

Galetech Energy Services

Islandmore Wind Farm

Appropriate Assessment Screening

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woodrow
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1. INTRODUCTION

1.1. Project Background

APEM Group Woodrow (hereafter referred to as Woodrow) was commissioned by Galetch Energy Services Ltd. on behalf of Islandmore Wind Farm Limited (hereafter referred to as the “Developer”) to prepare a Stage 1 Screening for Appropriate Assessment (AA) for a proposed wind farm development to be known as the Islandmore Wind Farm located in Co. Roscommon (hereafter referred to as the “Proposed Development”).

The Proposed Development site is located at Largan, Boleysillagh, Cloonmeen, Toobrackan, and Tullaghanrock, Co. Roscommon (IG: M 62068 99285), approximately 2 kilometres (km) north of Ballaghaderreen, approximately 13km east of Charlestown in County Mayo and approximately 6km southwest of Gurteen, Co. Sligo. It extends over a total area of approximately 157 hectares (ha). The Site location is shown in Figure 1, as well as the Proposed Development site layout in Figure 2.

1.2. Purpose of this Document

The purpose of this AA screening is to determine through Source-Pathway-Receptor (S-P-R) model the potential significant effects, if any, that the Proposed Development may have, acting alone or in combination with other plans or projects, on European sites (i.e., Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) within the potential zone of influence (ZoI) of the Proposed Development, in view of their conservation objectives. SPAs and SACs are collectively referred to as “European sites” or “Natura 2000 Sites”. Based on the outcome of the Stage 1 AA Screening, this report aims to establish whether or not Stage 2 AA is required.

1.3. Brief Description of the Proposed Development

The Proposed Development comprises a wind farm, including all associated development works to accommodate its construction, installation, operation, maintenance and the export of electrical power to the national grid. This will include:

- Three wind turbines with a hub height of 104m, a rotor diameter of 162m and an overall tip height of 185m.
- Seven wind turbines with a hub height of 82m, a rotor diameter of 136m and an overall tip height of 150m.

A detailed description of the Proposed Development is presented in Section 3.7.

1.4. Structure of this Report

The structure of this report relates in sequence to the process of assessing the potential impact of the Proposed Development in the context of sequential requirements of Article 6 of the Habitats Directive 92/43/EEC and transposing legislation. The assessment is carried out in adherence to the legislative requirements as outlined in Section 2.

The structure of the report is as follows:

- **Section 1:** Introduction, including purpose of the report, brief project description, and competency of expert authors;
- **Section 2:** Description of the legislative context and AA requirement and process;
- **Section 3:** Description of methodology, including data sources and approach to desk and field surveys, the AA screening, and the assessment of cumulative effects;
- **Section 4:** AA Screening, including assessment of Natura 2000 sites within the Zol and cumulative effects;
- **Section 5:** Conclusion of the findings of the AA Screening;
- **Section 6:** References; and
- **Section 7:** Appendices.

1.5. Evidence of Technical Competence and Experience

This AA Screening Report was prepared by APEM Group Woodrow Ecologists Damien McAndrew, Louise Gannon and John Ball. Grisel Calcagno (Senior EIA consultant) and Mike Dobson (Associate Director) carried out the technical review of this report.

Field surveys to inform this report were carried out by Meadhbh Costigan (senior ecologist), Brenden Burley (peatland and wetland specialist), Damien McAndrew (ecologist), Adrian Walsh (ecologist) and James O'Connor (senior ecologist).

Damien McAndrew - Damien is a Bat Ecologist with APEM Group Woodrow and has co-authored this Screening report. Damien has extensive experience in AA and Natura Impact Statement (NIS) reporting, along with authoring Ecological Impact Assessments (EclA) and constraints reports for various flood relief schemes. He has previously worked as an Assistant Ecologist and Project Ecologist within other consultancies in Ireland, and has authored multiple AA and accompanying NIS reports, along with conducting field surveys within the Republic of Ireland and Northern Ireland, delivered toolbox talks, and performed Ecological Clerk of Works (ECoW) on site. Damien has worked on numerous large-scale developments within the renewables sector which have been subject to requiring planning.

Louise Gannon – Louise is an Ecologist with APEM Group Woodrow and has co-authored this Screening report. She has experience in AA and Natura Impact Statement (NIS) reporting. Louise is proficient in conducting an extensive array of fieldwork surveys and survey techniques including bat surveys, potential roost feature surveys, analyzing bat call recordings using both Kaleidoscope and Bat Explorer, and mammal surveys including badger and otter. She has assisted on a number of other field surveys also, including an aquatic macro invertebrate survey for water quality analysis, a White-clawed Crayfish survey, habitat and invasive species surveys.

John Ball – John is a senior ornithologist with APEM Group Woodrow and has co-authored this report. John is an experienced ornithologist, project manager, and conservation specialist, with a strong academic background and a professional focus on applied ecology. John has delivered high-quality outcomes across the public, charity, and private sectors, from complex species recovery projects to large-scale renewable energy developments. As a senior ornithologist he projects manages a range

of ornithological workstreams for large-scale renewable energy developments across the UK and Ireland. This includes overseeing the full lifecycle of ornithological inputs, from initial scoping and survey design through to data management, baseline reporting, and the preparation of EIAR chapters. He works closely with clients to integrate mitigation measures at the design stage, ensuring regulatory compliance and ecological best practice.

Róisín NigFhloinn - Associate Director. Róisín has 16 years' practice working as an ecological consultant in the UK and Ireland. Her experience includes environmental and ecological impact assessment and mitigation design for development projects including utilities (water & electricity), renewables (wind & solar), national road schemes, national trails, other large infrastructure projects and smaller scale commercial and residential developments. She is competent in the compilation of Ecological and Environmental reports, including Ecological Impact Assessment (EclA), to inform planning proposals, and as part of Environmental Impact Assessment Reports (EIAR) and reports to inform the Appropriate Assessment process (Screening and Natura Impact Statements (NIS) (Habitats Regulations Assessment in Northern Ireland)). Róisín holds a MSc in Ecology and management of the Natural Environment from University of Bristol (2011) and a B.A. Mod (BSc)(Hons) Natural Sciences from Trinity college, Dublin Specialising in Botany (2008). She is a Full member of CIEEM

2. APPROPRIATE ASSESSMENT BACKGROUND AND PROCESS

2.1. Legislative Context

The AA process in Ireland is driven by Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended) (hereafter referred to as the “Habitats Directive”) and the associated Council Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (as amended) (hereafter referred to as the “Birds Directive”), both of which are transposed into Irish Law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) (as amended) (hereafter referred to as the “Birds and Natural Habitats Regulations 2011”).

The Habitats Directive requires Member States of the European Union (EU) to designate SACs for habitats listed in Annex I and for species listed in Annex II of the Habitats Directive, to preserve habitats and species of international importance for conservation and to take measures to maintain or restore these to a favourable conservation status. Certain Annex I habitats are deemed ‘priority’ and have greater protection.

The Birds Directive provides a framework for the conservation and management of wild birds and requires Member States to designate SPAs based on the presence of internationally significant populations of rare or vulnerable species listed in Annex I of the Birds Directive, as well as certain regularly occurring migratory birds. The Birds Directive also requires Member States to take measures to maintain or restore bird populations to a favourable conservation status.

SPAs and SACs collectively contribute to Natura 2000, an extensive network of protected sites across the EU. The specific habitats and species for which an SAC is selected are called “Qualifying Interests” (QIs) and the specific bird species for which a SPA is selected are called “Special Conservation Interests” (SCI).

2.2. Requirement for Appropriate Assessment

The requirement for AA is set out in Article 6(3) of the Habitats Directive, which states that:

“Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

This requirement is transposed into Irish legislation by sections 212 - 221 of the Planning and Development Act 2024 (as amended) and the Birds and Natural Habitats Regulations 2011 and included under other associated legislation such as the Planning and Development Regulations 2001 (S.I. No. 600 of 2001) (as amended). These legislations require that, prior to granting approval for a proposed development, a screening for AA must be conducted by the relevant Competent Authority

to consider the implications of a proposed development of European sites. The AA screening aims to evaluate whether a proposed development could potentially have a significant effect, either individually or in combination with other plans or projects, on Natura 2000 sites, taking into consideration their conservation objectives and best scientific knowledge. Planning approval may only be granted where it is determined that a proposed development will not adversely affect the integrity of European sites. The objective of AA is to safeguard the long-term survival of habitats and species designated under the Natura 2000 network.

This report has therefore been prepared to provide supporting information to assist the Competent Authority in applying Article 6(3) and 6(4) of the Habitats Directive as necessary, under their roles, functions, and responsibilities, in relation to the AA screening of the Proposed Development. The Competent Authority may use such information to carry out an AA screening of the Proposed Development to ascertain whether or not it may adversely affect the integrity of Natura 2000 sites.

2.3. Stages of the Appropriate Assessment Process

The European Commission's (EC) Notice 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC 2021/C 437/01' (2021) promotes the following staged process for assessing plans or projects that are likely to have impact on Natura 2000 sites, with the need for each stage being dependent upon the outcomes of the preceding stage:

- **Stage 1 – Screening for AA:** “[...] to ascertain whether the plan or project is [...] likely to have a significant effect on the site (either alone or in combination with other plans or projects) in view of the site’s conservation objectives”. During this stage, mitigation or compensatory measures¹ cannot be considered to reach a conclusion that a proposed development is unlikely to result in significant effects in Natura 2000 sites (Office of the Planning Regulator (OPR), 2021). If the screening process identifies effects to be significant, potentially significant, or uncertain, then the process must proceed to Stage 2 (AA).
- **Stage 2 – AA:** “If likely significant effects cannot be excluded, the next stage of the procedure involves assessing the impact of the plan or project (either alone or in combination with other plans or projects) against the site’s conservation objectives and ascertaining whether it will affect the integrity of the Natura 2000 site, taking into account any mitigation measures. It will be for the competent authorities to decide whether or not to approve the plan or project in light of the findings of the appropriate assessment”. Stage 2 of the process considers potential effects in greater detail, including whether further mitigation measures are necessary to avoid, reduce, or offset negative effects on Natura 2000 sites. During this stage, a Natura Impact Statement (NIS)² must be prepared in order for a proposed development to

¹ ‘Mitigation measures’ are measures that aim to minimise, or even eliminate, the negative impacts likely to arise when a plan or project is implemented so that the site’s integrity is not adversely affected. Compensatory measures are independent of the project (including any associated mitigation measures). They are intended to offset the residual negative effects of the plan or project so that the overall ecological coherence of the Natura 2000 network is maintained. They can only be considered in the context of Article 6(4) of the Habitats Directive. Source: EC, 2021.

² A statement prepared for the purposes of Article 6 of the Habitats Directive setting out the implications of a project, whether on its own or in combination with other plans or projects, for any European site on which the

proceed; the NIS must contain the necessary information to enable the Competent Authority to carry out the AA. If the conclusion of the AA is negative (i.e., adverse effects on the integrity of a site cannot be excluded), then the process must proceed to Stage 3, or the plan or project should be abandoned.

- **Stage 3 – Derogation from Article 6(3) under certain conditions:** *“The third stage [...] only comes into play if, despite a negative assessment, the developer considers that the plan or project should still be carried out for imperative reasons of overriding public interest. This is only possible if there are no alternative solutions, the imperative reasons of overriding public interest are duly justified, and if suitable compensatory measures are adopted to ensure that the overall coherence of Natura 2000 is protected”.* It is up to the Competent Authority to decide whether a derogation from Article 6(3) can be applied (if requested by the Applicant).

project may have significant effects, having regard to the conservation objectives in relation to that site. Source: Planning and Development Act 2024 (as amended).

3. METHODOLOGY

3.1. Guidance and Practice Notes

This AA Screening has been prepared in accordance with the following guidelines and sources of information:

- Department of Environment, Heritage and Local Government (DEHLG) (2009), *'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities'*;
- DEHLG and the National Parks and Wildlife Service (NPWS) (2010), *'Circular NPWS 1/10 & PSSP 2/10 – Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities'*;
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2024), *'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine'*;
- EC (2000), *'Communication from the Commission on the Precautionary Principle'*;
- EU (2013), *'Interpretation Manual of European Union Habitats. Version EUR 28'*;
- EC (2019), *'Managing Natura 2000 Sites – The Provisions of Article 6 of the Habitat's Directive 92/43/EEC'*;
- EC (2021), *'Commission notice – Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC 2021/C 437/01'*;
- EC (2021), *'Commission notice – Guidance document on the strict protection of animal species of Community interest under the Habitats Directive'*;
- NPWS (2021), *'Strict Protection of Animal Species – Guidance for Public Authorities on the Application of Articles 12 and 16 of the EU Habitats Directive to development / works undertaken on or on behalf of a Public Authority'*;
- OPR (2021), *'OPR Practice Note PN01 Appropriate Assessment Screening for Development Management'*; and
- Roscommon County Council (RCC) (2022), *'Roscommon County Development Plan 2022 – 2028'*.

3.2. Zone of Influence

The *'Zone of Influence'* (Zoi) for a proposed development is the area over which QIs of a European site may be affected by changes in the receiving environment as a result of the proposed development and associated activities (OPR, 2021). This is likely to extend beyond a proposed development site, e.g., where there are ecological or hydrological links beyond the site boundaries. The Zoi will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2024). The Zoi for the Proposed Development was identified through a review of the Proposed Development details; the type of impacts and effects that could arise as a result; and the distance between the

Proposed Development and Natura 2000 sites (Figure 3), taking into consideration their QIs and features of conservation interest. The ZoI within which potential impacts from any proposed development must be considered for significant effects, depends on a variety of factors. According to the DEHLG's *'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities'* (2009), the approach to screening for AA of a plan or project should consider the following Natura 2000 sites:

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of influence of the plan or project, which in the case of projects, will change on a case-by-case basis. This is dependent on *"nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects"*. This is therefore an intangible area, lacking physical boundaries, and thus cannot be digitised or visualised accurately.
- Any Natura 2000 sites that are outside of the ZoI the plan or project area, but may potentially be impacted upon, e.g., through a hydrological connection.

In determining the ZoI, the initial Study Area is considered, and the S-P-R model is then applied. In line with OPR Guidelines, no specific arbitrary distance is used, rather the potential for source pathway receptors from the project to the European Sites are considered. The 'Study Area' includes the Proposed Development and surrounding areas surveyed to assess ecological aspects. The OPR's *'OPR Practice Note PN01 Appropriate Assessment Screening for Development Management'* (2021) describes the S-P-R model for determining the ZoI of a proposed development, which requires all pathways via which a designated site could be affected (irrespective of its distance to a proposed development) to be identified during the process; this includes direct as well as indirect pathways. This model also reflects guidance described in CIEEM's *'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine'* (2024).

3.3. Desk Study

A desk study was carried out in February 2025 to collate information available on Natura 2000 sites within the potential ZoI of the Proposed Development. This comprised a review of the following publications, websites, data sources and datasets including:

- An Coimisiún Pleanála Planning Portal;
- Aerial maps;
- Department of Housing, Local Government and Heritage (DHLGH) MyPlan.ie;
- Environmental Protection Agency (EPA) Maps;
- Geological Survey of Ireland (GSI);
- Inland Fisheries Ireland (IFI);
- National Biodiversity Data Centre (NBDC);
- NPWS Protected Sites;
- NPWS (2025), *'The Status of EU Protected Habitats and Species in Ireland – 2025'*; and

- Roscommon County Council Planning Portal.

3.4. Field Survey

Multidisciplinary ecological surveys were conducted within the Proposed Development site. A summary of surveys completed can be seen in Table 1.

Table 1. Ecological field surveys carried out for the Proposed Development

Survey type		Survey Date	Associated Report
Site scoping			
Initial walkover of site to identify ecological constraints with multidisciplinary surveys (habitat mapping, invasive species surveys, amphibian/reptile habitat suitability assessments, mammal surveys and bat habitat assessments)		06 September 2023	Ecological scoping report
Habitat surveys			
Habitat assessment – Fossitt 2000		25 September 2023, and 20 March 2025.	Islandmore Habitats Constraints and Scoping report
Detailed botanical surveys – Annex I conservation assessment surveys		11 July 2024, 27 August 2024, 28 August 2024, 10 September 2024, 11 September 2024, and 12 September 2024.	Islandmore Habitats Constraints and Scoping report Islandmore Habitats Technical report
Irish Vegetation Classification (IVC) surveys		11 July 2024, 27 August 2024, 28 August 2024, 10 September 2024, 11 September 2024, and 12 September 2024.	Islandmore Habitats Technical report
Invasive species surveys		20 March 2025, and 13 May 2025.	Islandmore Habitats Technical report
Ornithology surveys			
Vantage point (VP) surveys:			
Non-breeding 2019- 2020	VP1	25 October 2019, 26 October 2019, 01 November 2019, 07 November 2019, 13 November 2019, 03 December 2019, 11 December 2019, 17 December 2019, 08 January 2020, 17 January 2020, 23 January 2020, 05 February 2020, 12 February 2020, 20 February 2020, and 21 February 2020.	Islandmore Technical Ornithological baseline report
	VP2	25 October 2019, 26 October 2019, 01 November 2019, 07 November 2019, 14 November 2019, 03 December 2019,	

Survey type		Survey Date	Associated Report
		11 December 2019, 17 December 2019, 08 January 2020, 17 January 2020, 23 January 2020, 05 February 2020, 12 February 2020, 20 February 2020, and 21 February 2020.	
	VP3	25 October 2019, 26 October 2019, 01 December 2019, 07 November 2019, 14 November 2019, 28 November 2019, 10 December 2019, 19 December 2019, 08 January 2020, 17 January 2020, 23 January 2020, 05 February 2020, 12 February 2020, 20 February 2020 and 21 February 2020.	
Breeding 2020	VP1	24 March 2020, 22 April 2020, 24 April 2020, 30 April 2020, 06 May 2020, 14 May 2020, 25 May 2020, 26 May 2020, 12 June 2020, 24 June 2020, 03 July 2020, 09 July 2020, 23 July 2020, 05 August 2020, 11 August 2020, 24 August 2020, 25 August 2020, and 27 August 2020.	Islandmore Technical Ornithological baseline report
	VP2	24 March 2020, 25 March 2020, 22 April 2020, 24 April 2020, 30 April 2020, 08 May 2020, 14 May 2020, 26 May 2020, 11 June 2020, 03 July 2020, 09 July 2020, 23 July 2020, 05 August 2020, 11 August 2020, 24 August 2020, and 27 August 2020.	
	VP3	24 March 2020, 22 April 2020, 24 April 2020, 30 April 2020, 07 May 2020, 14 May 2020, 25 May 2020, 26 May 2020, 11 June 2020, 25 June 2020, 03 July 2020, 09 July 2020, 23 July 2020, 05 August 2020, 11 August 2020, 24 August 2020, and 27 August 2020.	
Non-breeding 2020 - 2021	VP1	19 September 2020, 21 October 2020, 10 November 2020, 08 December 2020, 05 January 2021, 25 February 2021, 07 March 2021, and 08 March 2021.	Islandmore Technical Ornithological baseline report
	VP2	19 September 2020, 22 October 2020, 07 November 2020, 10 December 2020,	

Survey type		Survey Date	Associated Report
		07 January 2021, 09 February 2021, 06 March 2021, and 09 March 2021.	
	VP3	22 September 2020, 20 October 2020, 08 November 2020, 12 December 2020, 08 January 2021, 06 February 2021, and 06 March 2021.	
Breeding 2021	VP1	23 March 2021, 30 April 2021, 06 May 2021, 11 May 2021, 11 June 2021, 14 June 2021, 29 June 2021, 30 June 2021, 05 July 2021, 08 July 2021, 03 August 2021, 11 August 2021, 16 August 2021, and 27 August 2021.	Islandmore Technical Ornithological baseline report
	VP2	24 March 2021, 29 April 2021, 05 May 2021, 06 May 2021, 11 May 2021, 14 June 2021, 29 June 2021, 30 June 2021, 06 July 2021, 03 August 2021, 04 August 2021, 11 August 2021, and 27 August 2021.	
	VP3	23 March 2021, 29 April 2021, 05 May 2021, 06 May 2021, 11 June 2021, 14 June 2021, 25 June 2021, 29 June 2021, 30 June 2021, 07 July 2021, 16 July 2021, 03 August 2021, 04 August 2021, 05 August 2021, 13 August 2021, and 16 August 2021.	
Non-breeding 2021 - 2022	VP1	28 October 2021, 30 November 2021, 01 December 2021, 09 December 2021, 14 December 2021, 12 January 2022, 18 January 2022, 20 January 2022, 11 February 2022, 16 February 2022, 26 February 2022, 28 February 2022, 23 March 2022, and 28 March 2022.	Islandmore Technical Ornithological baseline report
	VP2	28 October 2021, 21 November 2021, 22 November 2021, 23 November 2021, 28 November 2021, 09 December 2021, 18 December 2021, 19 December 2021, 25 January 2022, 26 January 2022, 27 January 2022, 21 February 2022, 22 February 2022, and 23 March 2022.	
	VP3	28 October 2021, 24 November 2021, 28 November 2021, 13 December 2022,	

Survey type		Survey Date	Associated Report
		14 December 2022, 12 January 2022, 18 January 2022, 20 January 2022, 11 February 2022, 16 February 2022, 26 February 2022, and 24 March 2022.	
	VP4	28 October 2021, 24 November 2021, 30 November 2021, 13 December 2021, 18 December 2021, 19 December 2021, 26 January 2022, 28 January 2022, 21 February 2022, 22 February 2022, 01 March 2022, 23 March 2022, and 27 March 2022.	
Breeding 2022	VP1	29 March 2022, 07 April 2022, 13 April 2022, 19 April 2022, 10 May 2022, 16 May 2022, 15 June 2022, 22 June 2022, 19 July 2022, 26 July 2022, 24 August 2022, and 28 August 2022.	Islandmore Technical Ornithological baseline report
	VP2	27 March 2022, 28 March 2022, 04 May 2022, 16 May 2022, 24 May 2022, 02 June 2022, 15 June 2022, 19 July 2022, 26 July 2022, 03 August 2022, 18 August 2022, and 25 August 2022.	
	VP3	29 March 2022, 13 April 2022, 19 April 2022, 10 May 2022, 18 May 2022, 24 May 2022, 14 June 2022, 29 June 2022, 13 July 2022, 19 July 2022, 31 July 2022, 03 August 2022, 16 August 2022, and 31 August 2022.	
	VP4	28 March 2022, 29 March 2022, 12 May 2022, 30 May 2022, 14 June 2022, 26 June 2022, 13 July 2022, 17 July 2022, 31 July 2022, 16 August 2022, 18 August 2022, 25 August 2022, and 31 August 2022.	
Non-breeding 2022 - 2023	VP1	13 December 2022, 14 December 2022, 06 January 2023, 17 January 2023, 19 January 2023, 27 January 2023, 08 February 2023, 13 February 2023, 22 February 2023, 26 February 2023, 14 March 2023, 16 March 2023, and 20 March 2023.	Islandmore Technical Ornithological baseline report

Survey type		Survey Date	Associated Report
	VP2	13 December 2022, 06 January 2023, 17 January 2023, 19 January 2023, 27 January 2023, 08 February 2023, 13 February 2023, 22 February 2023, 26 February 2023, 09 March 2023, 14 March 2023, and 20 March 2023.	
	VP3	15 December 2022, 04 January 2023, 12 January 2023, 26 January 2023, 30 January 2023, 07 February 2023, 09 February 2023, 21 February 2023, 23 February 2023, 09 March 2023, 16 March 2023, and 20 March 2023.	
	VP4	14 December 2022, 15 December 2022, 04 January 2023, 12 January 2023, 26 January 2023, 30 January 2023, 07 February 2023, 09 February 2023, 21 February 2023, 23 February 2023, 13 March 2023, and 19 March 2023.	
Breeding 2023	VP1	04 April 2023, 19 April 2023, 05 May 2023, 11 May 2023, 21 June 2023, 28 June 2023, 04 July 2023, 11 July 2023, 11 August 2023, 22 August 2023, 31 August 2023, and 05 September 2023.	Islandmore Technical Ornithological baseline report
	VP2	06 April 2023, 20 April 2023, 02 May 2023, 12 May 2023, 09 June 2023, 20 June 2023, 06 July 2023, 12 July 2023, 11 August 2023, 22 August 2023, 31 August 2023, and 05 September 2023.	
	VP3	06 April 2023, 25 April 2023, 02 May 2023, 22 May 2023, 27 June 2023, 28 June 2023, 05 July 2023, 12 July 2023, 10 August 2023, 18 August 2023, 30 August 2023, and 04 September 2023.	
	VP4	17 April 2023, 23 April 2023, 07 May 2023, 30 May 2023, 27 June 2023, 29 June 2023, 09 July 2023, 25 July 2023, 10 August 2023, 18 August 2023, 30 August 2023, and 04 September 2023.	
Dusk surveys		10 June 2020, 16 June 2021 29 June 2021, 23 March 2022	Islandmore Technical Ornithological baseline report

Survey type		Survey Date	Associated Report
(Breeding seasons 2020, 2021 and 2022)		29 March 2022, 17 August 2022, and 31 August 2022.	Habitat Walkover survey and dusk survey effort report
Walkover surveys	Non-breeding season 2019 - 2020	06 December 2019, 12 January 2020, and 07 February 2020.	Islandmore Technical Ornithological baseline report Habitat Walkover survey and dusk survey effort report
	Breeding season 2020	07 May 2020, 10 June 2020, 11 June 2020, 21 July 2020, 22 July 2020, and 23 July 2020.	
	Non-breeding season 2020 - 2021	23 October 2020, 11 December 2020 and 27 February 2021.	
	Breeding season 2021	16 June 2021, 24 June 2021, 05 July 2021, and 07 July 2021.	
	Non-breeding season 2021 - 2022	01 December 2021, 03 December 2021, 26 January 2022, 28 January 2022, and 03 March 2022.	
	Breeding season 2022	04 May 2022, 10 May 2022, 12 May 2022, 16 May 2022, 24 May 2022, 02 June 2022, 14 June 2022, 22 June 2022, 29 June 2022, 03 August 2022, 16 August 2022, 24 August 2022, 25 August 2022, and 31 August 2022.	
	Non-breeding 2022 – 2023	23 January 2023, 25 January 2023, 31 January 2023, 09 February 2023, 13 March 2023, 14 March 2023, 19 March 2023, and 20 March 2023.	
	Breeding season 2023	17 April 2023, 17 April 2023, 20 April 2023, 25 April 2023, 02 May 2023, 12 May 2023, 22 May 2023, 30 May 2023, 09 June 2023, 19 June 2023, 20 June 2023, 21 June 2023, 04 July 2023, 09 July 2023, 11 July 2023, and 25 July 2023.	
Waterbird surveys	Non-breeding 2019 - 2020	07 November 2019, 14 November 2019, 10 December 2019, and 11 January 2020.	Islandmore Technical Ornithological baseline report Wider area waterbird survey report

Survey type		Survey Date	Associated Report
	Non-breeding 2020-2021	09 November 2019, 09 December 2020, 06 January 2021, 08 February 2021, and 07 March 2021.	
Hen harrier non-breeding seasons	2019 – 2020	12 January 2020	Islandmore Technical Ornithological baseline report CONFIDENTIAL hen harrier roost monitoring report
	2020 - 2021	21 October 2020, 22 October 2020, 07 November 2020, 08 November 2020, 09 December 2020, 11 December 2020, 12 December 2020, 06 January 2021, 07 January 2021, 08 January 2021, 06 February 2021, 08 February 2021, 09 February 2021, 25 February 2021, 06 March 2021, and 07 March 2021.	
	2021 - 2022	20 October 2021, 21 October 2021, 23 November 2021, 24 November 2021, 09 December 2021, 13 December 2021, 14 December 2021, 12 January 2022, 18 January 2022, 19 January 2022, 20 January 2022, 26 January 2022, 27 January 2022, 28 January 2022, 11 February 2022, 21 February 2022, 22 February 2022, 28 February 2022, 01 March 2022, and 03 March 2022.	
	2022 - 2023	14 December 2022, 15 December 2022, 17 January 2023, 23 January 2023, 25 January 2023, 09 February 2023, 13 February 2023, and 15 February 2023.	
	2024 - 2025	24 October 2024, 21 November 2024, 09 January 2025, 17 January 2025, 29 January 2025, 24 February 2025, and 12 March 2025.	
Hen harrier breeding surveys	2020	26 March 2020, 27 March 2020, 05 May 2020, 06 May 2020, 10 June 2020, 25 June 2020, 26 June 2020, 22 July 2020, and 24 July 2020.	Islandmore Technical Ornithological baseline report CONFIDENTIAL hen harrier roost monitoring report
	2021	23 March 2021, 24 March 2021, 24 May 2021, 26 May 2021, 28 May 2021, 06 July 2021, 07 July 2021, and 08 July 2021.	
	2022	07 April 2022, 13 April 2022, 04 May 2022, 30 May 2022, 22 June 2022, 26 June 2022, 13 July 2022, 26 July 2022,	

Survey type		Survey Date	Associated Report
		and 24 August 2022.	
	2023	04 April 2023, 09 April 2023, 18 April 2023, 19 April 2023, 23 April 2023, 05 May 2023, 11 May 2023, 22 May 2023, 30 May 2023, 20 June 2023, 21 June 2023, 28 June 2023, 29 June 2023, 04 July 2023, 06 July 2023, 11 July 2023, and 12 July 2023.	
Protected terrestrial			
Habitat suitability and field signs surveys for badger, otter, Irish hare, red squirrel, pine marten and other mammal		05 March 2025, 06 March 2025, and 27 March 2025.	
Aquatic and fisheries assessment			
Salmon/lamprey suitability surveys (River Hydromorphology Assessment Techniques - RHAT) and baseline water quality assessment (Q-values). Also conducted otter survey and kingfisher habitat suitability assessment survey		25 September 2024, 26 September 2024, 10 October 2024, 11 October 2024, 06 May 2025, and 07 May 2025.	
Bat surveys			
Habitat suitability assessment and potential roost availability/suitability surveys		04 March 2023.	Islandmore Technical Bat Survey Results 2023 report
Deployment of static bat detectors Three deployments of minimum 10-nights covering spring, summer & autumn		26 April 2023, 27 June 2023 and 30 August 2023.	
Emergence/re-entry surveys		04 August 2023, and 30 August 2023.	
Nighttime bat walkover survey (completed by NM Ecology Ltd.)		05 May 2020, 21 July 2020 and 14 September 2020.	

3.4.1. Habitat Assessment

Habitat assessment and classification to Fossitt (2000) level 3 was undertaken 25, 26, 27 and 28 September 2023, updated 20 March 2025. Detailed botanical surveys – Annex I conservation assessment surveys, and Irish Vegetation Classification (IVC) surveys were carried out on 11 July 2024, 27 and 28 August 2024, and 10, 11 and 12 September 2024. Invasive species surveys were undertaken 20 March 2025 and 13 May 2025.

3.4.2. Ornithology

NatureScot's (previously SNH 2017, updated 2025) provide recommended survey methodologies for the assessment of avian populations within and adjacent to onshore wind farms. Survey methodologies utilised for ornithological surveys are outlined in the ornithological baseline report. Please note as surveys were completed before the updated guidelines in 2025, survey methodology follows SNH 2017 guidance.

Two years of ornithological surveys are recommended by the SNH guidelines, unless it can be clearly demonstrated that a single year of data is sufficiently robust and appropriate for assessing the potential impacts of the proposal. A total of four years of ornithological survey has been undertaken between 2019 - 2023 with additional survey effort for winter roosting hen harrier in 2024 - 2025.

Full survey details, dates of each survey, details of surveyors and any limitations to these surveys are outlined in the dedicated ornithology technical report.

3.4.3. Mammals

Habitat suitability and field signs surveys for badger (*Meles meles*), otter (*Lutra lutra*), Irish hare (*Lepus timidus hibernicus*), red squirrel (*Sciurus vulgaris*), pine marten (*Martes martes*), and other mammals was undertaken 05 and 06 March 2025 and 27 March 2025. Full mammal survey details can be found in the Technical Mammal survey report. The only mammal relevant to Appropriate Assessment is Otter, which is listed as a QI for River Moy SAC (Site Code: [002298]).

3.4.3.1. Bats

There are no QIs for bat species within SACs located in the ZoI. Bat surveys were completed during the 2023 active bat season in line with NatureScot's '*Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*' (2021). These have provided a robust assessment of potential impacts based on relative levels of bat activity. As there are no SACs with bats listed as a QI within the ZoI of this project, this species are no longer discussed as part of the Appropriate Assessment and are referred to within the EIAR Biodiversity Chapter 5.

3.4.4. Aquatics

The Proposed Development site is hydrologically linked to the River Moy SAC via the Owengarve River, located within the northern section of the Proposed Development site (Figure 4). The River Moy SAC is designated for White-clawed crayfish (*Austropotamobius pallipes*), Sea lamprey (*Petromyzon marinus*), Brook lamprey (*Lampetra planeri*), Atlantic salmon (*Salmo salar*), and Otter (*Lutra lutra*).

It is possible that suitable spawning gravels for salmon occur in the upper catchment of the River Moy SAC, which includes the Owengarve River (IE_WE_34O030050) and its tributaries. Brook lamprey spawning habitat also has the potential to occur in the Owengarve River and tributaries; however, it is unlikely that Sea Lamprey will occur in these reaches due to their nature of spawning in lower reaches of large watercourses. White-clawed crayfish reported range includes the Owengarve catchment, and their reported distribution is in the lower reaches of the Owengarve catchment and River Moy catchment according to Article 17 reporting (NPWS, 2025).

The south of the Proposed Development is hydrologically linked to Tullaghanrock Bog SAC, Callow Bog SAC and Lough Gara SPA via the Fallsollus Stream and the River Lung. These watercourses link the Proposed Development site to Lough Gara, which is outside the current range for salmon. However, these watercourses are within the current range and distribution for white-clawed crayfish and brook lamprey according to Article 17 reporting (NPWS, 2025).

3.4.4.1. Water Quality

Water quality sampling was conducted on 25 and 26 September 2024 and 10 October 2024. Water samples were collected in 1 litre pre-sterilised sampling bottles and rinsed with river water before the sample was taken. Water samples were taken from just below the surface, ensuring that the riverbed was not disturbed during sampling. Once sample bottles were filled, they were transported to an accredited laboratory for analysis within the recommended holding time for the selected water quality parameters. Further details are presented in the Aquatics baseline report.

Q-value assessments show that survey sites along the Owengarve River scored a Q3-4 ("Slightly Polluted"), indicating Moderate WFD status. The most recent WFD assessment, carried out in 2022 by the EPA, resulted in a High WFD status for this section of river (Owengarve (Sligo)_010).

The results of the Q value assessments in the Lung River survey sites ranged from Q3-4 ("Slightly polluted") to Q4 ("Unpolluted"). The most recent WFD assessments completed by the EPA in 2023, resulted in Good WFD status for this section of river (Lung_050).

A total of 16 macroinvertebrate taxa were recorded within the Study Area, ranging from 4-12 taxa per site. Macroinvertebrates were grouped according to their sensitivity to organic pollution (Toner *et al.*, 2005). The majority of survey sites were dominated by Group C (tolerant) taxa, while Group A (pollution-sensitive) taxa were present in all but one kick sample assessed (Site 1).

The Q-value results provided, together with the basic water quality parameters obtained (e.g. pH), suggest that these waterbodies are affected by slight levels of pollution. Altered channel morphology at Site 1, resulting in mesohabitat dominated by a depositing glide, may explain the lack of Group A taxa. Pollution episodes arising from agriculture/forestry/turbary may be having some effect on the water quality within the sites assessed, resulting in "Slightly Polluted" status. Site 5 had the highest taxon richness with 13 taxa recorded.

3.4.4.2. Fish Habitat

Walkover habitat surveys were conducted at six separate locations along the Owengarve River on 25 and 26 September 2025. The river flow at the time of survey was moderate and the instream habitat remained largely visible. Further details of the surveys can be seen in Aquatics baseline report.

The methodology applied to the habitat survey follows that outlined by Hendry & Cragg-Hine (1997). The fish habitat surveys placed particular emphasis on the river's suitability to support salmonids and

lamprey. The sections surveyed in the Owengrave River were approximately 250 m long and ranged from approximately 1 - 3.5m wide. The channels were sparsely vegetated instream with occasional occurrence of bryophytes and *Callitriche* sp. Shading was occasional and provided by hawthorn (*Crataegus monogyna*) and willow (*Salix* sp.), with the riparian vegetation consisting of nettle (*Urtica dioica*), bramble (*Rubus fruticosus*) and tall herbs.

Overall, salmonid habitat was considered poor. Much of the fish habitat was characterised by glide and riffle sections with very few mixed juvenile (fry/parr) habitat and limited potential for salmonids was observed. The substrate consisted of cobble and boulder in the upper sections. Overall, the assessed reaches were considered to have poor suitability for salmonid due to the lower gradient and slower flows. Lamprey habitat was poor across all survey sites in the Study Area. Suitable spawning habitat by way of finer, unbedded gravels for the creation of redds, and finer sediment (silt) accumulations suitable for larval (ammocoete) settlement were absent from all sites surveyed. Records available for lamprey species in the Moy Killala catchment showed that larval *Lampetra* spp. were present at index sites approximately 20km downstream of the Study Area in 2021 (Gallagher *et al.*, 2022). Overall Eel habitat quality was considered typically moderate given the general lack of deeper pools and accessible instream refugia. Given the life history of European eels, even sub-optimal (e.g. drainage channel or high-energy sites) may be utilised by the species as seasonal migration routes (i.e. adult migration seawards, usually from September/October onwards).

Salmonid and lamprey habitat was considered largely unsuitable, as such, in the context of the project, these features are considered to be of local importance (higher value). While there is limited suitability in the areas assessed, these waterbodies are likely to hold smaller fish and species such as minnow (*Phoxinus phoxinus*) and three-spined stickleback (*Gasterosteus aculeatus*) and other coarse fish which are important components of the aquatic food web and for top level predators such as kingfisher (*Alcedo atthis*) and otter (*Lutra lutra*).

3.4.5. Survey limitations

No survey limitations were noted for the habitat surveys.

During ornithology surveys, there were no significant limitations on the data gathered or approaches taken. There were some minor limitations, however this did not affect the overall robustness of the data. Vantage point survey in non-breeding season 2019 - 2020, survey hours at VP3 were 34.45, being 1 hour, 15 minutes short of the recommended 36 hours per VP. This does not represent a serious limitation. Due to the length of survey period (5 years), digital recording methods for collecting data in the field were updated and surveyors working on the project changed over time. During non-breeding season winter walk over surveys in 2022 – 2023, two surveys were subject to data corruption and unusable. Additional surveys remedied this potential data loss.

3.5. Appropriate Assessment Screening

The approach taken in preparing the AA Screening Report is summarised as follows:

- Identify Natura 2000 sites within the potential ZOI of the Proposed Development;
- Identify the QI of the Natura 2000 sites and review their conservation objectives;

- Review whether there is potential for QIs to be affected by the Proposed Development based on information such as the vulnerabilities of the Natura 2000 site, proximity to the Site and the nature and scale of the works associated with the Proposed Development;
- Consider the likelihood of the identified potential impacts, in the absence of mitigation, occurring based on the information collated and professional judgement;
- Consider the likelihood of cumulative effects arising from the Proposed Development in combination with other plans and projects; and
- Identify the likelihood of significant effects on Natura 2000 sites occurring as a result of the Proposed Development.

The approach to appraising likely significant effects of the Proposed Development adopted in this report adheres to the DEHLG's 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities' (2009) which state:

"If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). Screening should be undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no impact."

A significant effect is defined in paragraph 49 of the Waddenzee Case C-127/02³ as follows:

"..... pursuant to the first sentence of Article 6(3) of the Habitats Directive, where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site. The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project."

The likelihood of significant effects occurring as a result of the Proposed Development is established in light of its type and scale, the location of the Proposed Development with respect to Natura 2000 sites with an identified S-P-R link, and the QIs and conservation objectives of those Natura 2000 sites.

3.6. Cumulative Effects

The CIEEM's 'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine' (2024) state that "cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location". Therefore, although a proposed development may not result in significant effects on its own, it could still have the potential to result in significant effects when considered in-combination with other plans or projects (OPR, 2021).

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62002CJ0127>

In the case of projects, the OPR Guidelines (2021) require that, in the case of projects, the examination of cumulative effects must consider:

- *“Projects completed;*
- *Projects approved but not started or uncompleted;*
- *Projects proposed, i.e., for which an application for approval or consent has been made, including refusals subject to appeal and not yet determined;*
- *Proposals in adopted plans, and*
- *Proposals in finalised draft plans formally published or submitted for consultation or adoption.”*

A planning search for projects with a potential cumulative impact was undertaken by the EIA Co-ordinator. Proposed projects, existing projects, permitted projects and existing projects over the last 10 years (01 January 2016 onwards) were identified for cumulative impacts and are included in Table 2.

Table 2. Plans and projects considered in the assessment of cumulative effects

Development	Planning Register Reference	Development Description	Status
Hanly Quarries, County Roscommon	08/9 (An Coimisiún Pleanála Reference PL20.229770), 05/872, 08/1217, 08/474, 20/310 (An Coimisiún Pleanála Reference ABP-311614-21), 21/668, 22/17, 22/165 (An Coimisiún Pleanála Reference ABP-313866-22)) and 23/129 (An Coimisiún Pleanála Reference ABP-317461-23)	Quarry and all associated quarrying plant and machinery	Existing
Harrington Concrete and Quarries, County Mayo	83/1316, 88/69, 97/165 (An Coimisiún Pleanála Reference PL16.105239), 99/1888 (An Coimisiún Pleanála Reference PL16.127156), 00/1596 04/1843, 24/403, 24/542 and 25/60088	Quarry and all associated quarrying plant and machinery	Existing
Westlands Sand Quarry, County Mayo	00/3017	Quarry and all associated quarrying plant and machinery	Existing
Largan Hill Wind Farm, County Roscommon	94/582	9 no. wind turbines and all associated infrastructure	Existing
Curlew Energy Wind Farm, County Roscommon	21/595 (An Coimisiún Pleanála Reference ABP-314120-22)	2 no. wind turbines and all associated infrastructure	Permitted
Natural Forces Renewable Energy Wind Turbine, County Roscommon	23/60142 (An Coimisiún Pleanála Reference ABP-319800-24)	1 no. wind turbine and all associated infrastructure	Permitted
Roosky Wind Farm, County Roscommon	03/341, 03/1400, 07/2255, 11/3055 and 13/3005	2 no. wind turbines and all associated infrastructure	Existing

Grady Joinery Wind Turbine, County Mayo	11/413 (An Coimisiún Pleanála Reference PL16.240083) and 18/222	1 no. wind turbine and all associated infrastructure	Existing
Riverstown Locally Owned Wind Turbine, County Sligo	23/60288 (An Coimisiún Pleanála Reference ABP-320302-24)	1 no. wind turbine and all associated infrastructure	Permitted
Carrigeen Wind Farm, County Roscommon	An Coimisiún Pleanála Reference ABP-322258-25	14 no. wind turbines and all associated infrastructure	Proposed
Ballyfeeny Green Energy Project, County Roscommon	Planning Register Reference 25/60446 (An Coimisiún Pleanála Reference ACP PL20.502020)	6 no. wind turbines and all associated infrastructure	Permitted
Battery Energy Storage System, County Roscommon	26/60302	Battery energy storage system and all associated infrastructure	Proposed
N5 Upgrade Works	(An Coimisiún Pleanála Reference HA20.300493)	N5 Ballaghaderreen to Scramoge Road Development	Permitted
North Connacht 110kV Project	An Coimisiún Pleanála Reference ABP-313724-22	59km of underground electricity line and associated works	Permitted
Overhead Electricity Lines	Various	110kV overhead electricity line	Existing
Electricity Substations	Various	110kV and 38kV substations and all associated infrastructure	Existing
Agricultural Developments	Various	Various	Existing, Permitted and Proposed
Residential Dwellings	Various	Various	Existing, Permitted and Proposed
Commercial Forestry Plantations	-	-	Existing

3.7. Detailed Description of the Proposed Development

The project assessed within this EIAR comprises a wind farm, including all associated development works to accommodate its construction, installation, operation, maintenance and the export of electrical power to the national grid. This will include: -

- 3 no. wind turbines (T1-T3) with a hub height of 104m, a rotor diameter of 162m and an overall tip height of 185m;
- 7 no. wind turbines (T4-T10) with a hub height of 82m, a rotor diameter of 136m and an overall tip height of 150m;
- All associated turbine foundations and crane hardstanding areas;

- All associated underground electrical and communications cabling;
- Construction of approximately 4km of wind farm access tracks;
- Construction of 6 no. new site entrances and upgrade of 1 no. existing site entrance;
- 2 no. temporary construction compounds;
- 1 no. borrow pit which, when exhausted, will be utilised to permanently store excess excavated material;
- The storage, as required, of excavated material at dedicated spoil deposition areas;
- Felling of approximately 6.5ha hectares (ha) of forestry plantation to facilitate the construction and operation of wind farm infrastructure; and,
- All associated and ancillary site development, excavation, construction, landscaping and reinstatement work, including provision of site drainage infrastructure and environmental mitigation measures.

Off-site or secondary elements of the project which are included for assessment in this NIS and are included in the current SID planning application, include: -

- Temporary and permanent works to public roads along the turbine component haul route.

Off-site or secondary elements of the project which are included for assessment in this EIAR but are not included in the current SID planning application and will be subject to a separate licensing and/or consenting process, include: -

- A 110 kilovolt (kV) electricity substation and all associated electrical equipment; and the installation of c. 7km of underground electricity line to facilitate connection of the electricity substation to the existing 110kV electricity substation at Tonroe, Ballaghaderreen, County Roscommon.

3.8. Receiving Environment

3.8.1. Site Location

The Proposed Development site is located in north County Roscommon, c. 2km north of Ballaghaderreen (see Figure 3), c. 13km east of Charlestown (County Mayo) and c. 6km southwest of Gorteen (County Sligo). The wind farm will be located in the townlands of Largan, Boleysillagh, Cloonmeen, Toobrackan, and Tullaghanrock, County Roscommon.

The Proposed Development site is generally set in an upland area located between the towns of Ballaghaderreen (County Roscommon) to the south and Gorteen (County Sligo) to the north.

3.8.2. Surface Water

In the northern part of the Proposed Development, the Owengarve (SLIGO) 010 river goes through the site close to turbines T1, T2, T3, T4 and T6. This river is deemed to be 'At Risk' under the WFD of 'Good' status.

In the southern part of the Proposed Development, the Lung 050 river goes through the site close to turbines T7 and T9. This river is deemed to be 'At Risk' under the WFD and is of 'Moderate' status.

3.8.3. Groundwater

The Site lies on the Kilkelly Charlestown (IE_WE_G_0032) and the Curlew Mountains (IE_SH_G_073) groundwater bodies (GWBs), both of which were classified as 'Good' status in the WFD 2019-2024 cycle. The groundwater vulnerability of the site is a mixture of extreme and high vulnerability (EPA, 2026). The Curlew Mountains groundwater body intersects Lough Gara SPA as well as Tullaghanrock Bog and Callow Bog SACs.

3.8.4. Construction Phase

The construction phase is likely to last for approximately 15-18 months from commencement of enabling works through to the installation and commissioning of the turbines and ending with site reinstatement and landscaping.

The construction phase of the development will comprise a 6-day week with normal working hours from 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. It may be necessary to undertake works outside of these hours to avail of favourable weather conditions (e.g. during time of low wind speed to facilitate turbine installation etc.) or during extended concrete pours (e.g. where turbine foundation pours must be completed within 24-hours). Where construction activities are necessary outside of the normal working hours, local residents and the Planning Authority will receive prior notification.

No construction works are envisaged during the operation phase. Works during this phase will typically involve the routine inspection and servicing of the turbines and ancillary structures, as necessary. In exceptional circumstances there may be a requirement for more substantial works e.g. replacing a turbine blade, or gearbox/generator replacement. Intermittent maintenance of the wind farm site will be undertaken as necessary, including the substation, access tracks and hardstandings.

Further details of the construction phase and specific mitigation measures to be implemented are provided in each chapter of the associated EIAR as they relate to each environmental topic.

3.8.4.1. Site Entrances

A total of seven site entrances will be required to facilitate access to the Proposed Development site. Six will be new access points and one will comprise the upgrade of an existing agricultural entrance; with four entrances being from the L5501, two entrances from the L55018 and one entrance from an unnamed local road.

The construction of site entrances will be carried out by placing geotextile or geogrid within the defined entrance footprint followed by the placement of granular fill (rock) in compacted layers. Drainage features will be installed to manage runoff and prevent sedimentation of adjacent surface water channels. Visibility splays will be cleared, and temporary traffic management measures will be implemented during construction to ensure the safety of road users and construction personnel.

Following the delivery of turbine components, the site entrances will be reduced but will be reinstated such that they remain capable of accommodating abnormal loads in the event of a major component change-out during the operation phase of development. The reinstatement of the site entrances will

comprise the installation of post and rail fencing, gates and the planting of hedgerows (where appropriate and as advised by the ECoW. Hedgerows, where planted, will be appropriately located to allow for future growth while ensuring, at all times, that visibility splays are maintained during the operation phase.

3.8.4.2. Hardstanding Areas and On-Site Access Tracks

The areas of hardstanding for crane operations and on-site access tracks will generally be constructed as follows:

- Underlying soil and peat material will be excavated as required;
- Rock/stone will typically be laid on a geotextile mat and compacted in layers to an appropriate depth. The sub-layers of the hardstanding areas will be constructed of rock/stone extracted from the borrow pit insofar as possible, with the upper layer comprising capping material imported from a local quarry (quarries). All such areas of hardstanding will be permeable to avoid significant volumes of surface water run-off; and,
- Areas of temporary hardstanding (for turbine component storage and crane assembly) will be reinstated following the construction phase by removing aggregates, placing excavated material and allowing the areas to revegetate naturally. The crane hardstandings and on-site access tracks will be retained during the operation phase to facilitate access for maintenance personnel and in the event of a major component change-out.

Short sections of access track adjacent to each crane hardstanding will be constructed via similar methodology.

The majority of access tracks at the project site will be constructed via 'floated' technique, using the following methodology: -

- Rock/stone will typically be laid on a geotextile mat and compacted in layers to an appropriate depth. The sub-layers will be constructed of rock/stone extracted from the borrow pit insofar as possible, with the upper layer comprising capping material imported from a local quarry (quarries). All such areas will be permeable to avoid significant volumes of surface water run-off; and,
- Where access tracks are required to cross drainage ditches, these will be piped or spanned with an appropriate bridging structure. At the crossings of the watercourses to the east of turbine T4 and east of turbine T9 respectively, bottomless culverts or clear-span structures will be installed (subject to final post-consent detailed design) to prevent any interference with the hydraulic capacity of the watercourses.

3.8.4.3. Temporary Construction Compounds & Equipment Storage Area

The compound base, which will be placed on a geotextile mat, will be made up of well graded aggregates, compacted as necessary. A designated waste management area and fuels and chemicals storage area will be provided within the compounds along with site offices, parking, staff welfare facilities and equipment storage areas. The compounds will be fenced with temporary security fencing to restrict access. Following the completion of the construction phase, the compounds will be fully reinstated involving the removal of crushed stone and underlying geotextile, spreading of excavated material (as required) and allowing the areas to revegetate naturally.

3.8.4.4. Chemical Storage and Refuelling

Storage areas for oils, chemicals and fuels will comprise bunded areas of hardstand of sufficient capacity within the temporary construction compounds. Bunds will have a watertight roof structure and will be supplied by a licensed manufacturer to enable adequate safe storage for the quantities of material required. An adequate supply of spill kits will be readily available in order to clean up any minor spillages should they occur. A hydrocarbon interceptor will be installed within the surface water drainage system during the construction phase to trap any hydrocarbons that may be present. As part of the design process, a 50m buffer has been observed around all surface water features and no fuel/chemicals shall be handled or stored within this zone.

From the construction compounds, fuel will be transported to works areas by a 4x4 with a double skinned bowser with drip trays under a strict protocol and carried out by suitably trained personnel. The bowser/4x4 will be fully stocked with spill kits and absorbent material, with delivery personnel being fully trained to deal with any accidental spills. The bowser will be bunded appropriately for its carrying capacity. As above, a 50m buffer will be observed around all surface water features and no refuelling will be permitted within this zone.

3.8.4.5. Construction Waste Management

Waste will be generated during the construction phase, and the main items of anticipated construction waste are as follows:

- Hardcore, stone, gravel, concrete, plaster, topsoil, subsoil, timber, concrete blocks and miscellaneous building materials;
- Waste from chemical portaloo toilets;
- Plastics; and
- Oils and chemicals.

Waste disposal measures proposed include:

- On-site segregation of all waste materials into appropriate categories including, for example, topsoil, bedrock, concrete, bricks, tiles, oils /diesels, metals, dry recyclables e.g. cardboard, plastic, timber;
- All waste materials will be stored in skips or other suitable and sealed receptacles in a designated area of the construction compound;
- Wherever possible, left over materials (e.g. timber off-cuts) and any suitable demolition materials shall be re-used on-site;
- Uncontaminated excavated material (rock, topsoil, subsoil, etc.) will be re-used on-site in preference to importation of clean inert fill;
- Bedrock may be encountered during foundation excavation. If bedrock is encountered, it will be utilised for infill during construction;
- All waste leaving the site will be transported by permitted contractors and taken to suitably licensed or permitted facilities and will be recycled, recovered or reused, where possible; and,

- All waste leaving the site will be recorded in accordance with legal requirements and copies of relevant documentation maintained.

3.8.4.6. Construction Traffic

Vehicular traffic required for the construction phase is likely to include:

- Articulated trucks (HGVs) to bring initial equipment onto site and later to bring the turbine components, electrical cables, steel reinforcement for foundations, anemometer mast, and ancillary equipment;
- Tipper trucks and excavation plant involved in site development and excavation works;
- Cranes to erect the turbines; and,
- Miscellaneous vehicles and handling equipment, including vehicles associated with the construction workforce.

Effects from construction traffic could include temporarily increased local traffic levels and traffic noise. Construction traffic on the local road network will be managed in accordance with a Traffic Management Plan and the requirements of the Planning Authority. This may include the installation of temporary road signage and traffic lights, as appropriate. Noise arising from construction traffic would be localised, temporary and of a short-term duration.

Deliveries of turbine components will take place at times to avoid peak traffic periods and are likely to occur during night-time hours. All abnormal loads will be accompanied by an advance escort vehicle.

Traffic mitigation measures will be implemented during the construction phase, as follows:

- Signage at site entrances giving access information;
- Temporary traffic restrictions kept to minimum duration and extent;
- Diversions put in place to facilitate continued use of roads, where restrictions have to be put in place (e.g. along the underground electricity line route);
- Construction traffic management, including one-way systems where possible and strictly enforced speed limits;
- Provision of a designated person to manage access arrangements and act as a point of contact to the public; and,
- All temporary road alterations and public road upgrades to be carried out in full consultation with the respective planning authorities.

3.8.5. Operation Phase

The Proposed Development, including the wind turbines, will be operational for 40-years. Other than routine maintenance and monitoring, there will be no other activities on site. Site activities will continue as normal. On average, the project will be visited on one-two occasions per week by a light commercial vehicle for maintenance purposes. In exceptional circumstances there may be a requirement to replace a turbine component, which would require more substantive works on site.

Waste generated during the operation phase (for example, cooling oils, lubricating oils and packaging from spare parts or equipment) will be removed from site and reused, recycled or disposed of in accordance with best-practice and all regulations in a licensed facility.

Further details on the operation phase and specific mitigation measures are provided in each chapter of the associated EIAR as they relate to each environmental topic.

3.8.6. Decommissioning Phase

The proposed operation phase of the project is 40-years. At the end of this period, several options will exist:

- Continued operation of the existing turbines;
- Refurbishment/replacement of the turbines and continued operation; and
- Decommissioning of the wind farm.

Any further operation beyond 40-years would be subject to a further planning application and EIA. In its scope, the associated EIAR assumes full decommissioning of the project will take place after 40-years. All structures above ground level shall be demolished and removed from the site for reuse/recycling; however, access tracks may be retained for continued use by landowners for agricultural purposes. Drainage/surface water management infrastructure will likely be decommissioned; however, where it is assessed to be serving an ongoing or wider beneficial drainage function, it shall remain *in situ*.

A Decommissioning Management Plan will be agreed with the Planning Authority in advance of decommissioning works. Further details on the decommissioning phase and specific mitigation measures are provided in each chapter of the associated EIAR as they relate to each environmental topic.

3.8.6.1. Wind Turbines

Wind turbines are comprised of the tower, nacelle and blades which are modular items that can be disassembled. This will involve a process which will be similar to the construction phase, but in reverse. If the turbines are to be sold on or reused elsewhere, they shall be removed from site by specialist vehicles similar to those used during their transportation to site. If wind turbine components are not to be reused, then they shall be scrapped by the removal of all components to an approved waste handling/recycling facility where components will be sorted according to their material of construction. Turbine components are mainly inert steel/ferrous metals which can be reused or recycled.

The turbine blades are constructed of fibreglass, which is not readily re-used or recyclable, with research being undertaken to find an alternative use for the fibreglass, with a number of emerging innovations for fibreglass recycling including the re-purposing of fibreglass for other civil engineering projects (e.g. as a component in concrete production, roofs for social housing and incorporation to the construction of electrical powerline masts/structures.) Given the extensive research being undertaken to find a means of recycling decommissioned wind turbine blades, the associated EIAR assumes that, at the proposed date of decommissioning, all blades will be fully re-purposed and that no disposal, to landfill, will be required.

3.8.6.2. Turbine Foundations

Wind turbine foundations shall be grubbed up to a depth of 1 m below ground level using conventional mechanical diggers. Exposed rebar and holding down bolts shall be burned off and removed off site to an approved waste handling facility for recycling or disposal. The broken concrete can be processed to provide an aggregate material to be used elsewhere in construction projects. Alternatively, it may be used on site as an inert fill to make up levels as part of a wider decommissioning/restoration plan, reducing the need for the importation of material onto the site. Excavations shall be backfilled with excavated material and allowed to revegetate naturally.

3.8.6.3. Hardstands & Access Tracks

Hardstands and access tracks shall be removed with all aggregates and geotextile exposed and removed from site. As the hardstands and access tracks will be of floated construction, substantial excavations are not assessed as likely to be required and minimal earthworks are likely to be required. Additional inert material derived from decommissioning activities in other areas of the site may be used if required. Once the area has been profiled to match the surrounding ground, if required, the area shall be allowed to revegetate naturally.

3.8.6.4. Transformers & Cabling

The decommissioning of transformers will depend entirely on any future use of the wind turbine. If the turbine is to be used elsewhere, the transformer will be removed from site for refurbishment and future use. If the turbine is to be scrapped, the transformer will be removed to an approved waste handling/recycling facility and stripped of any useable parts with the remainder being recycling.

Excavations shall be carried out to expose any cables buried in trenches to a depth of 1 m below ground level and the cable removed. The majority of cables used in wind farm construction contain a core of either copper or aluminium. Both of these materials can be recycled. Any cable off-cuts shall be removed off site to an approved waste handling facility where the cores shall be recycled and the remaining material shall be disposed of at an approved facility. Excavations carried out to expose cables shall be backfilled with excavated material and allowed to revegetate naturally.

3.8.6.5. Electrical Substation & Electricity Line

The electricity substation and electricity line will, once operational, be 'taken-in-charge' by EirGrid/ESB Networks, who will operate and maintain the infrastructure as part of the national electricity network. As a result, the substation and electricity line do not have a specified operation period and may continue to be operated following the decommissioning of the wind farm (i.e. after its 40-year operation period). However, for the purposes of the associated EIAR, full decommissioning of the substation and grid connection have been assumed.

The decommissioning of the substation will involve the strip-out and removal of steel, conductors, switches, transformer and other materials and equipment that can be reconditioned and reused or sold as scrap. A soft strip of the building shall ensure that all fixtures and fittings are removed prior to demolition.

Demolition of the building shall take place using conventional methods. Foundations and building services shall be grubbed up to a depth of 1 m below ground level. The demolition waste shall comprise mainly rubble (bricks, block, broken concrete, plaster etc.) and timber. Rubble can be

processed to provide an aggregate material to be used elsewhere in construction projects. Alternatively, it could be used on site as fill elsewhere on the subject site.

Timber and other waste shall be segregated according to material type with a view to recycling where possible or disposal. All demolition materials which cannot be reused on site shall be removed off site to a licensed waste handling facility for recycling or disposal. Excavations shall be backfilled with suitable material, soiled over and seeded out or allowed to revegetate naturally.

Decommissioning of the electricity line will involve the removal of the cabling from the ducting; however, the ducting will remain *in situ* to avoid further excavations. The majority of cables used in wind farm grid connections contain a core of either copper or aluminium, both of which can be recycled. All cables will be removed to an appropriate licensed facility for recycling; while the ducting will remain *in situ* to avoid the requirement for further excavations.

3.9. Field Surveys

3.9.1. Habitat

Habitat surveys were conducted on the Proposed Development site between 25 – 28 September 2023, with a further survey on 20 March 2025 to update the initial surveys. Habitats recorded on Site are described here with relevant Fossitt (2000) code in brackets. A list of the habitats present on site are in Table 3.

Table 3. List of habitats recorded on- site (Fossitt, 2000)

Habitat	Fossitt Code	Habitat	Fossitt Code
Spoil and bare ground	(ED2)	Conifer plantation	(WD4)
Improved grassland	(GA1)	Bog woodland	(WN7)
Dry-humid acid grassland	(GS3)	Scrub	(WS1)
Wet grassland	(GS4)	Hedgerows	(WL1)
Upland blanket bog	(PB2)	Treelines	(WL2)
Cutover bog	(PB4)	Buildings and artificial surfaces	(BL3)
(Mixed) broadleaved woodland	(WD1)	-	-

3.9.1.1. Peatland Habitats

Several intact high-bog fragments remain (c. 16 ha) within the peatland component of the Study Area (raised bog- PB1). These areas support deep peat and support the typical range of plant species associated with raised bog vegetation. Peat cutting has both recently and historically been undertaken surrounding these deep peat areas, and these intact habitats are at risk of further loss dependent upon future land management. Where intact, this PB1 habitat corresponds to the annexed priority habitat ‘*active raised bog’ [7110] and the historically cutover, naturally regenerating mosaic (PB1/PB4) similarly corresponds as a mosaic of the annexed habitats 7110 priority* / ‘degraded raised bog capable of natural regeneration’ [7120] with areas of ‘depressions on peat substrates of the Rhyncosporion’ [7150].

One area of quaking bog (c. 1.5ha) was identified within the Study Area. This habitat type is an extremely wet, actively peat-forming system with a combination of floating mats of peat-forming vegetation and saturated, spongy or quaking peat.

Wet heath consists of vegetation with at least 25% cover of dwarf shrubs on peaty soils and typically occurs on shallow peats (15-50cm). wet heath vegetation can range widely in quality from very species-poor derivatives dominated by *Molinia caerulea*; to more species-rich variations aligning with the annexed habitat ‘northern Atlantic wet heaths with *Erica tetralix* [4010].

Poor fen and flush (PF2) are considered to be acidic, non-peat forming examples of PF2 dominated by rushes *Juncus effusus*, *J. articulatus* and *J. acutiflorus* with sedges including *Carex echinata* and *Carex nigra*, limited dwarf shrubs and an extensive bryophyte understory dominated by hair-cap moss *Polytrichum commune* and *Sphagnum fallax*.

These areas (c. 1.2 ha) were typically noted to occur within drains or where cutover habitat on more sloped ground was resulting in water movement and more concentrated surface flows. This habitat on its own does not align with an annexed habitat, however, in the case where it has been identified within a larger unit of active or naturally regenerating bog, this habitat is considered as an integral component of the wider raised bog habitat.

3.9.1.2. Grassland Habitats

The majority of the grasslands within the Study Area are agricultural in nature and range from intensively managed, seeded and improved pasture to more semi-natural grasslands including GS1, GS2 and GS4.

The areas of improved agricultural grassland (GA1) are considered highly modified examples with limited sward diversity and are regularly sown and/or fertilised.

Smaller areas of dry calcareous and neutral grassland have been identified where rocky deposits have created more free-draining soils, these areas are less intensively managed.

Areas where little/no management occurs have resulted in dry meadow and grassy verge habitat (GS2), this habitat is noted to occur predominantly as roadside verges and within less-intensively managed fields.

Several areas of species poor GS4 habitat totalling c. 23.83 ha were identified across the Study Area. These areas are grazed and predominantly used for agricultural purposes. One larger area of GS4 habitat had been recently planted with forestry. Following the assessment, it was considered that this field aligns with the annexed habitat ‘*Molinia* meadows on peaty soils’ [6410]. This habitat

corresponds most closely to the NVC vegetative community M23 - *Juncus effusus/acutiflorus* – *Galium palustre* rush-pasture.

3.9.1.3. Woodland / Hedgerow and Scrub

A large, central area of the Study Area (c. 50 ha) has been planted with mature conifer plantation, with one area noted to be clear-felled.

As typical of the agricultural and rural nature of the landscape the Study Area contains a network of small inter-connected hedgerows and treelines, many of which provide a peripheral border and screening to the peatland habitats present. Areas of naturally regenerating scrub habitat and coniferous samplings were observed encroaching into the drier margins of the cutover bog habitat.

3.9.2. Ornithology

Waterbirds

Across all four nonbreeding seasons, the site supported a consistent assemblage of red and amber listed wetland birds, primarily using the 500 m buffer for flight activity, roosting, and winter feeding, with limited evidence of prolonged use by most species. In the non-breeding season, the site mainly functions as an over flight corridor with occasional feeding/roosting behaviour. Golden plovers are present, sometimes in larger flocks, snipe utilize wetland for feeding. In breeding season, the site supports breeding snipe in the earlier survey years, and occasional breeding mallard. Most other species were passage migrants or transiting birds, with no sustained breeding activity.

Raptors

Across all nonbreeding seasons, the site supported a consistent assemblage of raptors, with kestrel and hen harrier forming the core of activity. Hen harrier use was strongly linked to a regular communal winter roost within 2 km of the site. Two locations are used interchangeably depending on metrological or disturbance conditions. Other raptors (merlin, sparrowhawk, buzzard) occur in low numbers, typically as transient individuals. Breeding-season raptor use was generally low. Kestrel is the only species regularly using the site during the breeding period, with occasional fledged young indicating suitable foraging habitat. Other raptor species (hen harrier, merlin, buzzard, sparrowhawk) occur at low levels as transient individuals rather than breeding birds.

Passerine

Across the nonbreeding season site use was limited, with meadow pipit being the most regularly encountered species of conservation concern. Other species (grey wagtail, yellowhammer, skylark, goldcrest) occurred only occasionally throughout. In breeding season, the site supports several breeding passerines of conservation concern, most notably meadow pipit and skylark, with repeated evidence of breeding for goldcrest, willow warbler, and swallow. The habitat is also suitable for red grouse, although nests were not detected.

3.9.3. Mammal

Badger

Two active badger setts (one annex and one outlier) were confirmed within the Study Area.

Otter

Two otter holts were recorded: one assessed as active and one inactive.

Pine Marten (General Site activity)

Pine Marten were confirmed to be using the Study Area for foraging. No breeding or resting sites were identified for this species.

3.9.4. Aquatics

Water Quality (Q-values)

The Owengarve River section north of the Proposed Development site was assessed as Moderate (Q3–4), which is lower than recent EPA classifications of High WFD status for this waterbody. Lung River tributaries ranged from Moderate (Q3–4) to Good (Q4), aligning broadly with EPA assessments of Good WFD status.

White-clawed Crayfish

A single, white-clawed crayfish was recorded during hand search surveys in a Lung River tributary. No crayfish were detected in baited traps, and no secondary evidence (e.g., prey remains in otter spraint) was found. Lower reaches of the Owengarve and Lung Rivers offer some suitable habitat, but upper reaches are considered largely unsuitable due to high water velocities, shallow depths, and variable flows. Recent crayfish plague outbreaks in the River Moy and Upper Shannon catchments may have spread upstream and contributed to population declines in the Owengarve and Lung systems.

Salmonids and Lamprey

Habitat suitability for salmonids and lamprey within the surveyed section was limited. IFI records indicate no salmonid or lamprey presence in the Owengarve or Lung Rivers. Populations of salmonids and lamprey larvae (ammocoetes) occur downstream in the Moy catchment, at distances of 20–30km from the Study Area. No salmonids are recorded 30km downstream of the Lung River, but brook lamprey has been recorded 25km downstream.

3.9.5. Invertebrates

A breeding population of marsh fritillary are present near T10, where four larval webs were recorded during surveys in August 2024.

4. APPROPRIATE ASSESSMENT SCREENING

This section of the report identifies the potential ZOI of the Proposed Development, provides information on the Natura 2000 sites within the identified ZOI, and sets out the potential impacts and effects and the likelihood of significant effects.

4.1. Establishing the Zone of Influence

The first step in identification of relevant Natura 2000 sites is to determine the potential ZOI of the Proposed Development. Natura 2000 sites within close proximity to the Proposed Development are researched to check if there is any ecological connectivity to the Proposed Development site. This is completed using the Source – Pathway – Receptor (S-P-R) model. When the ZOI of the Proposed Development has been determined, Natura 2000 sites within this area can be identified and the potential for these sites to be affected by the Proposed Development can be evaluated by considering:

- Scale and type of the Proposed Development;
- Proximity to the Proposed Development;
- QIs of Natura 2000 sites; and
- Ecological⁴ and Landscape⁵ connectivity.

⁴ Connectivity is defined as a measure of the functional availability of the habitats needed for a particular species to move through a given area. Examples include the flight lines used by bats to travel between roosts and foraging areas or the corridors of appropriate habitat needed by some slow colonising species if they are to spread (CIEEM, 2024).

⁵ Landscape connectivity is a combined product of structural and functional connectivity, i.e., the effect of physical landscape structure and the actual species use of the landscape (Kettunen *et al.* 2007)

4.2. Description of Natura 2000 Sites within the Zone of Influence

7 No. Natura 2000 sites were identified, as falling within the ZOI:

- Bellanagare Bog SPA [004105];
- Blacklieve Mountains and Keishcorran SAC [001656];
- Callow Bog SAC [000595];
- Lough Arrow SPA [004050];
- Lough Gara SPA [004048];
- River Moy SAC [002298]; and
- Tullaghanrock Bog SAC [0002354].

The Proposed Development site, the electricity substation site and route of the underground electricity line, and the turbine delivery route does not occur within any sites designated as a SAC or SPA. The nearest protected sites are Tullaghanrock Bog SAC [00234], Callow Bog SAC [000595], and River Moy SAC [002298]. Tullaghanrock Bog SAC, located c. 3km south-east of the Proposed Development site, is the closest Natura 2000 site.

The Natura 2000 sites identified as being within the potential ZOI of the Proposed Development are described in the following sections. The descriptions of the Natura 2000 sites have been prepared and summarised using the supporting information available on the NPWS Website.

4.2.1. Bellanagare Bog SPA

Bellanagare Bog SPA [004105] is a large bog located approximately 11km southeast of the Proposed Development site boundary. There is no hydrological connectivity between this SPA and the Proposed Development Site.

Bellanagare Bog SPA has a SCI for Greenland white-fronted goose (*Anser albifrons flavirostris*). This SPA conservation objective sets out to restore the favourable conservation condition of Greenland white-fronted goose within the SPA.

This SPA overlaps with Bellanagare Bog SAC [Site code: 000592]. The SAC has QIs for active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120] and depressions on peat substrates of the Rhynchosporion [7150]. The SAC conservation objectives include restoring the favourable conservation condition of active raised bogs within the SAC. There is no specific conservation objective for degraded raised bogs still capable of natural regeneration due to it being inherently linked to the conservation objective of the active raised bog. There is also no specific conservation objective for depressions on peat substrates of the Rhynchosporion as this QI is an integral part of good quality active raised bog. These SAC conservation objectives should be used in conjunction with the SPA conservation objectives.

The NPWS Site Synopsis for this SPA provides the following description:

"...Bellanagare Bog SPA [004105] is a large bog located c. 6km north-north-east of Castlerea in Co. Roscommon. It is classified as a western, or intermediate, raised bog as it displays features of both raised bog and blanket bog. The bog is underlain by muddy Carboniferous limestone with a low

permeability. The sub-soil is predominantly of clayey limestone till. The site lies in an upland area at the top of a surface catchment divide. The surface of the bog is undulating, and the peat is concentrated on ridges, with flushes occurring in between. A number of streams, including the Frances River, rise on the site..."

This site was designated as an SPA as it was known to be utilised by part of an internationally important Greenland White-fronted Goose population. The geese appear to have since abandoned the peatland sites in favour of grassland sites elsewhere. Greenland White-fronted Goose is the only QI for this SPA. In the past, the bog was used by wintering Greenland White-fronted Goose from the internationally important population that is centred on Lough Gara. However, the geese now feed mainly on intensively managed grassland and have not been recorded at the site in recent years.

4.2.2. Bricklieve Mountains and Keishcorran SAC

The Bricklieve Mountains and Keishcorran SAC [001656] are located in Co. Sligo, west of Lough Arrow and approximately 4km north-east of the Proposed Development site boundary. There is no hydrological connectivity between this SAC and the Proposed Development site.

This SAC has QIs including marsh fritillary (*Euphydryas Aurinia*) [1065], white-clawed crayfish (*Austropotamobius pallipes*) [1092], turloughs [3180], semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) [6210], lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510], and calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*) [8120]. Conservation objectives for turloughs, marsh fritillary, and white-clawed crayfish set out to maintain the favourable conservation condition of these Qis. Conservation objectives for semi-natural dry grasslands and scrubland facies on calcareous substrates, lowland hay meadows, and calcareous and calcshist screes of the mountains to alpine levels set out to restore the favourable conservation condition.

The NPWS Site Synopsis for this SAC provides the following description:

"...The Bricklieve Mountains and Keishcorran SAC [001656] are located in Co. Sligo, west of Lough Arrow and c. 6km north-west of the town of Boyle. The site is a large, isolated block of carboniferous limestone that reaches a height of approximately 300 m. Typical landscape features associated with a karst topography are present, including caves, dry valleys and limestone pavement. A striking feature of the Bricklieve Mountains is that they are cut into four slices by narrow rift valleys which run north-west and south-east. The walls of these valleys are vertical cliffs which vary between 10-30 m in height. During the last ice age retreating ice deposited morainic debris across the rift valleys. This helped to form lakes, which subsequently developed into bog. The dominant habitats on the site include upland grassland on peaty soil, blanket bog, heath, upland grassland on mineral soil and scrub woodland..."

The site is notable for supporting an excellent population of the scarce butterfly, Marsh Fritillary (*Euphydryas aurinia*), a species that is listed on Annex II of the Habitats Directive.

4.2.3. Callow Bog SAC

Callow Bog SAC [000595] is located approximately 4km north-east of the Proposed Development site boundary. The Proposed Development site is hydrologically linked to this SAC via the Fallsollus Stream and the River Lung.

This SAC has QIs for active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120] and depressions on peat substrates of the Rhynchosporion [7150]. The SAC conservation objectives include restoring the favourable conservation condition of active raised bogs within the SAC. There is no specific conservation objective for degraded raised bogs still capable of natural regeneration due to it being inherently linked to the conservation objective of the active raised bog. There is also no specific conservation objective for depressions on peat substrates of the Rhynchosporion as this QI is an integral part of good quality active raised bog.

The NPWS Site Synopsis for this SAC provides the following description:

“...Callow Bog SAC [000595] is located c. 7km north-west of Frenchpark, Co. Roscommon, in the townlands of Callow or Runnawillin, Cloonmagunnaun, Keelbanada, Creggan and Ratra. It is situated on the south-western shore of Lough Gara and is underlain by Carboniferous limestone. The site includes both areas of high bog and cutover. The high bog consists of five lobes dissected by roads and a stream. Overall, the high bog is relatively flat with slight slopes north to Lough Gara. Two wet areas with pools occur, and there are a number of tear pools to the north. The high bog also supports a very large central flush. The River Lung flows near the north-western boundary of the site and there is a low-relief drumlin to the northwest of the bog. To the south, the raised bog is surrounded by agricultural land.

Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (Sphagnum spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, Sphagnum lawns, flushes and soaks. Current land use on the site consists of peat-cutting along much of the bog margins, apart from the north-east where the presence of Lough Gara has curtailed access, and the bog margins are relatively intact. Afforestation has occurred on the high bog to the north of the site...”

4.2.4. Lough Arrow SPA

Lough Arrow SPA [004050] is located 17.5km northwest of the Proposed Development site boundary. There is no hydrological connectivity between this SPA and the Proposed Development site.

This SPA has SCIs including little grebe (*Tachybaptus ruficollis*) [A004], tufted duck (*Aythya fuligula*) [A061] and wetlands [A999]. The conservation objectives set out to restore the favourable condition of little grebe and tufted duck, and to maintain the favourable conservation condition of wetland habitats in Lough Arrow for the regularly-occurring migratory waterbirds that utilise these areas.

This SPA overlaps with Lough Arrow SAC [Site code: 001673]. The SAC has a QI for hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. [3140]. The SAC conservation objectives include restoring the favourable conservation condition of hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.

The Unshin River SAC [001898] is adjacent to this SPA has Qis for water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation [3260], semi-natural dry

grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) [6210], molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410], alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0], Atlantic salmon (*Salmo salar*) ([1106] and otter (*Lutra lutra*) [1355].

The SAC conservation objectives for water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation, Atlantic salmon and otter set out to maintaining the favourable conservation condition. The SAC conservation objectives for semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*), molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*), and alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) set out to restoring the favourable conservation condition.

Both of these SAC conservation objectives should be used in conjunction with the SPA conservation objectives.

The NPWS Site Synopsis for this SPA provides the following description:

“...Lough Arrow SPA [004050] is a large limestone lake situated almost entirely within Co. Sligo with a small section extending into Co. Roscommon. It is sheltered on three sides by hills and is the source of the Unshin River which flows north-westwards from its northern end. It has a relatively small catchment and is largely spring-fed. The average depth of water is 9 m (maximum 33 m). The lake is classified as a mesotrophic system. There is a well-developed submerged aquatic flora, with a notable charophyte community...”

The site is an SPA under the Birds Directive, of SCIs for the following species: Little Grebe and Tufted Duck. The Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of SCI for Wetland and Waterbirds. The occurrence of Whooper Swan [Annex I] of the Birds Directive is of note.

4.2.5. Lough Gara SPA

Lough Gara SPA [004048] is located on the Co. Sligo/Roscommon border 4km southeast of the Proposed Development site boundary. The Proposed Development site is hydrologically linked to this SPA via the Fallsollus Stream and the River Lung.

Bellanagare Bog SPA has a SCI for Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395] and whooper swan (*Cygnus cygnus*) [A038]. This SPA conservation objective sets out to restore the favourable conservation condition of Greenland white-fronted goose and whooper swan within the SPA.

This SPA is adjacent to Callow Bog SAC [000595]. Conservation objectives for the Callow bog SAC are listed in Section 4.2.3. These SAC conservation objectives should be used in conjunction with the SPA conservation objectives.

The NPWS Site Synopsis for this SPA provides the following description:

“...Lough Gara SPA [004048] is located on the Co. Sligo/Roscommon border south-west of the Curlew Mountains and between the towns of Boyle and Ballaghaderreen. Most of the lake is in Co. Sligo, but two sections in the south and north-east lie within Co. Roscommon. It is a shallow (maximum depth 16 m), medium-sized lake, which overlies Carboniferous limestones and shales, and Devonian sandstone.

The main inflowing river is the River Lung while the main outflow is the Boyle River. There are two main sections to the lake, a larger northern basin and a smaller southern basin, joined by a narrow channel. The shoreline is convoluted and has receded substantially from its original level due to various drainage schemes since the mid-19th century. The site includes several low-lying islands..."

Lough Gara SPA is of high ornithological importance principally on account of the internationally important populations of Greenland White-fronted Goose and Whooper Swan that are associated with the lake. The occurrence of these species, along with Golden Plover, is of particular note as they are listed on Annex I of the Birds Directive.

4.2.6. River Moy SAC

The River Moy SAC [002298] located approximately 3.5km north-west from the closest point of the Proposed Development site boundary. In addition to the River Moy, there are a number of other river waterbodies within this SAC. The Proposed Development site is hydrologically linked to this SAC via a tributary (34_2448) of the Owengarve river (34003).

The QIs for this Sac include lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510], active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120], depressions on peat substrates of the Rhynchosporion [7150], alkaline fens [7230], old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0], alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0], white-clawed crayfish (*Austropotamobius pallipes*) [1092], sea lamprey (*Petromyzon marinus*) [1095], brook lamprey (*Lampetra planeri*) [1096], salmon (*Salmo salar*) [1106] and otter (*Lutra lutra*) [1355].

Conservation objectives for active raised bogs set out to restore the favourable conservation condition. There is no specific conservation objective for degraded raised bogs still capable of natural regeneration due to it being inherently linked to the conservation objective of the active raised bog. There is also no specific conservation objective for depressions on peat substrates of the Rhynchosporion as this QI is an integral part of good quality active raised bog.

Conservation objectives for alkaline fens, old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*, white-clawed crayfish, sea lamprey, brook lamprey, salmon, and otter set out to maintain favourable conservation condition.

The NPWS Site Synopsis for this SAC provides the following description:

"...The River Moy SAC [002298] comprises almost the entire freshwater element of the River Moy and its tributaries including both Loughs Conn and Cullin. The system drains a catchment area of 805km². Most of the site is in Co. Mayo, though parts are in west Sligo and north Roscommon. The underlying geology is Carboniferous Limestone for the most part, though Carboniferous Sandstone is present at the extreme west of the site, with Dalradian Quartzites and schists at the south-west. Some of the tributaries at the east, the south of Lough Conn and all of Lough Cullin are underlain by granite."

Alluvial woodland occurs at several locations along the shores of the lakes but is particularly well developed along the river at Coryosla Bridge. Principal tree species are willows (including *Salix cinerea* subsp. *oleifolia*) and Alder (*Alnus glutinosa*). The woods are flooded by seasonal fluctuations in lake level.

The site is also important for the presence of four other species listed on Annex II of the Habitats Directive, namely Sea Lamprey, Brook Lamprey, Otter and White-clawed Crayfish. Sea Lamprey are regularly encountered in the lower stretches of the river around Ballina, while the Otter and White-clawed Crayfish are widespread throughout the system. The site supports populations of several species listed on Annex II of the Habitats Directive, and habitats listed on Annex I of this Directive, as well as examples of other important habitats. The presence of a fine example of broadleaved woodland in this part of the country increases the overall habitat diversity and adds to the ecological value of the site.

4.2.7. Tullaghanrock Bog SAC

The Tullaghanrock Bog SAC [002354], located approximately 3km south-east from the closest point of the Proposed Development site boundary, is the closest Natura 2000 site to the Proposed Development. The Proposed Development site is hydrologically linked to this SAC via the Fallsollus Stream and the River Lung.

This SAC has QIs for active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120] and depressions on peat substrates of the Rhynchosporion [7150]. The SAC conservation objectives include restoring the favourable conservation condition of active raised bogs within the SAC. There is no specific conservation objective for degraded raised bogs still capable of natural regeneration due to it being inherently linked to the conservation objective of the active raised bog. There is also no specific conservation objective for depressions on peat substrates of the Rhynchosporion as this QI is an integral part of good quality active raised bog.

The NPWS Site Synopsis for this SAC provides the following description:

"...Tullaghanrock Bog SAC [0002354] is situated approximately 5km east of Ballaghaderreen, Co. Roscommon and is in the townlands of Tullaghan Rock and Creggan. The site comprises a raised bog that includes both areas of high bog and cutover bog. The southern and eastern margins are bounded by the River Lung, and the old Ballaghaderreen railway line adjoins the north-west margin.

Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (Sphagnum spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, Sphagnum lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca), and at least some of the following associated species, Bog Asphodel (Narthecium ossifragum), sundews (Drosera spp.), Deergrass (Scirpus cespitosus) and Carnation Sedge (Carex panicea).

Current land use on the site consists of a small forestry plantation on the southeastern high bog and another on the western margin. Areas of cutover have been reclaimed for agricultural grassland on the west and north-west margins and agricultural grazing occurs on the southern boundary. While most of the drains are old and infilling, there are new deep drains around the forestry..."

4.3. Qualifying Interests and Conservation Objectives

The features of interest and conservation objectives for the Natura 2000 sites identified within the ZoI of the Proposed Development are listed within Table 4. This information was obtained from the resources available on the NPWS website.

Table 4. Summary of the Natura 2000 sites within the ZOI assessed for likely significant effects

Natura 2000 site [Site Code]	QI's [QI code]/ SCI's [SCI code] * = Priority Habitats	Distance to Natura 2000 site from the closest point of the Proposed Development	Likelihood for Significant Effects (S-P-R Model)	Screening Outcome
Bellanagare Bog SAC [000592]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Bellanagare Bog SAC is located c. 10.1 km to the south-east from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 10.1 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed regardless), as well as the absence of a shared GWB connection, the potential for significant effect is deemed to be unlikely.	Considered to be out of ZOI therefore screened out of further assessment.
Bellanagare Bog SPA [004105]	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Direct distance: Bellanagare Bog SPA is located c. 10.3 km to the south-east from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	Potential Significant Effects. Construction phase: Potential displacement of waterbird species associated with the SPA – due to separation distance it is considered unlikely any effects will be significant. Operational phase: Collision risk and potential displacement of waterbird species associated with the SPA. Decommissioning and restoration: Potential displacement of waterbird species associated with the SPA – due to separation distance it is considered unlikely any effects will be significant.	Further assessed.
Bricklieve Mountains and Keishcorran SAC [001656]	Turloughs [3180] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) [6210]	Direct distance: Bricklieve Mountains and Keishcorran SAC is c. 14 km north-east from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	Potential Significant Effects. Potential reduction in the viability of the metapopulation in the wider landscape which supports the subpopulation of Marsh Fritillary (<i>Euphydryas aurinia</i>) within the SAC is considered on a precautionary basis given the significant distance (c. 14km) between the Proposed Development and the SAC.	Further assessed.

	Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) [6510] Calcareous and calcschist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>) [8120] Marsh Fritillary (<i>Euphydryas aurinia</i>) [1065] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1092]			
Callow Bogs SAC [000595]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Callow Bogs is c. 2 km east from the closest point of the Proposed Development Site boundary. Hydrological connectivity: a tributary of the River Lung (26_811) crosses the public road (L5501) at the location where the access road to T9 will be located and runs for c. 6km before it skirts the perimeter of Callow Bog SAC. A tributary of the River Lung (26_2105) runs c. 7km from the south-west corner of the substation location before it reaches Callow Bog SAC.	Potential Significant Effects. Construction phase: Potential water pollution (hydrocarbons, cement leachate and sediment) due to pollution incidents on site and if inappropriate construction practices result in sedimentation. Invasive species could be transmitted through the watercourses to the SAC and disrupt the sensitive vegetation associated with the QI habitats. Operational phase: Potential water pollution (sediment, limited hydrocarbons) due to pollution incidents on site and if inappropriately designed infrastructure results in sedimentation. Decommissioning and restoration: Potential water pollution (hydrocarbons and sediment) during the decommissioning and restoration works.	Further assessed.
Carrowbehy/Caher Bog SAC [000597]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120]	Direct distance: Carrowbehy/Caher Bog SAC is c. 14 km from the closest point of the Proposed Development Site boundary.	No Potential Significant Effect. Given the location of the Proposed Development (c. 14 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed	Considered to be out of ZOI therefore screened out of further assessment

	Depressions on peat substrates of the Rhynchosporion [7150]	No hydrological connectivity.	regardless), it is considered that the potential for significant effect is unlikely.	
Cloonakillina Lough SAC [001899]	Transition mires and quaking bogs [7140]	Direct distance: Cloonakillina Lough SAC is c. 5.5 km north-east from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 5.5 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed regardless), it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Cloonchambers Bog SAC [000600]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Cloonchambers Bog SAC is located c. 14.8 km from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 14.8 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed regardless), it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Cloonshanville SAC [000614]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] Bog woodland [91D0]	Direct distance: Cloonshanville SAC is c. 11.4 km south-east from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 11.4 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed regardless), it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Derrinea Bog SAC [000604]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Derrinea Bog SAC is c. 10.8 km south-west from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 10.8 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed regardless), it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment

Dooastle Turlough SAC [000492]	Turloughs [3180]	Direct distance: Dooastle Turlough SAC is located c. 8.2 km north-west from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 8.2 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment.
Drumalough Bog SAC [002338]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Drumalough Bog SAC is located c. 12.8 km south from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 12.8 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development (and the habitats are rainwater fed regardless), it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Errit Lough SAC [000607]	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. [3140]	Direct distance: Errit Lough SAC is located c. 14 km south-west from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 14 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Flughany Bog SAC [00497]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Flughany Bog SAC is c. 5.2 km from the closest point of the Proposed Development Site boundary. No hydrological connectivity	No Potential Significant Effect. Given the location of the Proposed Development (c. 5.2 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, (and the habitats are rainwater fed regardless) it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Lough Arrow SAC [001673]	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. [3140]	Direct distance: Lough Arrow SAC is c. 17.5 km north-east from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	Unlikely Significant Effect. Given the location of the Proposed Development (c. 17.5 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment

Lough Arrow SPA [004050]	Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] Tufted Duck (<i>Aythya fuligula</i>) [A061] Wetland and Waterbirds [A999]	Direct distance: Lough Arrow SAC is c. 17.5km from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	Potential Significant Effects. Construction phase: Potential displacement of waterbird species associated with the SPA. Operational phase: Collision risk and potential displacement of waterbird species associated with the SPA. Decommissioning and restoration: Potential displacement of waterbird species associated with the SPA.	Further assessed.
Lough Gara SPA [004048]	Whooper Swan (<i>Cygnus cygnus</i>) [A038] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Direct distance- Lough Gara SPA is located c. 3.5 km east from the closest point of the Proposed Development Site boundary. Hydrological connectivity: A tributary of the River Lung (26_811) crosses the public road (L5501) at the location where the access road to T9 will be located and runs for c. 9.5km before it discharges into Lough Gara SPA as a tributary (26_1122) of the River Boyle (26B08). A tributary of the River Lung (26_2106_) runs c. 10.5km from the south-west corner of the substation location before it reaches Lough Gara SPA as a tributary of the Boyle (26B08).	Potential Significant Effects. Construction phase: Potential displacement of waterbird species associated with the SPA. Operational phase: Collision risk and potential displacement of waterbird species associated with the SPA. Decommissioning and restoration: Potential displacement of waterbird species associated with the SPA.	Further assessed.

River Moy SAC [002298]	Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) [6510] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] Alkaline fens [7230] Old sessile oak woods with ilex and Blechnum in the British Isles [91A0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1092] Sea Lamprey (<i>Petromyzon marinus</i>) [1095] Brook Lamprey (<i>Lampetra planeri</i>) [1096] Salmon (<i>Salmo salar</i>) [1106] Otter (<i>Lutra lutra</i>) [1355]	Direct distance: The River Moy SAC is c. 3.5km north-west from the closest point of the Proposed Development Site boundary. Hydrological connectivity: A tributary (34_2448) of the Owengarve river (34O03) passes within 170 m of T6 and runs north-west for c. 6km where it meets the River Moy SAC. The access road to T6 will cross a ditch of fast flowing water which runs for 135 m before merging with a tributary (34_2448) of the Owengarve river). A tributary (34_3792) of the Owengarve (34O03) passes within 15 m of the access track between T1 and T2, where it runs north-west for c. 5.5km from T1 to the River Moy SAC.	Likely Significant Effects. Construction phase: Potential water pollution (hydrocarbons, cement leachate and sediment) due to pollution incidents on site and if inappropriate construction practices result in sedimentation. Operational phase: Potential water pollution (sediment, limited hydrocarbons) due to pollution incidents on site and if inappropriately designed infrastructure results in sedimentation. Decommissioning and restoration: Potential water pollution (hydrocarbons and sediment) during the decommissioning and restoration works. Construction phase: Invasive species could be transmitted through the watercourses to the SAC and disrupt the sensitive vegetation associated with the QI habitats.	Further assessed.
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Templehouse and Cloonacleigha Loughs SAC [000636]	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	Direct distance: Templehouse and Cloonacleigha Loughs SAC is located 13.4 km north from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 13.4 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
Tullaghanrock Bog SAC [0002354]	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	Direct distance: Tullaghanrock Bog SAC is located c. 750 m to the south-east from the site boundary. Hydrological connectivity: A tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and runs for c. 4.5km before it skirts the perimeter of Tullaghanrock Bog SAC. A tributary (26_2105) of the River Lung (26L03) runs c. 6km from the south-west corner of the substation location before it reaches Tullaghanrock Bog SAC.	Potential Significant Effects. Construction phase: Potential water pollution (hydrocarbons, cement leachate and sediment) due to pollution incidents on site and if inappropriate construction practices result in sedimentation. Construction phase: Invasive species could be transmitted through the watercourses to the SAC and disrupt the sensitive vegetation associated with the QI habitats. Operational phase: Potential water pollution (sediment, limited hydrocarbons) due to pollution incidents on site and if inappropriately designed infrastructure results in sedimentation. Decommissioning and restoration: Potential water pollution (hydrocarbons and sediment) during the decommissioning and restoration works.	Further assessed.
Turloughmore (Sligo) SAC [000637]	Turloughs [3180]	Direct distance: Turlough (Sligo) SAC is c. 14km north-west from the closest point of the Proposed Development Site boundary. No hydrological connectivity.	No Potential Significant Effect. Given the location of the Proposed Development (c. 14km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment

Urlar Lakes SAC	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]	Direct distance: Urlar Lakes SAC is located c. 13km south-west from the closest point of the Proposed Development Site boundary. No hydrological connectivity	No Potential Significant Effect. Given the location of the Proposed Development (c. 13km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked to the Proposed Development, it is considered that the potential for significant effect is unlikely.	Considered to be out of ZOI therefore screened out of further assessment
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4.4. Identification of Potential Impacts and Effects on Nature 2000 Sites

The potential impacts of the Proposed Development on the habitats and species listed as QIs for Bellanagare Bog SPA, Blacklieve Mountains and Keishcorran SAC, Callow Bog SAC, Lough Arrow SPA, Lough Gara SPA, River Moy SAC, and Tullaghanrock Bog SAC are discussed in this section.

Significant effects occurring as a result of the Proposed Development is established in light of its type and scale, the location of the Proposed Development with respect to Natura 2000 sites with an identified S-P-R link, and the QIs and conservation objectives of those Natura 2000 sites.

4.4.1. Bellanagare Bog SPA

Bellanagare Bog SPA is located approximately 12.5km to the south-east measured from T10. There is no hydrological connectivity to the Proposed Development site. The SCI for this SPA is the Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395].

Potential impacts and effects could occur during the construction phase, operational phase and decommissioning phase. Indirect effects on waterbird species could occur through adverse effects on foraging habitats and food sources for birds listed as SCIs for SPAs during construction, operation and decommissioning phases of the Proposed Development.

4.4.1.1. Construction phase

Disturbance / Displacement

Due to the separation distance between this SPA and the Proposed Development site, it is considered unlikely that the potential for displacement of waterbird species associated with the SPA will result in any significant effects.

Spread of non-native species and disease

Spread of non-native invasive plant species to downstream SPAs through hydrological connectivity causing indirect effects on sensitive QIs during the construction phase of the Proposed Development, namely:

- Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395].

During the construction phase, invasive species could be transmitted through the watercourses, animal movements or wind dispersal to the SAC and disrupt the sensitive vegetation associated with the QI habitats.

4.4.1.2. Operational phase

Collision risk and potential displacement of waterbird species associated with the SPA.

During the operational phase, there could be potential water pollution (sediment, limited hydrocarbons) due to pollution incidents at the proposed development site during maintenance operations and if inappropriately designed infrastructure results in sedimentation.

4.4.1.3. Decommissioning phase

Due to the separation distance between this SPA and the Proposed Development site, it is considered unlikely that the potential for displacement of waterbird species associated with the SPA will result in any significant effects.

4.4.2. Bricklieve Mountains and Keishcorran SAC

Bricklieve Mountains and Keishcorran SAC is approximately 14km north-east of T2.

4.4.2.1. Construction phase

Disturbance / Displacement

There is a potential significant effect for the QI marsh fritillary (*Euphydryas aurinia*). There is potential for reduction in the viability of the metapopulation in the wider landscape which supports the subpopulation of marsh fritillary (*Euphydryas aurinia*) within the SAC. This is due to habitat loss. This potential effect is considered on a precautionary basis given the significant distance (c. 14km) between the Proposed Development and the SAC.

The spread of invasive species through animal movements and wind dispersal could have a likely significant effect on the habitat within the SAC, and result in a loss of foraging habitat for the SCIs.

4.4.2.2. Operational phase

Due to the separation distance between this SAC and the Proposed Development site, it is considered unlikely for potential significant effects.

4.4.2.3. Decommissioning phase

Due to the separation distance between this SPA and the Proposed Development site, it is considered unlikely potential significant effects.

4.4.3. Callow Bog SAC

Callow Bog is approximately 4km south-east of T9. There is hydrological connectivity between the Proposed Development Site and this SAC. A tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and runs for c. 6km before it skirts the perimeter of Callow Bog SAC. A tributary (26_2105) of the River Lung flows approximately 7km from the south-western corner of the electricity substation location before it reaches the Callow Bog SAC. The southern portion of the Proposed Development Site is hydrologically linked to the Callow Bog SAC via the Fallsollus Stream (26_1536) and the River Lung.

4.4.3.1. Construction phase

Spread of non-native species and disease

Spread of non-native invasive plant species to downstream SACs through hydrological connectivity causing indirect effects on sensitive QIs during the construction phase of the Proposed Development, namely:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

During the construction phase, invasive species could be transmitted through the watercourses to the SAC and disrupt the sensitive vegetation associated with the QI habitats.

Deterioration of Water Quality

The southern section of the Proposed Development is hydrologically linked to the Callow Bog SAC via the Fallsollus Stream and the River Lung. These watercourses are within the current range and distribution for white-clawed crayfish and brook lamprey according to Article 17 reporting (NPWS, 2025).

Water pollution (hydrocarbon, cement leachate and sediment) and fluctuation in surface water flows could cause indirect effects on sensitive QIs of downstream SACs, during wind farm construction, operation, and decommissioning phases, namely:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

During the construction phase, potential water pollution (hydrocarbons, cement leachate and sediment) due to pollution incidents on Site and if inappropriate construction practices result in sedimentation.

The spread of invasive species through water courses, animal movements and wind dispersal could have a likely significant effect on the habitat within the SAC.

4.4.3.2. Operational phase

During the operational phase, there could be potential water pollution (sediment, limited hydrocarbons) due to pollution incidents on Site during maintenance operations and if inappropriately designed infrastructure results in sedimentation.

4.4.3.3. Decommissioning phase

During the decommissioning phase, there could be potential water pollution (hydrocarbons and sediment) during decommissioning and restoration works.

4.4.4. Lough Arrow SPA

Lough Arrow SAC is approximately 17.5km north-west of T3. There is no hydrological connectivity between the Proposed Development and this SPA. The SCI for this SPA is the Little Grebe (*Tachybaptus ruficollis*) [A004], Tufted Duck (*Aythya fuligula*) [A061] and Wetland and Waterbirds [A999].

Potential impacts and effects could occur during the construction phase, operational phase and decommissioning phase. Habitat loss during the construction phase, collision risk and disturbance due to the turbines during the operation phase and disturbance during the decommissioning phase. There is also potential for indirect effects on waterbird species through adverse effects on foraging habitats and food sources due to habitat loss for birds listed as SCIs for SPAs during construction, operation and decommissioning phases of the Proposed Development.

4.4.4.1. Construction phase

Due to the separation distance between this SPA and the Proposed Development site, it is considered unlikely that the potential for displacement for wetland species associated with the SPA will result in any significant effects. The SCI little grebe are residents on ponds and loughs throughout Ireland (Birdwatch Ireland, 2026A), with a preference to dive when foraging. Due to the separation distance between this SPA and the Proposed Development site and no hydrological connection, it is considered

unlikely that the potential for displacement for little grebe. The SCI tufted duck prefer open lakes in the breeding and wintering season, as well as canals and slow-moving rivers (Birdwatch Ireland, 2026B). Due to the separation distance between this SPA and the Proposed Development site and no hydrological connection, it is considered unlikely that the potential for displacement for tufted duck.

The spread of invasive species through animal movements and wind dispersal could have a likely significant effect on the habitat within the SPA, and result in a loss of foraging habitat for the SCIs.

4.4.4.2. Operation phase

Collision risk and potential displacement of SCI species associated with the SPA.

4.4.4.3. Decommissioning phase

Potential displacement of SCI species associated with the SPA.

4.4.5. Lough Gara SPA

Lough Gara SPA is located approximately 4km to the south-east of T9. There is hydrological connectivity between the Proposed Development and this SPA. A tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and runs approximately 9.5km before it discharges into Lough Gara SPA as a tributary of the Boyle (26B08). A tributary (26_2105) of the River Lung (26L03) runs approximately 10.5km from the south-west corner of the substation location before it reaches Lough Gara SPA as a tributary of the Boyle (26B08). To the south, the Proposed Development is hydrologically linked to Lough Gara SPA via the Fallsollus Stream (26F36) and the River Lung.

The QI's for this SPA include Whooper Swan (*Cygnus cygnus*) [A038] and Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395].

Potential impacts and effects could occur during the construction phase, operational phase and decommissioning phase. Indirect effects on waterbird species through adverse effects on foraging habitats and food sources for birds listed as SCIs for SPAs during construction, operation and decommissioning phases of the Proposed Development.

4.4.5.1. Construction phase

Potential displacement of SCI species associated with the SPA.

The spread of invasive species through water courses, animal movements and wind dispersal could have a likely significant effect on the habitat within the SPA, and result in a loss of foraging habitat for the SCIs

4.4.5.2. Operation phase

Collision risk and potential displacement of SCI species associated with the SPA.

During the operational phase, there could be potential water pollution (sediment, limited hydrocarbons) due to pollution incidents on site during maintenance operations and if inappropriately designed infrastructure results in sedimentation.

4.4.5.3. Decommissioning phase

Potential displacement of SCI species associated with the SPA.

4.4.6. River Moy SAC

The River Moy SAC is approximately 3.5km to the north-west of T6 and approximately 4km north-west of T1. There is hydrological connectivity between the Proposed Development and this SAC: a tributary of the Owengarve (34O03) passes within 170m of T6 and flows north-west for approximately 6km before it discharges into the River Moy SAC. The access road to T6 will cross a ditch of fast flowing water which runs for 37m before merging with a tributary of the Owengarve (34O03). A tributary of the Owengarve (34O03) is located within 15m of the access track between T1 and T2, where it flows north-west for approximately 5.5km from T1 to the River Moy SAC.

Due to the aquatics sensitivity the identification of potential impacts for this SAC deviates in format from previous sections.

Deterioration of Water Quality

The River Moy SAC is designated for white-clawed crayfish (*Austropotamobius pallipes*), sea lamprey (*Petromyzon marinus*), brook lamprey (*Lampetra planeri*), salmon (*Salmo salar*) and otter (*Lutra lutra*). It is possible that suitable spawning gravels for salmon occur in the upper catchment of the River Moy SAC which includes the Owengarve River and its tributaries. Brook lamprey spawning habitat also has the potential to occur in the Owengarve River and tributaries; however, it is unlikely that Sea Lamprey will occur in these reaches due to their nature of spawning in lower reaches of large watercourses. White-clawed crayfish reported range includes the Owengarve catchment, and their reported distribution is reported in the lower reaches of the Owengarve catchment and River Moy catchment according to Article 17 reporting (NPWS, 2025).

Water pollution (hydrocarbon, cement leachate and sediment) and fluctuation in surface water flows have to potential to result in indirect effects on sensitive QIs of downstream SACs during the construction, operation, and decommissioning phases of the Proposed Development. These QIs include:

- Active raised bogs [7110];
- Alkaline fens [7230];
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0];
- Brook lamprey (*Lampetra planeri*) [1096];
- Degraded raised bogs still capable of natural regeneration [7120];
- Depressions on peat substrates of the Rhynchosporion [7150];
- Salmon (*Salmo salar*) [1106];
- Sea lamprey (*Petromyzon marinus*) [1095];
- Otter (*Lutra lutra*) [1355]; and
- White-clawed crayfish (*Austropotamobius pallipes*) [1092].

Disturbance

The Proposed Development will result in an increase in noise emissions during the construction phase. The increase in noise will be short term, and/or low scale in nature with the construction phase lasting for approximately for 15 – 18 months. The operational phase is proposed to last 40 years, resulting in the increase of noise emissions during the operational phase. It is presumed that the wind farm will be decommissioned after the 40 years, therefore there will be noise emitted during the dismantling and removal of wind turbines and restoration of the land to its previous state. There was limited evidence of otter recorded during the field survey. This species is known to tolerate and habituate to noise associated with human activities (Chanin, 2003). The ability of otter to tolerate noise generated by human activity coupled with the limited evidence of otter recorded during field surveys, means that noise emissions generated at the construction, operational and decommissioning phase of the Proposed Development is not likely to significantly affect otter populations associated with the River Moy SAC.

Spread of Non-Native Species and Disease

Invasive non-native species have a detrimental effect on native species. The introduction of invasive non-native species and disease during construction phases has potential to affect the QIs of the River Moy SAC, causing an indirect effect through mortality from disease, outcompeting native flora which are listed as QI, and impacting the functioning of habitats for which QI species rely on for food. Spread of non-native invasive plant species through hydrological connectivity have the potential to result in indirect effects on sensitive the following QIs during construction, operational and decommissioning phases of the Proposed Development:

- Active raised bogs [7110];
- Alkaline fens [7230];
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

4.4.7. Tullaghanrock Bog SAC

Tullaghanrock Bog SAC is located approximately 3km to the south-east of T9. There is hydrological connectivity between the Proposed Development and SAC. A tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and flows for approximately 4.5km before it skirts the perimeter of Tullaghanrock Bog SAC. A tributary (26_2105) of the River Lung (26L03) flows for approximately 6km from the south-west corner of the electricity substation location before it reaches Tullaghanrock Bog SAC.

4.4.7.1. Construction phase

Deterioration of water quality

To the south, the Proposed Development is hydrologically linked to Tullaghanrock Bog SAC via the Fallsollus Stream (26F36) and the River Lung. Potential water pollution (hydrocarbon, cement leachate and sediment) and fluctuation in surface water flows have the potential to result in indirect effects on the following QI's:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

Spread of Non-Native Species and Disease

Invasive non-native species have a detrimental effect on native species. The introduction of invasive non-native species and disease during construction phase has potential to affect the QIs of the Tullaghanrock Bog SAC, causing an indirect effect through mortality from disease, outcompeting native flora which are listed as QI and impacting the functioning of habitats for which QI species rely on for food. QI's with the potential of being affected include:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

4.4.7.2. Operational phase

Deterioration of water quality

To the south, the Proposed Development is hydrologically linked to Tullaghanrock Bog SAC via the Fallsollus Stream (26F36) and the River Lung. Potential water pollution (hydrocarbon, cement leachate and sediment) and fluctuation in surface water flows have the potential to result in indirect effects on the following QI's:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

4.4.7.3. Decommissioning phase

Deterioration of water quality

To the south, the Proposed Development is hydrologically linked to Tullaghanrock Bog SAC via the River Lung. Potential water pollution (hydrocarbon, cement leachate and sediment) and fluctuation in surface water flows have the potential to result in indirect effects on the following QIs:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

Spread of Non-Native Species and Disease

Invasive non-native species have a detrimental effect on native species. The introduction of invasive non-native species and disease during decommissioning phases has potential to affect the QIs of the Tullaghanrock Bog SAC, causing an indirect effect through mortality from disease, outcompeting native flora which are listed as QI and impacting the functioning of habitats for which QI species rely on for food. QIs with the potential of being affected include:

- Active raised bogs [7110];

- Degraded raised bogs still capable of natural regeneration [7120]; and
Depressions on peat substrates of the Rhynchosporion [7150].

4.5. Cumulative Effects

This section discusses the potential cumulative effects considered in-combination with the Proposed Development and the findings.

The CIEEM's *'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine'* (2024) state that *"cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location"*. Therefore, although a proposed development may not result in significant effects on its own, it could still have the potential to result in significant effects when considered in-combination with other plans or projects (OPR, 2021). A planning search for developments with a potential cumulative impact was undertaken by the EIA Co-ordinator. All types of developments were assessed for the likelihood of cumulative effects. Proposed developments, existing developments in operation, and permitted developments over the last 10 years (01/01/2016 onwards) were identified for cumulative impacts. Plans and projects considered for in-combination effects are presented in Table 2 .

As per the OPR Guidelines (2021), the in-combination assessment of effects must consider:

- *"Projects completed;*
- *Projects approved but not started or uncompleted;*
- *Projects proposed, i.e., for which an application for approval or consent has been made, including refusals subject to appeal and not yet determined;*
- *Proposals in adopted plans, and*
- *Proposals in finalised draft plans formally published or submitted for consultation or adoption."*

There are eight other wind farms (3 existing, 3 permitted, 1 proposed and 1 appealed), the north Connacht 110 kV overhead line project, and various overhead electricity lines projects identified within the ZoI, which will increase the potential for collision risk from SCI. This could have a likely significant effect on wintering birds which may be migrating to the various SPAs within the ZoI.

There are various residential dwellings and agricultural developments in various stages of planning (proposed, permitted and existing) and existing commercial forestry plantations which would likely attribute to a loss of roosting and foraging habitat. This could have a significant impact on residential and wintering SCIs within the SPAs and for various QIs within the SACs.

The noise during the construction, operation and decommissioning phase may cause displacement for SCIs of SPAs or QIs of SACs. This noise combined with the existing and proposed projects could cause a likely significant effect.

5. CONCLUSION

Natura 2000 sites within the potential ZOI of the Proposed Development include Bellanagare Bog SPA, Lough Arrow SPA, Lough Gara SPA, Bricklieve Mountains and Keishcorran SAC, Callow Bog SAC, River Moy SAC, and Tullaghanrock Bog SAC.

Bellanagare Bog SPA [004105] has SCI of Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]. Bellanagare Bog SPA is located approximately 12.5km to the south-east measured from T10. There is no hydrological connectivity. There is potential for potential displacement during the construction, operational, decommissioning and restoration phases. The spread of invasive species through animal movements and wind dispersal could have a likely significant effect on the habitat within the SPA, and result in a loss of foraging habitat for the SCIs.

Lough Arrow SPA [004050] has SCIs including little grebe (*Tachybaptus ruficollis*) [A004], tufted duck (*Aythya fuligula*) [A061], Wetland and Waterbirds [A999]. Lough Arrow SAC is approximately 17.5km north-west of T3, with no hydrological connectivity. Potential significant effects include potential displacement of waterbird species during the construction phase, operational phase, decommissioning and restoration phases. There is also potential for collision risk during the operational phase. The spread of invasive species through animal movement and wind dispersal could have a likely significant effect on the habitat within the SPA, and result in a loss of foraging habitat for the SCIs.

Lough Gara SPA [004048] has SCIs including whooper swan (*Cygnus cygnus*) [A038] and Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395]. Lough Gara SPA is located approximately 4km to the south-east of T9. It is hydrologically connected via a tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and runs for approximately 9.5km before it discharges into Lough Gara SPA as a tributary of the Boyle (26B08). A tributary (26_2105) of the River Lung (26L03) runs approximately 10.5km from the south-west corner of the substation location before it reaches Lough Gara SPA as a tributary of the Boyle (26B08). Significant effects include potential displacement of waterbird species during the construction, operational, decommissioning and restoration phases. There is also potential for collision risk during the operational phase. The spread of invasive species through water courses, animals and wind dispersal could have a likely significant effect on the habitat within the SPA, and result in a loss of foraging habitat for the SCIs.

Bricklieve Mountains and Keishcorran SAC [001656] has QIs including turloughs [3180], semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210], lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510], Calcareous and calcschist screes of the montane to alpine levels (*Thlaspietea rotundifolii*) [8120], marsh Fritillary (*Euphydryas aurinia*) [1065] and white-clawed crayfish (*Austropotamobius pallipes*) [1092]. Bricklieve Mountains and Keishcorran SAC is approximately 14km north-east of T2, with no hydrological connectivity. Potential reduction in the viability of the metapopulation in the wider landscape which supports the subpopulation of Marsh Fritillary (*Euphydryas aurinia*) within the SAC is considered on a precautionary basis given the significant distance (c. 14km) between the Proposed Development and the SAC. The spread of invasive species through animals and wind dispersal could have a likely significant effect on the QI habitats within the SAC.

Callow Bog SAC [000595] has QIs including active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120], and depressions on peat substrates of the Rhynchosporion [7150]. Callow Bog is approximately 4km south-east of T9. Callow bog is hydrologically connected to the Proposed Development via a tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and runs approximately 6km before it skirts the perimeter of Callow Bog SAC. A tributary (26_2105) of the River Lung also runs approximately 7km from the south-west corner of the substation location before it reaches Callow Bog SAC. Potential significant effects include potential water pollution during the construction, operational and decommissioning phase. Invasive species could be transmitted through watercourses, animal movements or wind dispersal to the SAC during the construction phase.

River Moy SAC [002298] has QIs including Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) [6510], active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120], depressions on peat substrates of the Rhynchosporion [7150], alkaline fens [7230], old sessile oak woods with ilex and *Blechnum* in the British Isles [91A0], alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0], white-clawed crayfish (*Austropotamobius pallipes*) [1092], sea lamprey (*Petromyzon marinus*) [1095], brook lamprey (*Lampetra planeri*) [1096], salmon (*Salmo salar*) [1106] and otter (*Lutra lutra*) [1355]. The River Moy SAC is approximately 3.5 km to the north-west of T6 and approximately 4km north-west of T1. It is hydrologically connected via a tributary of the Owengarve (34O03) passes within 170 m of T6 and runs north-west for approximately 6km where it meets the River Moy SAC. The access road to T6 will cross a ditch of fast flowing water which runs for 37 m before merging with a tributary of the Owengarve (34O03). A tributary of the Owengarve (34O03) passes within 15m of the access track between T1 and T2, where it runs north-west for approximately 5.5km from T1 to the River Moy SAC. Significant effects include potential water pollution during the construction, operational and commissioning and restoration phase. Invasive species could be transmitted through the watercourses to the SAC during the construction phase.

Tullaghanrock Bog SAC [0002354] has QIs including active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120], and depressions on peat substrates of the Rhynchosporion [7150]. Tullaghanrock Bog SAC is located approximately 3km to the south-east of T9. From the site boundary (TDR) it is 760m to Tullaghanrock Bog SAC. There is hydrological connectivity via a tributary (26_811) of the River Lung (26L03) crosses the public road (L5501) at the location where the access road to T9 will be located and runs for approximately 4.5km before it skirts the perimeter of Tullaghanrock Bog SAC. A tributary (26_2105) of the River Lung (26L03) runs for approximately 6km from the south-west corner of the substation location before it reaches Tullaghanrock Bog SAC. Potential significant effects include potential water pollution during the construction, operational, decommissioning and restoration phases. Invasive species could also be transmitted through the watercourses to the SAC during the construction phase.

There are various projects and developments at various stages of planning (proposed, existing and permitted) which may result in cumulative effects. There is potential for likely significant effects on QIs in SACs and SCIs in SPAs in Section 4.2 due to displacement, pollution, collision risk, habitat loss and spread of invasive species. Therefore, in line with the recommendations of guidance and case law, it is considered that the Proposed Development should progress to the next stage of the process to determine if it will adversely affect the integrity of the Natura 2000 site.

6. REFERENCES

- ACP Planning Portal. Available at <https://www.pleanala.ie/en-ie/home/> (last accessed: 23/03/2026)
- Aerial maps. Available at: <https://www.google.ie/maps> (Last accessed: 20/03/2026)
- Anon (2004). *Margaritifera margaritifera. Stage 1 and Stage 2 survey guidelines. Irish Wildlife Manual No.12*, Dublin: National Parks and Wildlife Service. Available at: <https://www.npws.ie/sites/default/files/publications/pdf/IWM12.pdf> (Last accessed: 07/09/2026)
- Band, W., Madders, M., and Whitfield, D. (2007). *Developing Field and Analytical Methods to Assess Avian Collision Risk at Wind Farm Sites*. Available at: https://www.natural-research.org/application/files/4114/9182/2839/Band_et_al_2007.pdf (Last accessed: 07/09/2026)
- Burke, B., et al. (2021). *Population size, breeding success and habitat use of Whooper Swan Cygnus cygnus and Bewick's Swan Cygnus columbianus bewickii in Ireland: results of the 2020 International Swan Census. Irish Birds*, Volume 43, pp. 57-70.
- Chanin, P. (2003). *Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10*. Peterborough: English Nature. Available at: <https://www.nature.scot/sites/default/files/2017-07/B359155%20-%20Ecology%20of%20the%20European%20Otter%20-%20Conserving%20Natura%202000%20Rivers%20No.%2010.pdf> (Last accessed: 07/09/2026)
- Chartered Institute of Ecology and Environmental Management (2024). *Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine*. s.l.: Chartered Institute of Ecology and Environmental Management. Available at: <https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf> (Last accessed: 07/09/2026)
- De Lucas, M., Janss, G., and Ferrer, M. (2007). *Birds and Wind Farms – Risk Assessment and Mitigation*. Quercus Editions, pp. 259-279.
- Department of Environment, Heritage and Local Government (2009). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. Dublin: National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government. Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf (Last accessed: 07/09/2026)
- Department of Environment, Heritage and Local Government and the National Parks and Wildlife Service (2010). 'Circular NPWS 1/10 & PSSP 2/10 – Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities'. Available at <https://www.npws.ie/sites/default/files/general/Circular%20NPW1-10%20%26%20PSSP2-10%20Final.pdf> (Last accessed: 07/09/2026)
- Department of Housing, Local Government and Heritage (DHLGH) MyPlan.ie. Available at: <https://www.myplan.ie/zoning-map-viewer/> (Last accessed: 23/03/2026)
- Environmental Protection Agency (EPA) Maps. Available at: <https://gis.epa.ie/EPAMaps/> (Last accessed: 01/10/2026)

- European Commission (2000). *Communication from the Commission on the Precautionary Principle*. Luxembourg: Office for Official Publications of the European Communities. Available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2000:0001:FIN:en:PDF> (Last accessed: 07/09/2026)
- European Commission (2013). *Interpretation Manual of European Union Habitats - EUR 28*. s.l.: European Commission. Available at: https://www.miteco.gob.es/content/dam/miteco/es/biodiversidad/temas/espacios-prottegidos/doc_manual_intp_habitat_ue_tcm30-207191.pdf (Last accessed: 07/09/2026)
- European Commission (2019). *Managing Natura 2000 Sites: The Provision of Article 6 of the 'Habitats Directive' 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2019_033_R_0001 (Last accessed: 07/09/2026)
- European Commission (2021). *Commission notice – 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. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2021_437_R_0001 (Last accessed: 07/09/2026)
- European Commission (2021). *Commission notice – Guidance document on the strict protection of animal species of Community interest under the Habitats Directive*. Brussels: European Commission. Available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=PI_COM:C\(2021\)7301](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=PI_COM:C(2021)7301) (Last accessed: 07/09/2026)
- Fossitt, J. (2000). *A Guide to Habitats in Ireland*, Kilkenny: The Heritage Council. Available at: <https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf> (Last accessed: 07/09/2026)
- Geological Survey of Ireland (GSI). Available at: <https://www.gsi.ie/en-ie/Pages/default.aspx> (Last accessed: 23/03/2026)
- Gilbert, G., Stanbury, A., and Lewis, L. (2021). *Birds of Conservation Concern in Ireland 2020 –2026. Irish Birds*, Volume 9, p. 523–544.
- Hardey, J. et al. (2013). *Raptors: A field guide to survey and monitoring (3rd Edition)*. s.l.: The Stationary Office, Edinburgh.
- Inland Fisheries Ireland (IFI). Available at: <https://www.fisheriesireland.ie/> (Last accessed: 23/03/2026)
- Irwin, S., Wilson, W., O'Donoghue, B., O'Mahony, B., Kelly, T., O'Halloran, J. (2012). *Optimum scenarios for Hen harrier Conservation in Ireland; Final Report 2012*. Prepared for the Department of Agriculture, Food and the Marine by the School of Biological, Earth and Environmental Sciences, University College Cork. Available at: <https://www.ucc.ie/en/media/research/planforbio/pdfs/HEHHARRIERFinalProjectReportJune2012.pdf> (Last accessed: 13/07/26)
- Kettunen, M., Terry, A., Tucker, G., and Jones A. (2007). *Guidance on the maintenance of landscape features of major importance for wild flora and fauna - Guidance on the implementation of Article 3 of the Birds Directive (79/409/EEC) and Article 10 of the Habitats Directive (92/43/EEC)*, Brussels: Institute for European Environmental Policy (IEEP). Available at: <https://ieep.eu/wp->

- [content/uploads/2022/12/guidance_the_implementation_of_articles_3_and_10_birds_habitats_directives.pdf](#) (Last accessed: 13/07/26)
- Marnell, F. L. D. and . L. C. (2019). *Ireland Red List No. 12: Terrestrial Mammals*, Dublin, Ireland.: National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/publications/pdf/Red%20List%20No.%2012%20Mammals.pdf> (Last accessed: 13/07/26)
- Martin, J., O'Neill, F., and Daly, O. (2018). *The Monitoring and Assessment of Three EU Habitats Directive Annex I Grassland Habitats. Irish Wildlife Manual No. 102*. Dublin: National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/publications/pdf/IWM%20102%20Annex%201%20Grasslands.pdf> (Last accessed: 13/07/26)
- NPWS (2025). *The Status of EU Protected Habitats and Species in Ireland – 2025*. Available at https://assets.gov.ie/static/documents/1b52a57d/The_Status_of_EU_Protected_Habitats_and_Species_in_Ireland.pdf (Last accessed: 23/03/2026).
- National Biodiversity Data Centre (2025). *Biodiversity Maps*. [Online] Available at: <https://maps.biodiversityireland.ie/Map> (23/03/2026)
- National Parks and Wildlife Service (2021). *Strict Protection of Animal Species: Guidance for Public Authorities on the Application of Articles 12 and 16 of the EU Habitats Directive*. Brussels: European Commission. (Last accessed: 13/07/26)
- National Parks and Wildlife Service (2025). *The Status of EU Protected Habitats and Species in Ireland*. Available at: <https://www.npws.ie/sites/default/files/publications/pdf/article-17-report-2025-volume-1.pdf> (Last accessed: 13/07/26)
- National Parks and Wildlife Services (2012) Site Synopsis: Bellanagare Bog SPA, Site Code: 004105. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004105.pdf> (Last accessed: 20/02/2026)
- National Parks and Wildlife Services (2025) Conservation Objectives for Bellanagare Bog SPA [004105]. First Order Site specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage. Available at: [CO004105.pdf](#) (Last accessed: 20/02/2026).
- National Parks and Wildlife Services (2013) Site Synopsis: Bricklieve Mountains and Keishcorran SAC, Site Code 001656. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001656.pdf> (Last accessed: 20/02/2026)
- National Parks and Wildlife Services (2021) Conservation Objectives: Bricklieve Mountains and Keishcorran SAC 001656. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001656.pdf (Last accessed: 20/02/2026)
- National Parks and Wildlife Services (2013) Site Synopsis: Cloonshanville Bog SAC, Site Code 000614. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000614.pdf> (Last accessed: 19/02/2026)

National Parks and Wildlife Services (2016) Conservation Objectives: Cloonshanville Bog SAC 000614. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000614.pdf (Last accessed: 19/02/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Cloonakillina Lough SAC, Site Code 001899. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001899.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2019) Conservation Objectives: Cloonakillina Lough SAC 001899. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001899.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Derrinea Bog SAC, Site Code 000600. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000604.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Conservation Objectives: Derrinea Bog SAC, Site Code 000600. Version 1. Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000604.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Doocastle Turlough SAC, Site Code 000492. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000492.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2020) Conservation Objectives: Doocastle Turlough SAC 000492. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000492.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Errit Lough SAC, Site Code 000607. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000607.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2017) Conservation Objectives: Errit Lough SAC 000607. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000607.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Flughany Bog SAC, Site Code 000497. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000497.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2016) Conservation Objectives: Flughany Bog SAC 000497. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000497.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Lough Arrow SAC, Site Code 001673. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001673.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2021) Conservation Objectives: Lough Arrow SAC 001673. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001673.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2014) Site Synopsis: Lough Arrow SPA, Site Code 001673. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004050.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2025) Conservation Objectives for Lough Arrow SPA [004050]. First Order Site- specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004050.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Turloughmore (Sligo) SAC, Site Code 000637. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000637.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2021) Conservation Objectives: Turloughmore (Sligo) SAC, Site Code 000637. Version 1. Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000637.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2013) Site Synopsis: Urlar Lakes SAC, Site Code 001571. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001571.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2017) Conservation Objectives: Urlar Lakes SAC, Site Code 001571. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001571.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2014) Site Synopsis: Drumalough Bog SAC, Site Code 002338. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002338.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2016) Conservation Objectives: Drumalough Bog SAC 002338. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002338.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Site Synopsis: Cloonchambers Bog SAC, Site Code 000600. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000600.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2016) Conservation Objectives: Cloonchambers Bog SAC, Site Code 000600. Version 1. Department of Arts, Heritage and the Gaeltach. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000600.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2014) Site Synopsis: Lough Gara SPA, Site Code: 004048. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004048.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2025) Conservation Objectives for Lough Gara SPA [004048]. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004048.pdf (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2014) Site Synopsis: Tullaghanrock Bog SAC, Site Code 002354. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002354.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Conservation Objectives: Tullaghanrock Bog SAC 002354. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002354.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Site Synopsis: Bellanagare Bog SAC, Site Code 000592. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000592.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Conservation Objectives: Bellanagare Bog SAC 000592. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000592.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Site Synopsis: Carrowbehy/Caher Bog SAC, Site Code 000597. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000597.pdf> (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Conservation Objectives: Carrowbehy/Caher Bog SAC 000597. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000597.pdf (Last accessed: 26/03/2026)

National Parks and Wildlife Services (2015) Site Synopsis: Callow Bogs SAC, Site Code 000595. Department of Arts, Heritage and the Gaeltacht. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000595.pdf> (Last accessed: 27/03/2026)

National Parks and Wildlife Services (2016) Conservation Objectives: Callow Bog SAC 000595. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000595.pdf (Last accessed: 27/03/2026)

- National Parks and Wildlife Services (2015) Site Synopsis: Cloonchambers Bog SAC, Site Code 000600. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000600.pdf> (last accessed: 27/03/2026)
- National Parks and Wildlife Services (2016) Conservation Objectives: Cloonchambers Bog SAC 000600. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000600.pdf (Last accessed: 27/03/2026)
- National Parks and Wildlife Services (2020) Site Synopsis: River Moy SAC, Site Code 002298. Department of Housing, Local Government and Heritage. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002298.pdf> (Last accessed: 27/03/2026)
- National Parks and Wildlife Services (2016) Conservation Objectives: River Moy SAC 002298. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002298.pdf (Last accessed: 27/03/2026)
- National Parks and Wildlife Services (2013) Site Synopsis: Templehouse and Cloonacleigha Loughs SAC, Site Code 000636. Department of Arts, Heritage and the Gaeltach. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000636.pdf> (Last accessed: 26/03/2026)
- National Parks and Wildlife Services (2021) Conservation Objectives: Templehouse and Cloonacleigha Loughs SAC 000636. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000636.pdf (Last accessed: 26/03/2026)
- Office of the Planning Regulator (2021). OPR Practice Note PN01 – Appropriate Assessment Screening for Development Management. s.l.: s.n. Available at: <https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf> (Last accessed: 07/04/2026)
- Ó Néill, L., Veldhuizen, T., de Jongh, A. and Rochford, J., (2009). *Ranging behaviour and socio-biology of Eurasian otters (Lutra lutra) on lowland mesotrophic river systems*. European Journal of Wildlife Research, Volume 55, p. 363–70. <https://doi.org/10.1007/s10344-009-0252-9>
- Scottish Natural Heritage (2000). *Windfarms and Birds – Calculating a theoretical collision risk assuming no avoiding action*. s.l.: SNH Guidance Note. Available at: <https://www.nature.scot/doc/wind-farm-impacts-birds-calculating-theoretical-collision-risk-assuming-no-avoiding-action> (Last accessed: 18/03/2026)
- Scottish Natural Heritage (2016). *Assessing Connectivity with Special Protection Areas (SPAs). Guidance. Version 3*. s.l.: Scottish Natural Heritage. Available at: <https://www.nature.scot/doc/assessing-connectivity-special-protection-areas> (Last accessed: 18/03/2026)
- Scottish Natural Heritage (2018). *Avoidance rates for the onshore SNH wind farm collision risk model. Version 2*. s.l.: Scottish Natural Heritage. Available at: (Last accessed: 01/04/2026)
- Scottish Natural Heritage (2017, updated 2025). *Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms*. s.l.: SNH Guidance Note. Available at:

<https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms> (Last accessed: 18/03/2026)

Roscommon County Council (2022). *Roscommon County Development Plan 2022 – 2028*. Available at: <https://www.rosdevplan.ie/> (Last accessed: 31/03/2026)

Roscommon County Council Planning Portal. Available at: [Search Planning Applications - Roscommon County Council](#) (Last accessed: 23/03/2026)

Ruddock, M., Wilson-Parr, R., Lusby, J., Connolly, F., J. Bailey, and O'Toole, L. (2024). *The 2022 National Survey of breeding Hen Harrier in Ireland*. Report prepared by Irish Raptor Study Group (IRSG), BirdWatch Ireland (BWI), Golden Eagle Trust (GET) for National Parks and Wildlife Service (NPWS). Irish Wildlife Manuals, No. 147. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland. Available at: <https://www.npws.ie/sites/default/files/publications/pdf/IWM147.pdf> (Last accessed: 18/03/2026)

Toner, P., Bowman, K., Clabby, K., Lucey, J., McGarrigle, M, Concannon, C., Clenaghan, C., Cunningham, P., Delaney, J., O'Boyle, S., MaCarthaigh, M., Craig, M., & Quinn, R. (2005). *Water Quality in Ireland 2001-2003*. Environmental Protection Agency, Wexford.

APPENDIX I — FIGURES

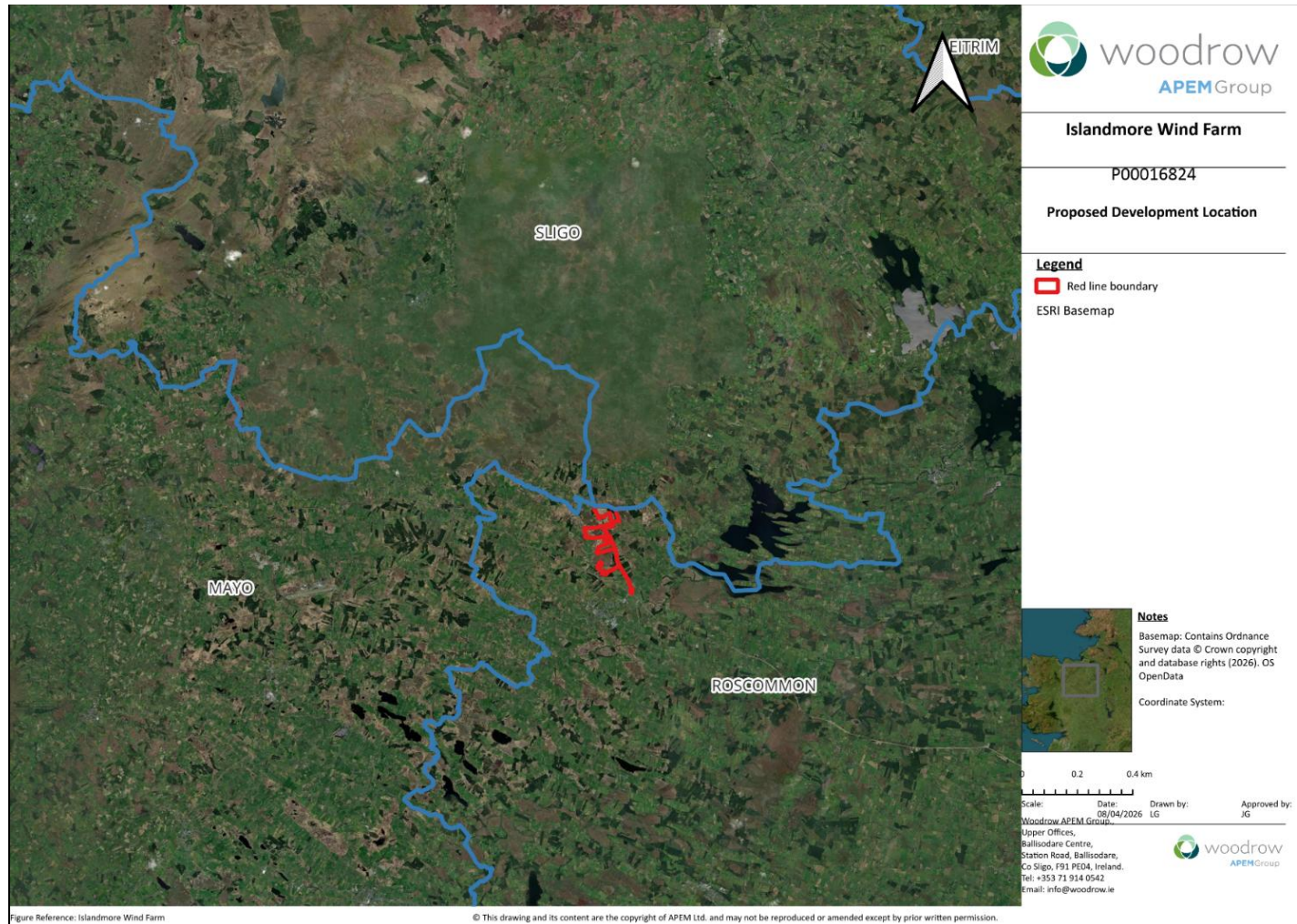


Figure 1. Proposed Development site location

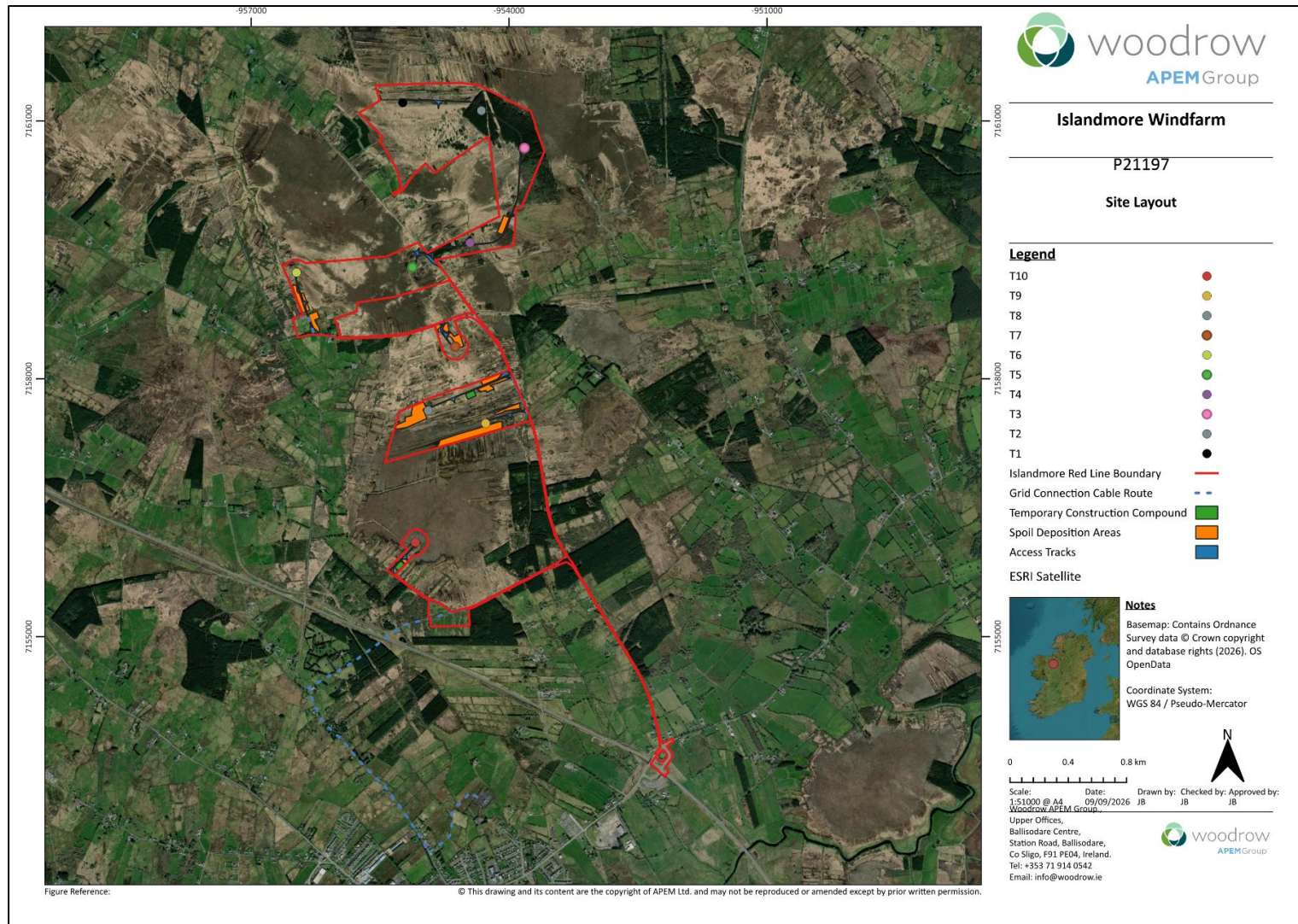


Figure 2. Proposed Development site layout

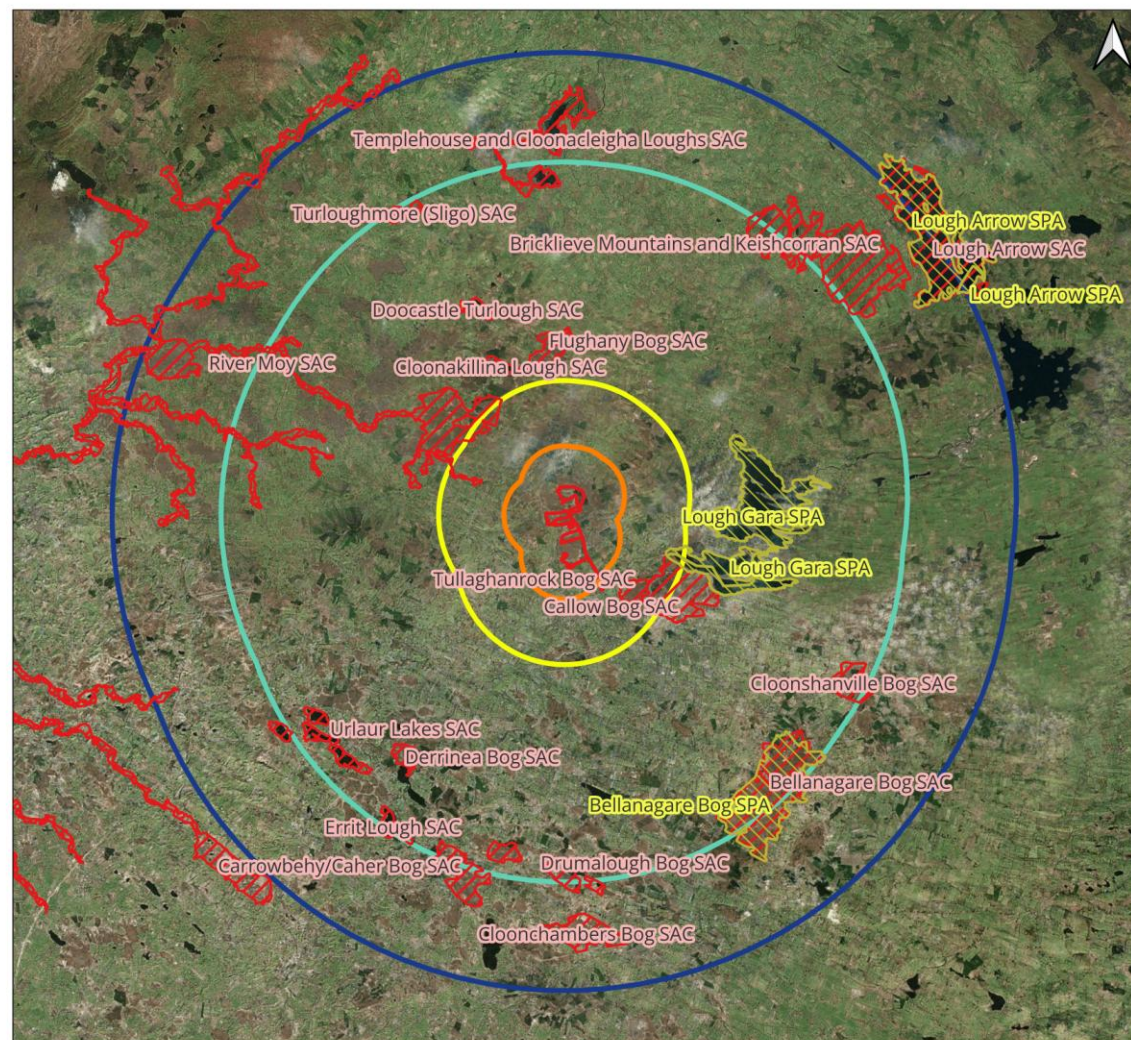


Figure Reference: [P0001948 - Kings Hospital School Site Location Map]

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Islandmore
P0008410

Natura 2000 sites within 20km of
the site

Legend

-  SPA Sites
-  SAC Sites
-  2km buffer
-  5km buffer
-  15km buffer
-  20km buffer
-  Red Line Boundary

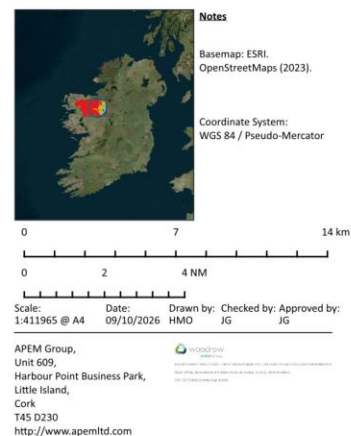


Figure 3. Natura 2000 sites assessed for S-P-R connectivity

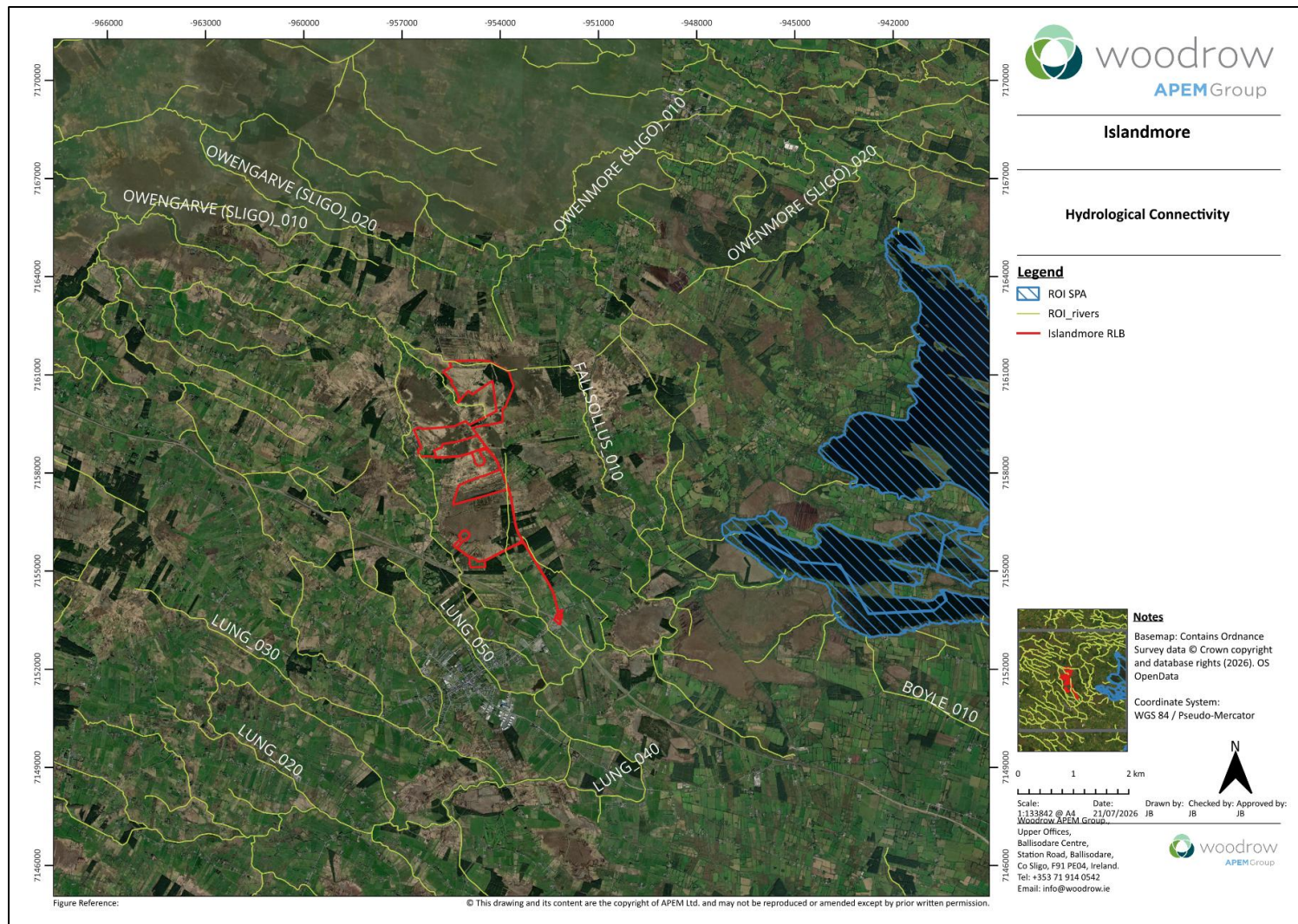


Figure 4. Hydrological connectivity to Natura 2000 sites

