal range for breeding foraging movements. However, Golden Plover may fly longer distances during migration and in the non-breeding season, potentially traversing the intervening landscape. That being considered, the records of Golden Plover as a result of fieldwork are from the migration period (April and September). This suggests those observed during field studies are <i>not</i> the wintering population associated with Lough Ree, but rather somewhere closer, such as Kilglass Lough. As a result, no likely adverse effects are anticipated for Golden Plover as an SCI of Lough Ree SPA. See the biodiversity chapter for wider considerations of the bird assemblage.
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Golden Plover has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Golden Plover are dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (such as flooded grasslands). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Adult survival / collision risk (operational turbines)	(not NPWS target)	Operation – moving turbine blades (airspace).	Air	Mortality	No. As per the above, the records of Golden Plover as a result of fieldwork are from the breeding season and suggest that those Golden plover observed during field studies are not a population associated with Lough Ree SPA, but rather somewhere closer, such as Kilglass Lough. Hence, no likely adverse effects are anticipated for Golden Plover as an SCI of Lough Ree SPA. See the biodiversity chapter for wider considerations of the bird assemblage.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Golden Plover has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Golden Plover are dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (such as flooded grasslands). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
Lapwing Vanellus vanellus [A142]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Lapwing has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Lapwing are dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (such as flooded grasslands). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Lapwing has the potential to be effected as a result of Construction works arising from earthworks (e.g. digging), use of contaminants (e.g. gravel, hydrocarbons, spoil) and accidental hydrocarbon spills sources. Lapwing are dependent upon foraging for food items in habitats

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
			Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).			hydrologically connected and downstream of the Project (such as flooded grasslands). Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
Mallard <i>Anas platyrhynchos</i> [A053]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.	Operation (turbines as potential aerial obstacle); Construction/Decommissioning (craneage/plant – temporary).	Air (potential flight-line avoidance).	Localised re-routing/energy cost; functional habitat loss along a commuting corridor	No. Mallard typically commute less than 2km between roosting and foraging areas. Although Mallard was recorded at the wind farm site, these birds are not likely to be associated with the wintering population of Lough Ree SPA due to the separation distance. As a result, no likely adverse effects are anticipated for Mallard as an SCI of Lough Ree SPA. See the biodiversity chapter for wider considerations of the bird assemblage.
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Mallard is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Mallard. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Adult survival / collision risk (operational turbines)	(not NPWS target)	Operation – moving turbine blades (airspace).	Air	Mortality	No. Not a likely significant effect due to very few flights within the rotor-swept height over the array. Mallard typically commute less than 2km between roosting and foraging areas. Although Mallard was recorded at the wind farm site, these birds are not likely to be associated with the wintering population of Lough Ree SPA due to the separation distance. hence disturbance/collision were not likely significant for this SCI.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Mallard is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Mallard. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Little Grebe is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Little Grebe. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
Shoveler <i>Spatula</i>	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
<i>clypeata</i> [A056]	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Shoveler is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Shoveler. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
Teal <i>Anas crecca</i> [A052]	Winter population trend.	Long term winter population trend is stable or increasing.				
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Teal is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Teal. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Teal is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Teal. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
Tufted Duck <i>Aythya fuligula</i> [A061]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's				

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
		access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Tufted Duck is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Tufted Duck. Therefore, contamination effects on Kilglass Lough potentially can impact this CD via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter population trend.	Long term winter population trend is stable or increasing.				
Whooper Swan <i>Cygnus cygnus</i> [A038]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.	Operation (turbines as potential aerial obstacle); Construction/Decommissioning (craneage/plant – temporary).	Air (potential flight-line avoidance).	Localised re-routing/energy cost; functional habitat loss along a commuting corridor	No. Although Whooper may fly longer distances between roosting and foraging sites, Best Practice Guidance (SNH, 2016) gives the connectivity distance between SPAs used for roosting and foraging, and locations in the wider countryside also used for foraging of 5km. Although there are records of Whooper Swan in hinterland of the Project, only a single flightline was recorded from VP surveys, a group of four flying c.1km south of the wind farm Site. This indicates that Whooper Swan moving between surrounding wetlands, such as Lough Ree SPA, Kilglass Lough or Grange Lough, do not fly through the wind farm site, hence barrier effects are not likely significant for this SCI.

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Whooper Swan is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Whooper Swan. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Adult survival / collision risk (operational turbines)	(not NPWS target)	Operation – moving turbine blades (airspace).	Air	Mortality	No. Not a likely significant effect due the absence of any flights within the rotor array. Whooper Swan typically commute up to 5km between roosting and foraging areas. Although Whooper Swan was recorded c.1km south of the wind farm site, these birds are not likely to be traversing the wind farm site and are very low risk from collision mortality, hence disturbance/collision were not likely significant for this SCI.
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Whooper Swan is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Whooper Swan. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
Wigeon Mareca penelope [A050]	Winter population trend.	Long term winter population trend is stable or increasing.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Winter spatial distribution.	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.				
	Disturbance at wintering site.	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution				

Receptor [Code]	Attribute	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Barriers to connectivity and site use.	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.				
	Forage spatial distribution, extent and abundance.	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Whooper Swan is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Whooper Swan. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
	Roost spatial distribution and extent.	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Supporting habitat: area and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	Yes. Project site is hydrologically connected to Kilglass Lough, less than 2km upstream. Whooper Swan is dependent upon foraging for food items in habitats hydrologically connected and downstream of the Project (Kilglass Lough and ultimately Lough Ree), and Kilglass Lough is within the foraging range of Whooper Swan. Therefore, contamination effects on Kilglass Lough potentially can impact this CO via a reduction in available forage biomass to support the species. Effects on SPA attributes rely on a contamination magnitude that is unlikely given controls, dilution/attenuation and distance. However, those controls have not yet been considered.
Wetlands and waterbirds [A999]	Wetland habitat area.	No significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation.	No sources are tied to this attribute.	No pathways are tied to this attribute.	Not applicable.	No likely Adverse effects.
	Wetland habitat quality and functioning.	No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills). Decommissioning (Use of contaminants (e.g., hydrocarbons); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination).	Interference with the key relationships that define the structure or ecological function of the site.	No. Effects on the ex-situ habitat relies on an extent of contamination magnitude unlikely to occur as a result of the Project even in a worst-case scenario.

7.4.1. Summary of Assessment of Adverse Effects

7.4.1.1. Assessment of Adverse effects related to Construction Phase sources

- Lough Ree SAC (Otter) – As identified in Table 15, on a precautionary basis, there will be potential for indirect effects on the identified QI – Otter. Therefore, in the absence of mitigation there exists the potential for adverse effects to the integrity of the Lough Ree SAC, via contamination (run-off / hydrocarbons depressing fish biomass/water quality) and disturbance (noise, vibration, human presence). **Mitigation measures are therefore required** to ensure no adverse impacts occur as a result of the Project and these are set out in Section 9 of this document,
- The remaining QIs of the Lough Ree SAC are not considered likely to experience significant or adverse effects during operation.
- Lough Ree SPA (ex-situ SCIs) – As identified in Table 15, on a precautionary basis, there will be potential for indirect effects on the identified SCIs. Therefore, in the absence of mitigation there exists the potential for adverse effects via contamination pathways to downstream/connected foraging waters (particularly Common Tern, Goldeneye, Mallard, Whooper Swan; also “supporting habitat” for SCIs where relevant). **Mitigation measures are therefore required** to ensure no adverse impacts occur as a result of the Project and these are set out in Section 9 of this document,
- Ballykenny-Fisherstown SPA (ex-situ SCI – Greenland White-fronted Goose) – No potential for adverse effects from construction-phase disturbance (no local usage/flightlines; distance and habitat context). **Mitigation not required.**

7.4.1.2. Assessment of Adverse effects related to Operational Phase Sources

- Lough Ree SAC (Otter) – As identified in Table 15, on a precautionary basis, there will be potential for indirect effects on the identified QI – Otter. Therefore, in the absence of mitigation there exists the potential for adverse effects to the integrity of the Lough Ree SAC, via contamination (hydrocarbons) and disturbance (operational noise/traffic), with potential connectivity barriers in the river network. **Mitigation is therefore required** to ensure no adverse impacts occur as a result of the Project and these are set out in Section 9 of this document,
- The remaining QIs of the Lough Ree SAC are not considered likely to experience significant or adverse effects during operation phase.
- Lough Ree SPA (ex-situ SCIs) – As identified in Table 15, on a precautionary basis, there will be potential for indirect effects on the identified SCIs. Therefore, in the absence of mitigation there exists the potential for adverse effects via contamination pathways to downstream/connected foraging waters (particularly Common Tern, Goldeneye, Mallard, Whooper Swan; also “supporting habitat” for SCIs where relevant). **Mitigation measures are therefore required** to ensure no adverse impacts occur as a result of the Project and these are set out in Section 9 of this document,

- Ballykenny-Fisherstown SPA (ex-situ SCI – Greenland White-fronted Goose) – No potential for adverse effects are likely during operation phase (no local usage / flightlines; distance and habitat context). **Mitigation not required.**

7.4.1.3. Assessment of Adverse effects related to Decommissioning Phase sources

Consistent with construction-type activities.

- Lough Ree SAC (Otter) – As identified in Table 15, on a precautionary basis, there will be potential for indirect effects on the identified QI - Otter. Therefore, in the absence of mitigation there exists the potential for adverse effects via contamination and disturbance.,. **Mitigation is therefore required** to ensure no adverse impacts occur as a result of the Project and these are set out in Section 9 of this document, The remaining QIs of the Lough Ree SAC are not considered likely to experience significant or adverse effects during decommissioning.
- Lough Ree SPA (ex-situ SCIs) – As identified in Table 15, on a precautionary basis, there will be potential for indirect effects on the identified SCIs. Therefore, in the absence of mitigation there exists the potential for adverse effects via contamination pathways to connected foraging waters and habitats affecting Common Scoter, Common Tern, Coot, Goldeneye, Golden Plover, Lapwing, Little Grebe, Mallard, Shoveler, Teal, Tufted Duck, Whooper Swan and Wigeon (and relevant SCIs under “supporting habitat”). **Mitigation is required.**
- Ballykenny-Fisherstown SPA (ex-situ SCI – Greenland White-fronted Goose) – No potential adverse effects are likely during decommissioning phase. **Mitigation not required.**

8. IN-COMBINATION EFFECTS

Legislation, guidance, and case law (see **Section 1.1** and **Section 3.1**) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the Project in Stage 1 of the AA (see **Table 11**)

Six projects and no plans were identified to have potential for likely significant in-combination effects with the Project.

8.1. Projects

Two projects (the Lanesboro- Sliabh Bawn 100kV overhead line upgrade and the N5 Ballaghaderreen to Scramoge Realignment Scheme) have possible in-combination effects in the forms of disturbance to Otter ex-situ of the Lough Ree SAC through in-combination interactions adjacent to the proposed Grid Connection Route for the wind farm Site where these projects have crossing points with the Gortlustia Stream and Scramoge River during the construction phases of these projects.

Three wind farms were included in this assessment: Sliabh Bawn Wind Farm, Derryadd Wind Farm and Derrane Wind Farm. As such, they have the potential for disturbance, displacement and mortality related in-combination effects from the operational phase of these projects with the operational phase of the proposed Project.

Ballyfeeney Rock Quarry was included due to the long-term operational sources which has the potential for in-combination effects with the Project in the form of contamination, displacement and disturbance on ex-situ Otter, and ex-situ SCIs of the Lough Ree SPA and the Ballykenny-Fisherstown Bog SPA.

8.1.1. Contamination

Several of the identified projects, including the Sliabh Bawn Wind Farm and Derrane Wind Farm are not hydrologically connected to the proposed Project. Derryadd Wind Farm and the Cloon to Lanesborough 110kV Overhead line are located downstream of the proposed Project. However, both are located within separate river sub-basins to the proposed Project. All projects have been considered here for in-combination contamination effects, but those projects within separate sub-basins have not been considered here; only those within the same hydrological sub-basin as the proposed Project are discussed.

8.1.1.1. Ballyfeeney Rock Quarry

The closest active sand and gravel quarrying operation to the Project, is Ballyfeeney Rock Quarry. The nearest receiving surface water body to both the Project and the Ballyfeeney Quarry is the Ballymartin Stream (EPA Code 26B82). The Ballymartin Stream is a first order stream which rises directly adjacent to the western boundary of the wind farm Site, approximately 60m from the proposed Onsite Substation and Communications Relay Tower (see Chapter 8, Figure 8-6 Local surface water features surrounding the proposed Project).

There is potential for in-combination effects to water quality from both the Project and the Ballyfeeny Rock Quarry.

The Environmental Impact Statement (EIS) for the Ballyfeeny Rock Quarry reported no significant adverse residual effects and noted that the quarry operates under planning conditions that include environmental management controls. This combined with the retained WFD status of “Good” over successive River Basin Management Plan cycles demonstrates continued compliance with discharge limits to the receiving Ballymartin stream.

While both projects individually conclude no likely significant effects (see Chapter 8 Water, Section 8.12), the combination of multiple non-significant effects has the potential to result in significant cumulative impacts. Taking into account the environmental controls in place at the quarry, any cumulative effects are expected to be limited in scale and duration and are not anticipated to result in significant adverse impacts on the receiving surface water quality.

However, in the absence of mitigation, applying the precautionary approach potential effects albeit slight, from the proposed Project have the potential for in-combination effects with the operational quarry on the receiving Ballymartin Stream. Therefore mitigation measures are required.

8.1.1.2. Lanesboro - Sliabh Bawn 110kV Overhead Line

The Lanesboro – Sliabh Bawn 100kV overhead line is located approx. c.4.23km south of the wind farm Site, with the GCR extending to connect to the Sliabh Bawn Substation.

The Planning and Environmental Considerations Report for the Lanesboro – Sliabh Bawn 100kV overhead line states within Section 9 – Water (table 9-2) that “works are proposed within 50m of surface waters on the unnamed tributary of the Bellmount Stream (IE_SH_26FO30400)”.

Furthermore, the Planning and Environmental Considerations Report for the Lanesboro – Sliabh Bawn 100kV overhead line concludes as follows:

“Taking account of the proposed mitigation measures outlined in Section 9.4 and detailed within the supporting CEMP (Atkins, 2023) the proposed development will not have a significant adverse effect on hydrology or hydrogeology or human health within the receiving environment. The proposed development will not cause a deterioration of the status of any surface or groundwater under the WFD and will not undermine the attainment by any such body of good status”

Therefore any likely impacts to water quality in the receiving Bellmount (or Cloggernagh) Stream as a result of the 110kV overhead line have been appropriately mitigated.

Taking a precautionary approach, there is potential for adverse cumulative effects during the construction phase of the Project for ex-situ QIs/SCIs (e.g. Otter for Lough Ree SAC; waterbirds for Lough Ree SPA), when combined with the proposed Project, in the absence of mitigation measures.

8.1.1.3. N5 Ballaghaderreen to Scramoge Realignment Scheme

The N5 Ballaghaderreen to Scramoge Realignment Scheme, scheduled for completion by late 2027, intersects with the GCR and shares hydrological links with the proposed Project. Given the scale and nature of both developments, there is potential for cumulative impacts on local water bodies, particularly the Gortlustia Stream and Scramoge River, in the absence of mitigation measures.

However, the N5 Scheme has been subject to comprehensive environmental assessment through a full EIAR. With the environmental controls already in place for the N5 Scheme, and the mitigation measures proposed for the current Project (Section 9), any combined effects are expected to be limited in scale and duration and are not anticipated to result in significant adverse impacts on the receiving watercourses. Therefore no potential exists for adverse effects during the construction phase on ex-situ QIs/SCIs (e.g. Otter for Lough Ree SAC; waterbirds for Lough Ree SPA) .

Combined with implementation of the mitigation measures for the proposed Project, **no significant cumulative effects** are anticipated.

8.1.1.4. Contamination In-combination Assessment

Mitigation measures provided to prevent and avoid surface-run-off sources impacting receiving watercourses connected to the Project (i.e., the Culliagh Stream, Bellmount/Cloggernagh Stream, Ballymartin Stream and Gortlustia Stream) (see **Section 9**) will prevent any such interactions identified with the above projects to occur. **As such, no cumulative impacts as a result of the Project in-combination with other projects identified within the relevant ZOI will occur.**

8.1.2. Mortality

8.1.2.1. Derryadd Wind Farm

Derryadd Wind Farm (ACP Ref: PA322485), a proposed 22 turbine wind farm was submitted to ACP in July 2025.

Collision risk modelling for Derryadd windfarm projected negligible collision risk effects over its lifespan for the SCI species of Lough Ree SPA that were assessed (e.g., Golden Plover).

For the proposed Project, Golden Plover was the only SCI species for Lough Ree SPA assessed for collision risk⁷ (all other SCI species were absent or too scarce to generate any likely significant effects). The CRM estimated collision once every 32.24 - 40.11 years (depending upon the Technology Option).

The in-combination effects pose a below negligible magnitude effect on the Lough Ree SPA population for the SCI species of Lough Ree SPA. Additionally, the separation distance between the Derryadd wind farm and the Project (**13km**) and the negligible level magnitude of the collision rate on species arising from the Collision Risk Model (see **Appendix 6.9**) would not result in a likely adverse effect on any of the SCI species.

No potential additive impacts have been identified which would result in the potential for significant cumulative effects with the proposed Project. Therefore adverse in-combination effects on the SCIs of the Lough Ree SPA are not anticipated.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

⁷ The records of Golden Plover recorded during the survey period 2022 – 2024 are from the breeding migration period only and were only recorded once in April 2024. This suggests those observed during field studies are not the wintering population associated with Lough Ree SPA (and listed as SCIs) but rather potentially the population associated with somewhere closer such as Kilglass Lough.

8.1.2.2. Sliabh Bawn Wind Farm

Sliabh Wind Farm wind farm is located 3km south of the proposed Project. Sliabh Bawn Wind Farm is operational since 2017. The EIS and planning compliance documents for this project state the following:

“ Wintering Birds: No specific monitoring proposal required. There was no predicted impact on wintering birds and the habitats present on the Site are not likely to support species such as Whooper Swan, Golden Plover, Lapwing and geese. Breeding Birds: No significant residual impacts and effects are anticipated and therefore no specific monitoring is proposed”.

For the proposed Project, Golden Plover was the only SCI species for Lough Ree SPA assessed for collision risk (all other SCI species were absent or too scarce to generate any likely significant effects). The CRM estimated collision once every 32.24 - 40.11 years (depending upon the Technology Option).

The in-combination effects of these two projects pose a below negligible magnitude effect for the SCI species of Lough Ree SPA. The negligible level magnitude of the collision rate on species arising from the Collision Risk Model (see **Appendix 6.9**) would not result in a likely adverse effect on any of the SCI species.

Therefore adverse in-combination effects on the SCIs of the Lough Ree SPA are not anticipated.

No additional in-combination effects are likely, therefore no mitigation measures are required.

8.1.2.1. Lanesboro - Sliabh Bawn 110kV Overhead Line

The Lanesboro – Sliabh Bawn 100kV overhead line development (Pl. Ref: 23342) concluding statement within the NIS states as follows:

“Following a comprehensive evaluation of the potential direct, indirect and in-combination effects on the qualifying interest of the aforementioned SAC and SPA and the implementation of the prescribed mitigation measures, it has been concluded that there will be no adverse effects from the proposed project on the integrity of Lough Ree SAC and Lough Ree SPA or any other European site alone or in-combination with other plans or projects.”

Mortality due to SCI's of the Lough Ree SPA interacting with power lines is not likely due to the SCIs being mainly wetland birds which are not known for regular electrocution events from power lines.

The in-combination effects of these two projects pose a below negligible magnitude effect for the SCI species of Lough Ree SPA. The negligible level magnitude of the collision rate on species arising from the Collision Risk Model (see **Appendix 6.9**) would not result in a likely adverse effect on any of the SCI species. Furthermore, there is no spatial overlap between the two projects therefore no opportunity for mortality related in-combination effect arises.

Therefore adverse in-combination effects on the SCIs of the Lough Ree SPA are not anticipated.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.2.1. Derrane Wind Farm

Due to Operational Turbines sources, Derrane Wind Farm has potential to impact the SCIs of both SPAs screened into this project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA). However, the separation distance between Derrane wind farm and the proposed Project (16km) and the negligible

level magnitude of the collision rate on the SCIs scoped in **Section 7.4** any increase would not result in a likely adverse effect on any other SCI species. Furthermore, as both developments have undergone environmental assessment, any potential impacts to biodiversity as a result of the wind farm will have appropriate mitigation measures in place, as does the proposed Project.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.3. Disturbance

8.1.3.1. Ballyfeeny Rock Quarry

The Ballyfeeny Rock Quarry has potential for in-combination effects related to disturbance of SCI & QI species as a result of works required for the proposed Project construction phase. The proposed Project construction works and sources identified for adverse effects Table 15 have the potential to interact with Ballyfeeny Rock Quarry via this pathway.

Due to the likelihood of this adverse in-combination effect mitigation measures are required.

8.1.3.2. Derryadd Wind Farm

Derryadd Wind Farm (ACP Ref: PA322485), a proposed 22 turbine wind farm was submitted to An Coimisiún Pleanála in July 2025. The proposed Project construction works and sources identified for adverse effects in Table 15 have the potential to interact with the Derryadd Wind Farm for this disturbance pathway.

However, the separation distance between the Derryadd Wind Farm and the Project (13km) and the negligible level magnitude of the collision rate on the SCIs scoped in **Section 7.4** would not result in a likely adverse effect on any SCI species. Furthermore, as both developments have undergone full environmental assessment in the form of an EIAR, any potential impacts to biodiversity as a result of the wind farm will have appropriate mitigation measures in place, as does the proposed Project (see Section 9).

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.3.3. Sliabh Bawn Wind Farm

Sliabh Bawn Wind Farm has potential to impact the SCIs of both SPAs screened into this project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA). Sliabh Wind Farm wind farm is located 3km south of the proposed Project and is operational since 2017.

The EIS and planning compliance documents for this project state the following:

“ Wintering Birds: No specific monitoring proposal required. There was no predicted impact on wintering birds and the habitats present on the Site are not likely to support species such as Whooper Swan, Golden Plover, Lapwing and geese. Breeding Birds: No significant residual impacts and effects are anticipated and therefore no specific monitoring is proposed”.

As per Table 15 above. no likely adverse disturbance effects were identified for the SCIs of the Lough Ree SPA as a result of the proposed Project.

Furthermore, as both developments have undergone full environmental assessment in the form of an EIAR, any potential impacts to biodiversity as a result of the Sliabh Bawn wind farm, has appropriate mitigation measures in place, as will the proposed Project.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.3.4. Lanesboro - Sliabh Bawn 110kV Overhead Line

The Lanesboro – Sliabh Bawn 100kV overhead line development (PI. Ref: 23342) concluding statement within the NIS states as follows:

“Following a comprehensive evaluation of the potential direct, indirect and in-combination effects on the qualifying interest of the aforementioned SAC and SPA and the implementation of the prescribed mitigation measures, it has been concluded that there will be no adverse effects from the proposed project on the integrity of Lough Ree SAC and Lough Ree SPA or any other European site alone or in-combination with other plans or projects.”

Due to active construction works, noise and human activity sources, the Sliabh Bawn Overhead Line has potential to impact the SCIs of both SPAs screened into this project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA). The OHL project has the potential to disturb these SCIs commuting between the Kilglass Lough and the Lough Ree SPA.

However, any such disturbance would be short-term in nature as once erected, overhead lines pose limited risk to water and wetland bird species. Furthermore, there is no spatial overlap between the two projects therefore no opportunity for disturbance related in-combination effect arises. There is therefore no likely interactions with the proposed Project that would increase the determination of adverse effect in **Section 7.4**.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.3.5. N5 Ballaghaderreen to Scramoge Realignment Scheme

Due to active construction works, noise and human activity sources, the N5 Ballaghaderreen to Scramoge Realignment Scheme has potential to impact the SCIs of both SPAs screened into this project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA). This site has the potential to disturb these SCIs commuting between the Kilglass Lough and the Lough Ree SPA. However, any such disturbance would be short-term in nature as once completed, roads pose limited risk to water and wetland bird species. As this project creates no barrier between the Kilglass lough and the SPA this project has no likely interactions with the Project that would increase the determination of adverse effect in **Section 7.4**.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.3.6. Derrane Wind Farm

Due to Operational Turbines sources, Derrane Wind Farm has potential to impact the SCIs of both SPAs screened into this project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA).

The Project construction works and sources identified for adverse effects in Table 15 have the potential to interact with this project via this pathway. However, the separation distance between

Derrane wind farm and the proposed Project (16km) and the negligible level magnitude of the collision rate on the SCIs scoped in **Section 7.4** any increase would not result in a likely adverse effect on any other SCI species. Furthermore, as both developments have undergone full environmental assessment, any potential impacts to biodiversity as a result of the wind farm will have appropriate mitigation measures in place, as does the proposed Project.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.3.7. Disturbance In-combination Assessment

Three wind farm projects (Derryadd, Sliabh Bawn and Derrane) within the 20km ZOI have the potential to contribute adverse disturbance effects cumulatively.

However, given these projects will not obstruct SCI species commuting between the Kilgass Lough and Lough Ree SPA, any disturbance will not have a magnitude beyond negligible and minor changes to flightpaths (for detailed flightpaths, see **EIAR Appendix 6.5: Ornithology**). In considering this, even in a worst-case scenario of disturbance by all wind farm projects, no adverse effect would likely result from the in-combination interactions. As such, no additional mitigation measures are required.

As such, no cumulative impacts as a result of the Project in-combination with other projects identified within the relevant ZOI will occur.

8.1.4. Displacement

8.1.4.1. Derryadd Wind Farm

Displacement of SCIs of both SPAs screened in for the Project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA) due to Operational Turbines, and this has potential for in-combination effects related to SCI & QI displacement as a result of works related to Derryadd Wind Farm construction, operation and decommissioning phases. Derryadd Wind Farm will involve human presence and machinery noise and has the potential to interact in-combination with the proposed Project to effect Ex-situ SCIs.

The Project construction works and sources identified for adverse effects in Table 15 have the potential to interact with this project for this displacement pathway. However, the separation distance between Derryadd wind farm and the proposed Project (**16km**) and the negligible level magnitude of disturbance on the SCIs scoped in **Section 7.4** would not result in a likely adverse effect on any SCI species.

Furthermore, as both developments have undergone full environmental assessment in the form of an EIAR, any potential impacts to biodiversity as a result of the wind farm will have appropriate mitigation measures in place, as does the proposed Project.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.4.2. Sliabh Bawn Wind Farm

Sliabh Bawn Wind Farm is operational since 2017. The EIS and planning compliance documents for this project state the following:

“ Wintering Birds: No specific monitoring proposal required. There was no predicted impact on wintering birds and the habitats present on the Site are not likely to support species such as Whooper Swan, Golden Plover, Lapwing and geese. Breeding Birds: No significant residual impacts and effects are anticipated and therefore no specific monitoring is proposed”.

Sliabh Bawn wind farm has potential for in-combination effects related to SCI & QI displacement as a result of works related to the operational and decommissioning phases. The proposed Project will involve human presence and machinery noise and has the potential to interact in-combination with the operational Sliabh Bawn wind farm to effect Ex-situ SCIs. However, no likely adverse displacement effects were identified on the SCIs of the Lough Ree SPA as a result of the proposed Project.

Furthermore, as both developments have undergone full environmental assessment in the form of an EIAR, any potential impacts to biodiversity as a result of the Sliabh Bawn wind farm, has appropriate mitigation measures in place, as will the proposed Project.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.4.3. Lanesboro - Sliabh Bawn 110kV Overhead Line

Displacement of QIs/ SCIs as a result of in-combination effects is likely due to the potential construction work effects on mobile QIs/SCIs (e.g. Otter, Greenland White-fronted Goose) as a result of works related to this Projects construction, phase. The Sliabh Bawn 110kV Overhead Line will involve human presence and machinery noise therefore has the potential to interact in-combination with the proposed Project to effect Ex-situ SCIs.

The proposed Project construction works and sources identified for adverse effects in Table 15 have the potential to interact via this displacement pathway. However, any such displacement would be short-term in nature as once erected, overhead lines pose limited risk to water and wetland bird species. The OHL project has no likely interactions with the proposed Project that would increase the determination of adverse effect in **Section 7.4**.

No additional in-combination effects are likely, therefore no additional mitigation measures are required

8.1.4.4. Derrane Wind Farm

Due to Operational Turbines sources, Derrane Wind Farm has potential to impact the SCIs of both SPAs screened into this project (Lough Ree SPA & Ballykenny-Fisherstown Bog SPA).

The Project construction works and sources identified for adverse effects in Table 15 have the potential to interact with this project via this pathway. However, the separation distance between Derrane wind farm and the proposed Project (16km) and the negligible level magnitude of the collision rate on the SCIs scoped in **Section 7.4** any increase would not result in a likely adverse effect on any other SCI species. Furthermore, as both developments have undergone full environmental assessment, any potential impacts to biodiversity as a result of the wind farm will have appropriate mitigation measures in place, as does the proposed Project.

No additional in-combination effects are likely, therefore no additional mitigation measures are required.

8.1.4.5. Displacement In-combination Assessment

Three wind farm projects (Derryadd, Sliabh Bawn and Derrane) within the 20km ZOI were assessed for possible in-combination effects.

The separation distance between the proposed Project and that of the Derryadd wind farm (13km) and the Derrane wind farm (16km) would not result in a likely adverse displacement effect on any of the SCI species.

In considering this, even in a worst-case scenario of displacement by all three wind farm projects, no adverse effect would likely result from the in-combination interactions. **As such, no additional mitigation measures are required to prevent or avoid an adverse effect.**

9. MITIGATION

The objective of mitigation measures is to avoid, minimise and control contaminated run off entering land drains and local watercourses and to the three European sites that are hydrologically linked to the proposed Project.

Discussion on water quality and the required mitigation measures are detailed in **EIAR Chapter 07 Land, Soils and Geology** and **EIAR Chapter 8 Water, Hydrology and Hydrogeology** for the Construction, Operation and Decommissioning phases of the proposed Project. The mitigation measures outlined follow best practice techniques, are site specific and are proven to work. When implemented the proposed mitigation measures will be monitored to ensure their effectiveness.

Mitigation requirements:

- Otter (Lough Ree SAC, ex-situ) – disturbance/barriers; prey reduction via water quality.
- Waterbirds (Lough Ree SPA, ex-situ) – Common Tern, Goldeneye (water-quality to foraging waters);

All other screened receptors: no mitigation required beyond standard good practice.

9.1. Construction Phase

Best practice construction measures will be adopted to avoid worst-case potential construction and decommissioning impacts on KERs. Construction phase mitigation measures are detailed within **EIAR, Appendix 2-1 CEMP** and include measures to minimise working areas to avoid unnecessary habitat removal/alteration and disturbance, and measures to avoid/minimise the generation of additional noise, dust, light spill and vibration. The CEMP includes a Surface Water Management Plan (**EIAR Appendix 2.1.1**)

All construction works will fully comply with Best Practice/Industry Standards such as the Construction Industry Research and Information Association (CIRIA) and UK Pollution Prevention Guidelines, in respect of the protection of Water Quality, the reduction of emissions and the prevention of noise. As such, all works will comply with CIRIA standards as follows:

- CIRIA Report C502 Environmental Good Practice on Site;
- CIRIA Report C532 Control of Water Pollution from Construction Sites;
- CIRIA Report C648 Control of Pollution from Linear Construction Project; Technical Guidance;
- CIRIA Handbook C650 Environmental good practice onsite;
- CIRIA Handbook C651 Environmental good practice onsite checklist;
- CIRIA Report C609 – SuDS – hydraulic, structural & water quality advice; and
- CIRIA Report C697 – The SuDS Manual.

Pollution Prevention Guidance Notes (PPGs):

- PPG01 General guide to the prevention of water pollution;
- PPG02 Above ground oil storage tanks;
- PPG05 Works in near or liable to affect watercourses;

- PPG06 Working at construction and demolition sites;
- PPG07 Refuelling Facilities;
- PPG11 Preventing pollution at industrial sites;
- PPG18 Control of spillages and firefighting run-off;
- PPG20 Dewatering underground ducts and chambers;
- PPG21 Pollution Incident Response Planning;
- PPG23 Maintenance of Structures over Water; and
- PPG26 Pollution Prevention Storage and Handling of Drums & Intermediate Bulk Containers.

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9.1.1. General Management

- An Ecological Clerk of Works (EcoCoW) will be employed by the appointed contractor to oversee construction works and monitor and prevent the occurrence of any source of likely significant effects identified in **Section 7.4**. Particular attention will be devoted to prevention of unregulated waste disposal and contaminant spillages onsite, monitoring of excavations, abutment foundations etc. The duties and responsibilities of the EcoCoW will include:
 - Monitor the implementation of the CEMP, carry out site inspections and audits to ensure the works are carried out in compliance with the CEMP;
 - Keep site records to demonstrate compliance with the CEMP, the Planning Permission and other statutory requirements;
 - Attend design team meetings, site meetings and other stakeholder meetings as required to ensure environmental compliance;
 - Advise site management and contractors on items such as:
 - Prevention of environmental pollution;
 - Lights are to be used with the following guidance from Dark Sky Ireland during the every light needs to be justifiable, limit the use of light to when it is needed, direct the light to where it is needed, reduce the light intensity to the minimum needed, use light spectra adapted to the environment, when using white light, use sources with a “warm” colour temperature (less than 3000K);
 - Implementation of planning conditions linked to environmental and ecological sensitives and implementation of statutory requirements linked to environmental controls;
 - Suitability and use of plant, equipment and materials to prevent pollution; and
 - Environmentally sound methods and systems of working to prevent environmental hazards.
 - Ensure agreed mitigation measures are initiated, implemented and maintained throughout the construction phase and where required during the operational phase;
 - Liaise with Project Archaeologist, Hydrologist and Geotechnical Engineer and ensure their regular site visits and audits / inspections are completed;

- Ensure adequate emergency response procedures are put in place for potential environmental hazards;
 - Ensure that details of environmental incidents are communicated in a timely manner to the relevant regulatory authorities;
 - Investigate incidents of significance and ensure corrective actions are carried out;
 - Identify environmental training requirements and arrange relevant training for all levels of site-based personnel.; and
 - Put communication protocols in place to ensure that all personnel on site are made aware that they are responsible for ensuring good construction and environmental practice and that they are encouraged to provide feedback and suggestions for improvements.
- All site contractors will be briefed regarding the biodiversity value of the surrounding landscape, including adjacent habitats and its sensitivities, the designated species (QIs and SCIs), and designated habitats that can potentially occur in proximity of the Project. The briefing should also raise awareness to biosecurity and environmentally damaging actions conducted during the project construction that could, including the sources identified in **Section 7.4**, and that such matters often arise accidentally through lack of awareness, rather than as a result of an intentional action; and
 - The appointed contractor will ensure that all personnel working onsite are trained in pollution incident control response. A regular review of weather forecasts of heavy rainfall is required, and the Contractor will be required to prepare a contingency plan for before and after such events.

9.1.2. Mitigation for Disturbance

Mitigation is required to avoid adverse effects on a QI (Otter) of Lough Ree SAC arising from visual and noise disturbance.

A pre-construction survey will be undertaken for Otter on watercourses within 250m of any works associated with the Project to identify holts or shelters. Exclusion zones will be marked where works cannot take place around any active holts and shelters of 200m, unless alternative screening is available (NatureScot, 2024). This will require judgement from an experienced ecologist. For holts and shelters where otters are not breeding, the exclusion zone should be 30m. Where exclusion zones of the required size are not possible, works will require a license from NPWS before they can proceed.

Construction traffic within the wind farm Site will follow the measures described with the Traffic Management Plan (**EIAR Appendix 2.1.4**). This includes a speed restriction on internal access tracks of 25kmh.

9.1.3. Mitigation for Contamination

Mitigation to avoid adverse effects on a QI (Otter) of Lough Ree SAC and SCIs of Lough Ree SPA have been identified as a requirement. Appropriate mitigation measures are described below.

9.1.3.1. Site-Specific Surface Water Management

The Site Access Tracks will be built by excavating to a stable layer and filling with selected materials. Since these tracks often create a flow path for surface water and are usually lower than adjacent existing ground levels, specific drainage designs will be used (refer to **Planning Drawings 23604-400-P1 to 236604-404) – Part 1**. These designs include:

- A 50m buffer, with the exception of water crossings and some other minor works, was applied to watercourses shown on the 1:50,000 OSI maps at the design phase in accordance with the Irish Wind Energy Industry Best Practice Guidelines (IWEA, 2012).
- A buffer of at least 10m will be maintained from minor watercourses and land drains. Therefore, habitat around watercourses will be maintained and there will be minimal reduction of shading on the watercourse.
- An upslope cut-off drain will be installed before the main earthworks to reduce overland runoff onto the track and working strip, except on gently sloping land or where there is limited upslope catchment;
- Track edge drainage swales will be placed on one or both sides of the track hardstanding, with permanent downslope edge drainage omitted where water can shed onto undisturbed vegetated ground;
- All new Access Tracks will be constructed with a fall to aid drainage of surface water; Access Tracks will be graded to ensure that all runoff is channeled towards the dirty water drains;
- Temporary drainage swales and settlement/filtration features will be added downslope if higher silt loading is observed or additional water control near watercourses is needed;
- Drainage swales and track shoulders will be topsoiled and re-vegetated promptly to establish vegetation;
- Outlets from track edge drainage will flow through temporary mini-settlement ponds and/or silt fences to remove silt during construction;
- Under-track culverts will be installed to allow clean surface runoff to the downgradient side, with culverts/pipes regularly dispersing clean runoff onto natural vegetated surfaces;
- In-line erosion and velocity control measures, such as check dams, silt fences, and other control measures, will be implemented;
- Temporary settlement ponds will be placed on the downgradient side of the excavated track section to collect dirty excavation runoff and keep it separate from clean surface water runoff; and
- Temporary sumps, settlement ponds, sediment traps, and proprietary settlement systems like Siltbusters will be used to treat dirty construction water runoff before its controlled release onto natural vegetation surfaces.

Any existing site drains over which new Site Access Tracks are to be constructed will be culverted or piped, ensuring a cross-sectional area that does not impede water flow, with a minimum diameter of 225mm for cleaning and maintenance. Additionally, the drainage design for both new and upgraded access tracks will incorporate a cambered surface with a 2% cross fall, directing runoff into a 1.5-

meter-wide drain to effectively manage surface water. Existing drainage paths will not be unnecessarily re-routed or altered to minimise impacts on local hydrology. Works adjacent to watercourses will be avoided during heavy rain to reduce pollution risks. Regular inspections of the surface water management systems and public road cleaning near drains will be undertaken by the Appointed Contractor. To ensure crane stability, the maximum crossfall on the crane hardstands will not exceed 1/100. The Appointed Contractor will provide perimeter drainage channels to collect surface runoff and direct it to a suitably sized settlement pond before discharging to existing vegetated ground.

Tree felling operations will be conducted during suitable weather conditions and whenever possible, operations will be halted if rainfall occurs, to minimise the risk of sediment mobilisation and runoff. Tree felling operations will be planned to minimise surface water flow rates and volumes during heavy rains, preventing sediment and silt from entering watercourses. Silt traps will be installed along felling routes as needed, to capture sediment or tree material and prevent it from entering watercourses.

As per the **EIAR Appendix 2.1.1 SWMP**, surface water drainage measures to be implemented include:

- Clean Water Cut-off Drains will be installed upgradient of works areas to collect surface runoff and prevent it from reaching excavations and construction areas of the Site, where it could pick up silt and sediment. These drains will divert upslope runoff around the work area, redistributing it as sheet flow to minimise the volume of potentially silty runoff within the construction area.
- Dirty Water Cut-off Drains will be installed downgradient of works areas to collect surface flow runoff and to prevent it from entering existing watercourses. These drains will direct runoff from the work area to locations where it can be treated via settlement ponds or other sediment removal measures.
- Buffered Outfalls will be constructed at the end of Cut-off Drains, Silt Ponds and other control measures to convert concentrated flows into diffused sheet flow on areas of vegetated ground. Buffered Outfalls will be located downgradient of any proposed works areas in locations where they are not likely to contribute further to water ingress to construction areas of the Site.
- Level Spreaders will be used at permanent surface water drainage outfall points to convert concentrated flows into diffuse sheet flow over vegetated ground. This will ensure clean drainage water is distributed without re-concentrating into flow channels immediately below the discharge point.

Excavations will be designed to minimise the volume of retained water requiring disposal. The following drainage management measures will apply:

- Cut-off drains will be installed around working areas to intercept uncontaminated surface runoff and divert it away from construction or excavation sites. Surface water runoff may also be diverted around the excavation using heavy timbers or similar materials laid on the ground;
- Stockpiling of materials will be minimised, and essential stockpiles will be located as far from watercourses as possible;

- The base of the excavation will be at the constructed level, with water gathered in a sump and pumped at a low flow rate into either the mini-settlement pond or track swale;
- If pumping to a SuDS feature is not feasible or the flow rate is too high, flows will be collected and pumped to the downhill side of the excavation over flat vegetated land, well away from watercourses;
- If the downhill slope is steep, a shallow trench will be dug parallel to contour lines to ensure water filters into the soil layers. This trench will be backfilled with excavated material after the Turbine base is completed; and
- Foundation working areas will be re-vegetated as soon as possible after construction.

Monitoring of surface water on quantitative and qualitative parameters during the construction phase will be carried out. As a minimum, the following parameters will be recorded in surface waters: pH, conductivity, chemical oxygen demand, suspended solids and total dissolved solids.

If monitored levels exceed the threshold levels outlined in European Union Environmental Objectives (Surface Waters) Regulations 2009 to 2019, mitigation measures to protect surface water will be reviewed by the Environmental Manager acting on behalf of the Appointed Contractor.

9.1.3.2. Site Specific Fine Sediment Pollution Management:

Mitigation for the protection of surface water quality from runoff carrying fine sediments, hazardous substances and urban pollutants, such as fuel emissions, involves silt control measures. These include proper planning of works, Temporary Construction Compound, storage management and excavation plans, as follows:

- Silt fencing and runoff control measures will be implemented to prevent contaminant entering the Temporary Surface Water Drainage network. This will be aided through proper storage of hazardous materials and waste management practice;
- Planning of works will be conscious of available weather forecasts and avoid working during heavy rain/storm events to minimise the risk of runoff that may be in excess of the capacity of the runoff control measures outlined in this EIAR. If working during precipitation events cannot be avoided, then runoff control measures will be actively monitored during the works to ensure their capacity is not compromised;
- Appropriate silt control measures, including silt traps, silt fences, check dams, swales, and sedimentation ponds, shall be implemented, along with temporary settlement tanks in areas requiring water pumping;
- Trackside swales will be trapezoidal in section, at least 300 mm wide at the bottom and 450 mm deep, with check dams provided at prescribed intervals on all drainage channels to decrease erosion potential and trap silts;
- Importation of materials from off-site, such as aggregates and other construction materials, will be closely monitored to ensure that no contamination or invasive species, is brought onto the Site from external sources. Importation of materials such as aggregates and other forms of construction materials will be monitored, documented, certified, sampled and tested as per the requirements of the **Appendix 2.1.2 – Waste Management Plan**.

- Vegetation will not be stripped from existing drains unless absolutely necessary, as existing vegetation can act as a final filter during runoff conveyance to the watercourse, provided sufficient pre-treatment is in place.
- An Emergency Response Plan (ERP) will be in place for the construction phase and includes a spill response and control procedure that will be followed in the event of a spill/leakage occurring during construction. All site operatives will be trained in the requirements of the ERP and all site vehicles will also contain emergency spill kits.

The ERP will be updated prior to the construction phase commencing, by the Appointed Contractor. The ERP is detailed in **Appendix 2.1 CEMP**. In the event of a spill/leak, the following steps will be followed:

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using spill control materials, track mats or other material as required.
- Do not spread or flush away the spill. If possible, cover or bund off any vulnerable areas where appropriate such as drains, watercourses or sensitive habitats.
- If possible, clean up as much as possible using the spill control materials.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the EcoCoW immediately giving information on the location, type and extent of the spill so that they can take appropriate action.
- The EcoCoW will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The EcoCoW will notify the appropriate regulatory body such as Roscommon County Council and the Environmental Protection Agency (EPA), if deemed necessary.
- A record of all environmental incidents will be kept on file by the EcoCoW and the Main Contractor.

9.1.3.3. Drilling works mitigation

The proposed GCR is schedule to cross the N5 national road utilising Horizontal Directional Dig techniques as outlined in Chapter 2 Project Description. There are no watercourses in the vicinity of the proposed crossing point, however best practice drilling techniques will be followed to reduce the likely impacts from drilling works and any potential for contamination of groundwater, the following mitigation measures are proposed:

- Bentonite, an inert drilling fluid, will be used in the works;
- The drilling rig and fluid handling units will be located on one side of the crossing and will be stored on double bunded 0.5mm PVC bunds which will contain any fluid spills and storm water run-off;

- The drilling process should be continuously monitored to detect any possible leaking of drilling fluid. This can be gauged by monitoring pumping rates and pressures as well as observing for a bentonite plume;

In the event that drilling fluid does escape from the HDD through hydraulic fracturing the Ecological Clerk of Works (EcoCoW) should be informed immediately, and corrective measures should be implemented (refer to Chapter 6 Biodiversity and Appendix 2-1 CEMP);

9.1.3.4. Groundwater Mitigation:

To prevent and manage fine sediment pollution and accidental spills from impacting the hydrogeology environment, occasional dewatering of surface water from excavated Turbine Foundations will be directed to a settlement pond for infiltration slightly downgradient. This ensures that recharge rates remain unchanged.

- Designate specific areas for refuelling and maintenance in a controlled manner, located on impervious surfaces/bunded trays to prevent spills from seeping into the ground;
- Avoid use of herbicides for vegetation control around Turbines and Site Access Tracks. Where herbicides are necessary, use environmentally friendly alternatives and apply them following strict guidelines to prevent infiltration into groundwater;
- Conduct baseline groundwater quality testing before the wind farm becomes operational to establish existing conditions; and
- Implement a regular groundwater monitoring program to detect any potential contamination early and take immediate corrective action.

During the construction of turbine foundations, temporary drainage measures will be implemented to facilitate groundwater dewatering. Water entering the excavation may have a relatively high concentration of suspended solids, therefore, the settlement ponds receiving this water will be designed to accommodate this flow. Pumping water from Turbine Foundation excavations can lead to substantial flow rates into settlement ponds. Where possible drainage channels will be installed to de-water excavations via gravity flow. Where pumping is required to de-water deeper excavations, temporary storage will be provided within the excavations and dewatering will be carried out at a flow rate that matches the capacity of the settlement ponds.

Additionally, the mitigation measures outlined in the above sections are to be implemented to prevent any likely significant adverse effects to groundwater.

9.1.3.5. Accidental Spills and Leaks Control Measures

To avoid and manage accidental spills and leaks, a series of measures listed below will be implemented. The Appointed Contractor will be responsible for ensuring their implementation. To prevent contamination from fuel, oil, chemical and cementitious materials, the following measures will be adopted:

During concrete pours:

- Concrete pours shall not occur during forecasted heavy rainfall, and the pour area must be drained of any water. In case of spills, temporarily block dirty water drains in the immediate

area, monitor and adjust the pH levels of water in settlement ponds using CO₂ entrainment if necessary, and clear any spillage immediately, depositing it in the chute wash down area;

- Delivery trucks, tools, and equipment will be cleaned at designated areas within a controlled site area, with the concrete truck chute cleaning area lined with impermeable material to protect groundwater from pollution (refer to **Planning Drawing 23604-405) – Part 1**;

For fuel, oils and chemicals

- Ensure all fuels, oils, and chemicals are stored in bunded areas at least 50 meters from watercourses or drainage areas, with a capacity of 110% of the total volume.
- Construct bunded areas in accordance with AS 1940:2004 standards;
- The refuelling of construction machinery and vehicles will be carried out in designated refuelling areas using a prescribed re-fuelling procedure;
- Refuelling and maintenance activities will be prohibited near watercourses or drainage areas to minimise contamination risks;
- Refuelling and maintenance activities will be undertaken on impervious surfaces or bunded trays to prevent spills from seeping into the ground
- Appropriate spill kits will be readily available and stocked. Spill kits will be maintained on the mobile fuel truck and at numerous locations on the Site.
- Only mechanically sound vehicles, equipment and machinery on Site will be used on site
- Wastewater and greywater from the temporary construction compound will be transferred offsite by a licensed facility for treatment and disposal.

All monitoring records shall be maintained by the Appointed Contractor and submitted to the Applicant at agreed intervals. The monitoring details will include:

- Records of regular inspection, on bunds, vehicles, oil storage on Site according to the **CEMP (Appendix 2-1)**;
- Records of silt fencing conditions and placement; and
- Records of any water ingress during excavation.

Disposal:

- Waste fuel, oils and chemicals are hazardous waste. They will be stored for short durations onsite in a covered bunded container located on the bunded refuelling area.
- The waste fuel, oils and chemicals will be collected and disposed of by a suitably licenced contractor. Where possible, waste fuel, oils and chemicals will be recycled, where this is not possible, they will be treated to ensure it can be disposed of safely and in compliance with EPA requirements and **EIAR Appendix 2.1.3 Waste Management Plan**.

Notify the Project Manager and EcoCoW immediately giving information on the location, type and extent of the spill so that they can take appropriate action.

- In the event of a spill/leak, the following steps will be followed:
- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required.
- Do not spread or flush away the spill. If possible, cover or bund off any vulnerable areas where appropriate such as drains, watercourses or sensitive habitats.
- If possible, clean up as much as possible using the spill control materials.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the EcoCoW immediately giving information on the location, type and extent of the spill so that they can take appropriate action.
- The EcoCoW will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The EcoCoW will notify the appropriate regulatory body such as Roscommon County Council and the Environmental Protection Agency (EPA), if deemed necessary.

A record of all environmental incidents will be kept on file by the EcoCoW and the Main Contractor.

9.1.3.6. Construction Wheel-wash Facilities

- Wheel wash facilities are to be provided at all entrances/exits for the site. All construction vehicles leaving site will be required to drive through these wheel wash areas;
- Water residue from the wheel wash will be fed through a settlement pond, interceptor and then discharge to vegetation;
- The wheel wash area will be cleaned regularly so as to avoid build-up of residue;
- Wheel wash areas are outlined in **Planning Drawing 23604-405**.

9.1.3.7. Dust Management

- Dampening of the Site Access Tracks using water bowsers during prolonged dry periods if necessary
- Construction vehicles delivering or collecting material with potential for dust emissions shall be enclosed, covered or wetted at all times to restrict the escape of dust;
- Construction vehicles delivering or collecting material with potential for dust emissions shall be checked before accessing the public road network, to confirm there is no potential for dust emissions;
- Public roads directly outside the construction site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary;

- Transport of materials to and from the construction site will take place in normal working hours and along routes agreed with Roscommon County Council;
- Vehicle speeds will be restricted on the internal Site Access tracks
- Dusty materials such as excavated materials will be stored and handled appropriately (e.g. covering where necessary and minimising the drop heights of materials).
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods;
- Suitable hoardings will be erected at construction site to prevent wind blow of materials;

9.2. Operational Phase

9.2.1. Mitigation for Disturbance

Mitigation is required to avoid adverse effects on a QI (Otter) of Lough Ree SAC arising from visual and noise disturbance.

Construction traffic within the wind farm Site will follow the measures described with the Traffic Management Plan (**EIAR Appendix 2.1.4**). This includes a speed restriction on internal access tracks of 25kmh.

9.2.2. Mitigation for Contamination

During the operational phase, the operator of the wind farm will put the mitigation measures outlined in **Section 9.1.2.5 – Accidental Spills and Leaks** in place during maintenance works.

The revegetation of drainage works and other exposed surfaces, combined with the non-intrusive nature of operations, minimises the risk of sediment release into watercourses during the operational phase. To ensure controlled, inspected, and managed drainage discharges throughout the operational phase, attenuation/settlement ponds will be installed at discharge points.

As per **EIAR Appendix 2.1.1: SWMP**, following construction, the amount of on-site traffic will be negligible and there will be no particular risk of sediment runoff. Runoff from Site Access Tracks, Turbine Hardstands, and other works areas will continue to be directed to settlement ponds, which will be left in place. Check dams within the drainage channels will remain in place. The retention of this part of the drainage infrastructure will ensure that runoff continues to be attenuated and dispersed across existing vegetation before discharge into the ground. Details of settlement ponds and check dams are contained in **Planning Drawings 23604-400** and **23604-401**, respectively. In the operational phase of the wind farm, the reliance on the drainage system discussed above will be reduced as areas naturally revegetate. Once areas revegetate, this will result in a resumption of the natural drainage management that will have existed prior to any construction. Due to the similarity of the potential effects during this phase and the construction phase of the project, see **Section 9.1** for details on the mitigation for contamination during the construction phase.

9.3. Decommissioning Phase

9.3.1. Mitigation for Disturbance

Mitigation is required to avoid adverse effects on a QI (Otter) of Lough Ree SAC arising from visual and noise disturbance.

Construction traffic within the wind farm Site will follow the measures described with the Traffic Management Plan (**EIAR Appendix 2.1.4**). This includes a speed restriction on internal access tracks of 25kmh.

9.3.2. Mitigation for Contamination

Due to the similarity of the potential effects during this phase and the construction phase of the project, see **Section 9.1** for details on the mitigation for contamination during the construction phase and the controls outlined in the CEMP (**EIAR Appendix 2.1**).

A Decommissioning Management Plan has been prepared for the proposed Project, see **EIAR Appendix 2.1.4 DMP**.

10. RESIDUAL EFFECTS

Table 16 displays the impact assessment for the identified Qis/SCIs where likely adverse effects could not be ruled out in the absence of mitigation, and confirms the residual effects following the application of mitigation measures

Table 96 Residual effects of the proposed Project following mitigation measures

Lough Ree SAC					
Receptor [Code]	Attributes	Ex situ impact category (AA Screening)	In-Combination Effects	Mitigation	Residual Effects
Otter [1355]	Distribution, Barriers to Connectivity	Disturbance and/or displacement of species; Habitat/species fragmentation; Changes in population density;	Yes	Mitigation outlined in Section 9.1.2, 9.2.1 and 9.3.1 shall be followed including, speed restrictions and preconstruction surveys for Otter, avoid potential disturbance effects	No Significant adverse effect
	Fish Biomass availability, Barriers to Connectivity	Changes in water quality and resource	Yes	Mitigation outlined in Section 9.1.3, 9.2.2 and 9.3.2 , will be followed including, best practice measures to minimise the potential for pollution or contamination risk	No Significant adverse effect
Lough Ree SPA					
Receptor [Code]	Attribute	Ex situ impact category (AA Screening)	In-Combination Effects	Mitigation	Residual Effects
Little Grebe [A004] Whooper Swan [A038] Wigeon [A050] Teal [A052] Mallard [A053] Shoveler [A056] A061 Tufted Duck [A061] Common Scoter [A065] A07 Goldeneye [A067] Coot [A125] Golden Plover [A140] Lapwing [A142] Common Tern [A193] Wetlands and Waterbirds [A999]	Productivity rate., Location, hectares, and forage biomass.	Changes in water quality and resource	Yes	Mitigation outlined in Mitigation outlined in Section 9.1.3, 9.2.2 and 9.3.2 , will be followed including, best practice measures to minimise the potential for pollution or contamination risk	No Significant adverse effect

11. CONCLUSION

This Natura Impact Statement has been prepared to provide sufficient objective scientific information in support of the Project, in order to identify and address potential adverse effects on the integrity of any European sites (also referred to as Natura 2000 sites) from the Project, alone and/or in combination with other plans or developments.

Stage 1 Screening of Likely Significant Effects on European sites identified within a Zone of Influence for the Project evaluated potential likely significant effects on the Qualifying Interests of Lough Ree SAC, and on the Special Conservation Interests of the Lough Ree SPA and Ballykenny-Fisherstown Bog SPA, which could not be excluded (i.e. screened out) at this stage.

The Screening for AA determined, on the basis of objective information, that the Project, individually or in combination with other plans or projects, **would not have a likely significant effect** on the following **five** European Sites due to indirect hydrological connectivity and potential ex-situ disturbance effects to SCI species:

- Annaghmore Lough (Roscommon) SAC
- Clooneen Bog SAC
- Lough Forbes Complex SAC
- Brown Bog SAC
- Corbo Bog SAC

As such, by virtue of the requirement for protection or provision of mitigation measures required during construction of the Project, the recommendation of the screening process was to proceed to Stage Two of the Appropriate Assessment process for these **three** European sites (Lough Ree SAC, Lough Ree SPA and Ballykenny-Fisherstown Bog SPA).

In particular, consideration was given to the potential for significant effects via **contamination, mortality, disturbance and displacement** during the Project's construction phase, and via **contamination, mortality, disturbance and displacement** during the operation phase. Thus, the above elements were brought forward for further critical examination during Stage 2 Appropriate Assessment. This identified requirements for further mitigation measures during the construction, operation and decommissioning phases of the Project.

Cumulative and In-combination effects are presented and considered in detail in **Section 9** of this NIS. Provided adherence to the overarching policies and objectives of the plans and programmes and best practice and mitigation measures are implemented for individual projects, there is no potential for the mentioned plans and projects to have a cumulative impact to features of biodiversity interest, in combination with the Project. All Projects considered in the Zone of Influence of the Project are subject to the statutory planning process and where required are accompanied by the requisite planning and environmental assessment documentation, including Appropriate Assessment, Ecological Impact Assessment and Environmental Impact Assessment reporting. To that end, other projects, programmes and plans within the project zone of influence have been developed under the consideration of potential impacts and effects to their receiving and surrounding environment and are tasked with avoiding and minimising such impacts, through the Appropriate Assessment and Environmental Impact Assessment processes.

It is determined that, following the implementation of mitigation measures for the protection of designated QIs and SCIs, as outlined in **Section 9**, on the basis of best scientific evidence and in the absence of any reasonable scientific doubt, that the Project, individually or in combination with any other development, **will not adversely effect** the integrity of any European Site.

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