Rooaunalaghta Green Energy Ltd.

Rooaunalaghta Wind Farm

Natura Impact Statement (NIS)

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woodrow
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Table of Contents

1. Introduction 1
1.1. Background 1
1.2. Site Description 1
1.3. Purpose of this Document 2
1.4. Objectives of the Appropriate Assessment Approach 2
1.5. Legislative Context 2
2. Description of the Proposed Project 6
3. Main Sources of Information 11
3.1. Legal, Regulatory and other Documents 11
3.2. The Receiving Environment 12
4. Screening for Appropriate Assessment 17
4.1. Approach to Screening for Appropriate Assessment 17
4.2. Outcome of Screening for Appropriate Assessment 17
5. Identification of Potential Impacts 19
6. Appropriate Assessment 22
6.1. Cloughmoyne SAC (000479) 22
6.2. Lough Corrib SAC (000297) 24
6.3. Lough Corrib SPA (004042) 34
6.4. Shrule Turlough SAC (000525) 45
7. In-Combination Assessment of Effects 48
7.1. Associated / Connected Developments 48
7.2. Additive/ Incremental Effects 49
7.3. Summary of In-Combination Effects 52
8. Mitigation and Monitoring Measures 55
8.1. Mitigation Measures 55
8.2. Monitoring 62
9. Residual Effects 63
9.1. Construction Phase 63
9.2. Operational Phase 65
9.3. Decommissioning Phase 65
10. Conclusion 68
11. References 69
Appendix 1: Statement of Authority 72

Tables

Table 1: Distances from the proposed project to European Sites screened in for further assessment 17
Table 2: Potential impacts arising from the proposed project in the context of screened in QIs and SCIs of European Sites 20
Table 3: CRM Summary for Lough Corrib SPA SCIs..... 45
Table 4: Wind farms within 20 km of the proposed wind farm site..... 49
Table 5: Projects with the potential for in-combination effects with the proposed project 53
Table 6: Summary of potential effects, mitigation measures, and residual effects 66

Figures

Figure 1: Overview of the proposed project showing Planning Application Boundary and site layout . 8
Figure 2: Grid Connection Route of the proposed project..... 9
Figure 3: Turbine Delivery Route (from Galway Harbour) of the proposed project 10
Figure 4: Surface water network surrounding the proposed project 13
Figure 5: Location of the proposed project in relation to European Sites 18

1. INTRODUCTION

1.1. Background

APEM Group Woodrow was commissioned to prepare a Natura Impact Statement (NIS) for a proposed wind farm in the townlands of Cloghmoyne, Carrowoughteragh, Toorard, Rooaunalaghta, Brodullagh South and Kinlough in County Mayo, and associated infrastructure (henceforth referred to as the proposed project) including a Grid Connection Route (GCR) that extends into County Galway.

A Stage 1 screening for Appropriate Assessment (AA) was prepared for the proposed project and identified potential for Likely Significant Effects (LSE) on the Natura 2000 network (henceforth referred to as European Sites[1]) within the Zone of Influence (ZoI) of the proposed project (see the associated AA Screening for definitions), in the absence of mitigation measures. Therefore, on the basis of objective scientific information, it was determined that the proposed project be subject to Stage 2 AA and an NIS be prepared.

This NIS provides information, in view of best scientific knowledge, applying the precautionary principle, and considering the conservation objectives of the relevant European Sites, whether the proposed project, either alone or in combination with other plans or projects, may adversely affect the integrity of any European Site after the implementation of mitigation measures. European Sites are Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The NIS is largely informed by surveys undertaken to inform the Environmental Impact Assessment Report (EIAR) prepared for the proposed project.

The legislative context of the requirement to undertake AA is outlined in the following sections.

1.2. Site Description

The proposed wind farm site is located approximately 2.5 km southwest of Shrule, Co. Mayo and approximately 3.5 km northwest of Headford, Co. Galway. Lands are primarily comprised of agricultural fields bounded by stone walls, hedgerows and treelines with pockets of scrub and woodland in the eastern half of the proposed wind farm site (refer to **Figure 1**).

The proposed wind farm site is located on either side of the R334 Regional Road, which runs in a northwest-southeast direction connecting Headford and Ballinrobe. The surrounding area can be described as rural with a mostly dispersed settlement type (though some clustering at Moyne). The nearest settlements are Moyne village to the southeast of the proposed wind farm site and Glencorrib to the northwest, both along the R334.

The proposed wind farm site encompasses an area of approximately 222 ha and comprises a contiguous, irregularly shaped land parcel. It extends approximately 1.2 km in a northwest/ southeast direction and approximately 3.2 km in a northeast/ southwest direction. Topography across the proposed wind farm site ranges in elevation from approximately 25 m to 60 m AOD. Access to the proposed wind farm site is provided directly from the regional road (R334), which connects with the N84 National Secondary Road at Headford, Co. Galway.

[1] Natura 2000 sites are referred to as European Sites in certain guidance documents and legislation such as the European Communities (Birds and Natural Habitats) Regulations 2011as amended, as well as the Planning and Development Acts 2000 (as amended).

1.3. Purpose of this Document

The aim of this report is to provide supporting information to assist the Competent Authority, in this case An Coimisiún Pleanála (ACP), in applying Article 6(3) of the EU Habitats Directive (92/43/EEC) (European Commission, 1992) as necessary, under their roles, functions and responsibilities in relation to the AA of plans or projects. The purpose of this NIS is to assess whether the potential LSE identified in the AA Screening could adversely affect the integrity of any European Site alone or in-combination with other plans and projects, after the implementation of mitigation measures. The NIS takes account of the Qualifying Interests (QIs)/Special Conservation Interests (SCIs) and the conservation objectives as defined for the various relevant European Sites in the ZoI of the proposed project. This report focuses on the works associated with the proposed project, as outlined in **Section 2**.

The report sections, paragraphs and tables relate in sequence to the process of assessing the potential impact of the proposed project in the context of sequential requirements of Article 6 of the EU Habitats Directive.

1.4. Objectives of the Appropriate Assessment Approach

The AA approach in Ireland is driven by the Habitats Directive (92/43/EEC) which is transposed into Irish Law by Part XAB of the Planning and Development Act, 2000 (as amended) (the "PDA 2000"), in respect of land use plans and proposed development requiring development consent and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended, for all other activities, plans and projects. The objective of AA is to determine whether a proposed project, either alone or in combination with other plans or projects, will adversely affect the integrity of a European site, as defined in the PDA 2000, in view of its conservation objectives. European sites include SACs designated under the Habitats Directive (92/43/EEC) and SPAs designated under the Birds Directive (2009/147/EC), together forming the Natura 2000 network.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures to be addressed in the AA process (OPR, 2021) as follows:

- Firstly, a plan or project should aim to avoid any potential for negative impacts on European Sites;
- Secondly, if avoidance isn't possible, a project must undergo Stage 2 AA, where mitigation measures should be applied to the point where no adverse impacts on the site(s) remain;
- Thirdly, a plan/ project may have to undergo an assessment of alternative solutions. Under this stage of the assessment, compensatory measures are required for any remaining adverse effects, but they are permitted only if (a) there are no alternative solutions and (b) the plan/ project is required for Imperative Reasons of Overriding Public Interest (the 'IROPI test'). European case law highlights that consideration must be given to alternatives outside the plan/ project boundary area in carrying out the IROPI test.

1.5. 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.

1.5.1. Requirement for Appropriate Assessment

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the "Habitats Directive", provides legal protection for habitats and species of European importance.

Articles 3 to 9 of the Habitats Directive provide the legislative means to protect habitats and species of community interest through the establishment and conservation of a European Union (EU)-wide network of European Sites (forming the Natura 2000 network). Article 12 establishes strict protection measures for species of Community interest listed in Annex IV of the directive. These species require strict legal protection across their natural range, regardless of whether they are within designated protected areas. Relevant to AA are Article 6(3) and Article 6(4).

Article 6(3) states:

> *"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 [AA] of its implications for the site in view of the site's conservation objectives. In 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."*

Article 6(4) states:

> *"If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted."*

Under the EU Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC) areas which support habitats and species of conservation importance which are designated for the conservation of flora, fauna and habitats of European importance are referred to as SACs. Areas which are designated for

the protection and conservation of bird species and habitats of European importance are referred to as SPAs.

SACs are selected based on Annex I habitats and Annex II animal and plant species. Annex I of the Habitats Directive lists certain habitats that must be given protection, referred to as Annex I habitats. Certain Annex I habitats are deemed 'priority' and have greater protection. Examples of designated Irish habitats include raised bogs, active blanket bogs, limestone pavement, turloughs, heaths, lakes and rivers. Annex II of the Habitats Directive lists species whose habitats must be protected, species examples include: lesser horseshoe bat (*Rhinolophus hipposideros*), Eurasian otter (*Lutra lutra*), Atlantic salmon (*Salmo salar*) and white-clawed crayfish (*Austropotamobius pallipes*).

The Birds Directive aims to protect all wild bird species naturally occurring in the EU, including those listed in Annex I of the directive. SPAs are designated based on the presence of internationally significant populations of these bird species which include birds of prey, waders, seabirds, waterfowl and wetlands which attract large numbers of migratory birds each year.

Ireland is required under the terms of the EU Birds Directive (2009/147/EC) to designate SPAs for the protection of endangered species of wild birds. This includes certain listed rare and vulnerable species, regularly occurring migratory species, such as ducks, geese and waders, and wetlands, especially those of international importance, which attract large numbers of migratory birds each year.

The Habitats Directive was transposed into Irish law in a planning context, through Part XAB of the Planning and Development Acts 2000 (as amended). This sets out the circumstances under which an AA is required, the stages of that assessment which must be undertaken, and the responsibilities of the Competent Authority in considering whether or not to approve consent for proposed plans or projects.

Section 177U(1) of this Act states that:

> *"A screening for [AA] of a draft Land use plan or application for consent for proposed development shall be carried out by the Competent Authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site."*

Section 177U(4) of this Act states that:

> *"The Competent Authority shall determine that an [AA] of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site."*

1.5.2. Natura Impact Statement

If, following the screening process, a LSE is predicted or cannot be ruled out; an AA is required under s. 177U(4) of the Planning and Development Acts (as amended) to assess the potential for adverse effects on the integrity of a European Site.

Under the Planning and Development Acts 2000 (as amended), Section 177T(4) states:

> *"The applicant for consent for proposed development may, or if directed in accordance with subsection (5) by a competent authority, shall furnish a Natura impact statement to the competent authority in relation to the proposed development."*

Furthermore, Section 177T(1)(*b*) states:

> *"A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites."*

While, Section 177T(2) states:

> *"…a Natura impact statement... shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites."*

With the AA Screening having determined that the potential for LSE on European Sites could not be ruled out, a NIS is required. This NIS provides an assessment of the proposed project considering potential impacts on QIs and SCIs and provides mitigation proposals to avoid adverse effects on the integrity of European Sites. This allows for an audit trail through Article 6 of the EU Habitats Directive to facilitate an AA by a Competent Authority (in this case, ACP).

The approach to preparing the NIS is summarised as follows:

- Describe the elements of the project that are likely to give rise to LSE on the European Sites;
- Set out the conservation objectives of the European Sites;
- Identify and assess potential impact pathways, including hydrological, hydrogeological, air/dust, land-based disturbance, visual disturbance, collision risk, flightlines, and *ex-situ* SPA bird connectivity;
- Apply the Source-Pathway-Receptor (S-P-R) model with reference to the nature, size, and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects;
- Describe how the project will affect the key species and key habitats of the European Sites;
- Describe how the integrity of European Sites is likely to be affected by the project;
- Describe what measures are to be introduced to avoid, reduce or remedy the adverse effects on the integrity of the European Site; and,
- Consider findings and determine if potential for adverse effects on the integrity of the European Sites remains after such measures have been implemented.

In the event of a negative assessment in terms of an adverse effect on site integrity, a proposal can only be consented in the absence of feasible alternatives and for IROPI. In such cases, compensatory measures to ensure the integrity of the European Site is maintained, are required. The Guidance document on Article 6(4) of the Habitats Directive states that:

> *"Any uncertainty over the precise nature and/or magnitude of the adverse effects should be thoroughly tested. Where appropriate, a precautionary approach should be adopted and the assessment of adverse effect based on a worst-case scenario."*

2. DESCRIPTION OF THE PROPOSED PROJECT

The layout of the proposed wind farm provides for 13 no. wind turbines (refer to **Figure 1**) and has been designed to minimise the potential environmental effects of the wind farm, while at the same time maximising the energy yield of the wind resource passing over the proposed wind farm site. A comprehensive constraint identification exercise, as described in **EIAR Chapter 3**, has been carried out to ensure that turbines and ancillary infrastructure are sited in the most appropriate areas of the proposed wind farm site.

The proposed project will connect to the national grid *via* an electrical grid connection. There will be a proposed control building at the northeastern edge the proposed wind farm site (near T8) which gathers all the power from the individual turbines (refer to **EIAR Chapter 2**).

It is proposed that the turbine components will be delivered to the proposed wind farm site *via* Galway Harbour in Galway City as shown in **Figure 2** and **Figure 3**. The Turbine Delivery Route (TDR) has been identified from a detailed traffic and transport assessment.

The detailed Swept Path Analysis uses both a non-segmented 67 m turbine blade in length carried on a standard transporter and a tower clamp vehicle for the turbine towers was carried out from port to the proposed wind farm site entrance as seen in **Figure 3**. All technical specifications and details of works along the TDR route are detailed in the **EIAR Chapter 2**.

The proposed wind farm site is located on lands under the ownership and control of local landowners. The third-party private landowners have consented to the application and proposed project.

Key components of the proposed project are summarised as follows:

- 13 no. wind turbines with a blade tip height of 150 m, a rotor diameter of 136 m, a hub height of 82 m, and all associated foundations and hard-standing areas in respect of each turbine;
- Creation of two new site entrances onto the R334 regional road;
- Construction of two temporary construction compounds with associated temporary site offices, parking areas and security fencing;
- One borrow pit. All works associated with the opening, aggregate and spoil extraction, and rehabilitation of the borrow pit (see EIAR Section 2.7.9);
- Construction of approximately 6.8 km of new internal site access tracks and upgrade of approximately 1.5 km existing internal site access tracks, to include passing bays and all associated drainage;
- Construction of two temporary soil storage areas including associated drainage;
- Construction of a 340 m temporary new access track to connect to the adjacent operating quarry;
- Construction of drainage and sediment control systems;
- Construction of new on-site control building;
- Construction of one permanent loop-in 110 kV electrical substation compound including:
    - Two control building containing worker welfare facilities;
    - Electrical infrastructure and grid ancillary services equipment;
    - New site entrance onto the L2104;
    - Parking;
    - Lighting;
    - Fencing;
    - Wastewater holding tank;
    - Rainwater harvesting equipment;
    - Communications equipment and storage;

    - Associated electrical plant;
    - All associated infrastructure, services, and site works including landscaping;

- All works associated with the connection of the proposed wind farm to the proposed 110 kV loop-in substation, which will be *via* 33 kV underground cable connection (approximately 8.7 km in length), including 6 no. watercourse crossings, and the onward connection from the substation to the existing overhead line *via* 110 kV cables and steel lattice end masts with removal of one poleset;
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm control building;
- All associated infrastructure and services including site works and signage;
- Construction of a lidar unit, and associated foundation and hard-standing area; and,
- All related site works and ancillary development including site drainage, security gates, fencing, permanent and temporary signage, berms, landscaping, tree/hedgerow/wall removal, soil excavation and biodiversity mitigation and enhancements, including hedgerow and tree planting.
- Temporary additional works required within the public road corridor to accommodate delivery of oversize turbine components.

The proposed project includes a TDR extending from Galway Harbour to the proposed wind farm site (see **Figure 3**). Temporary accommodation works are required at a single location along the route within Galway City, comprising the localised reinforcement of an existing footpath to facilitate the delivery of turbine components. In addition, minor hedgerow and vegetation trimming, together with the temporary removal and reinstatement of roadside signage, may be required at selected locations along the route. No other significant ground disturbance, hardstanding or infrastructure works are proposed along the TDR.

A 10-year planning permission and 35-year operational life from the date of commissioning of the entire wind farm with a permanent 110 kV substation and associated grid connection is being sought for the proposed project. The entire proposed project has been considered and assessed as part of the EIAR; however, the current planning application relates to the wind farm, sub-station and GCR.

For more detail on the proposed project, the design development and alternatives considered refer to **EIAR Chapters 2** and **3**.

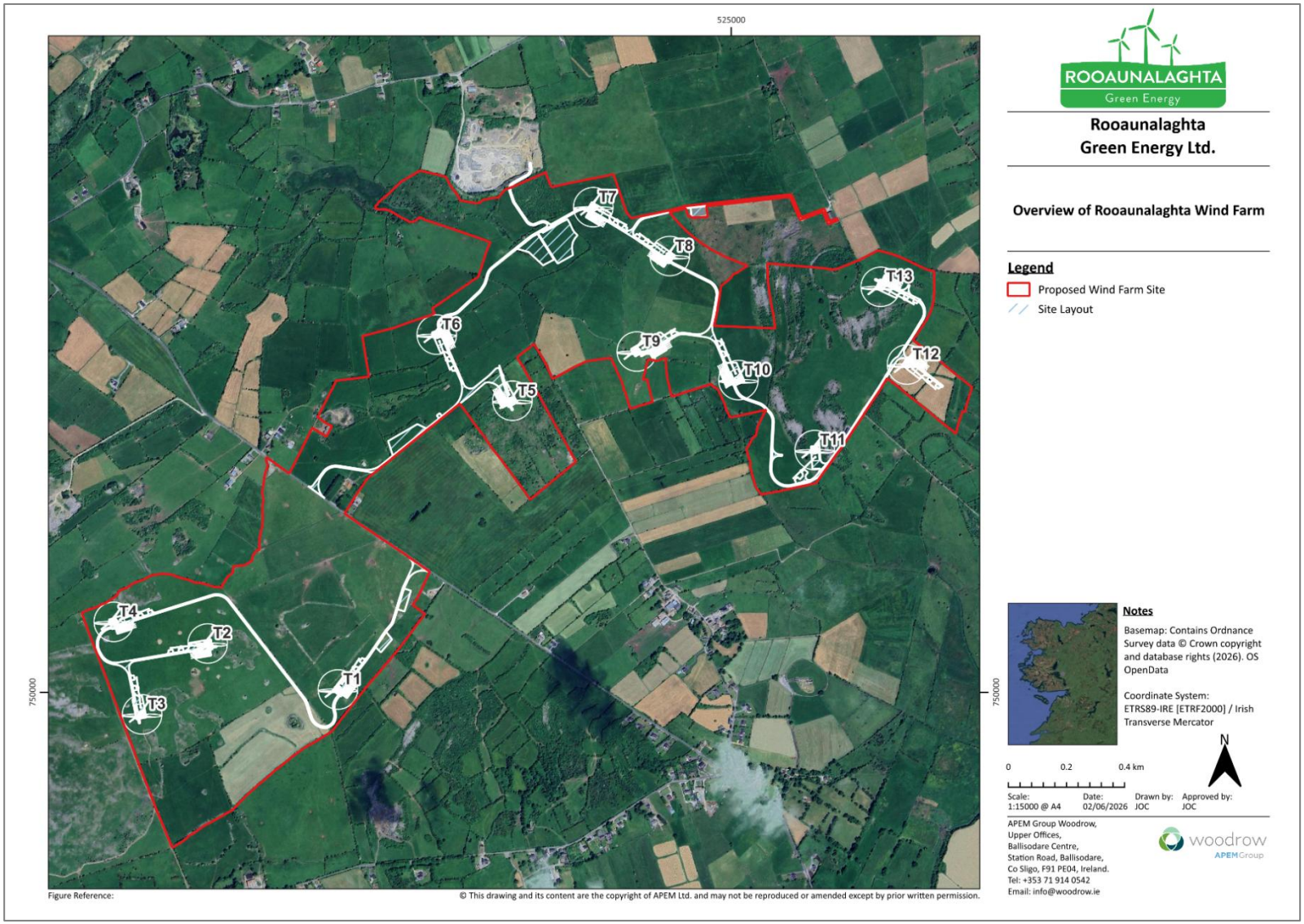


Figure 1: Overview of the proposed project showing Planning Application Boundary and site layout

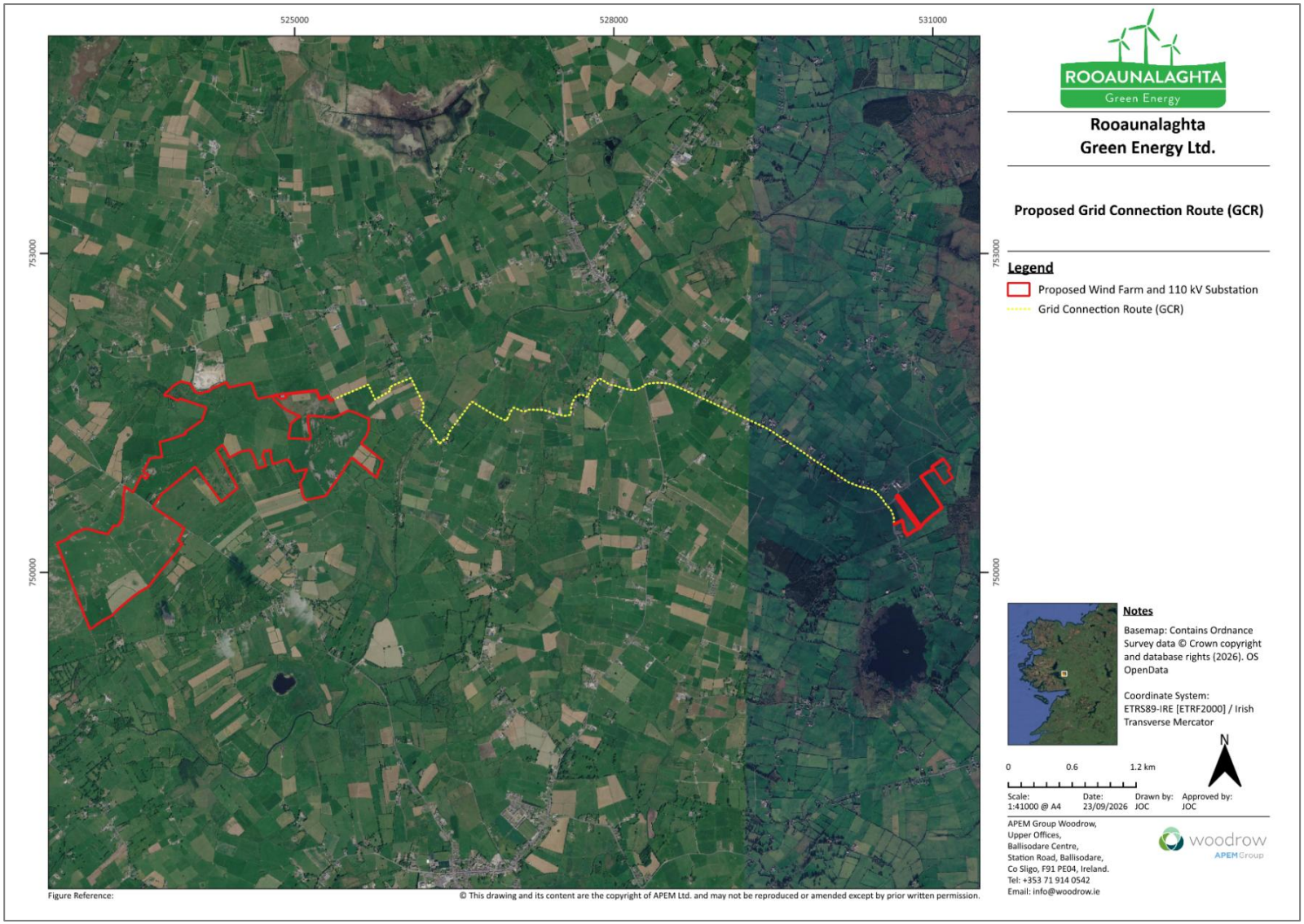


Figure 2: Grid Connection Route of the proposed project

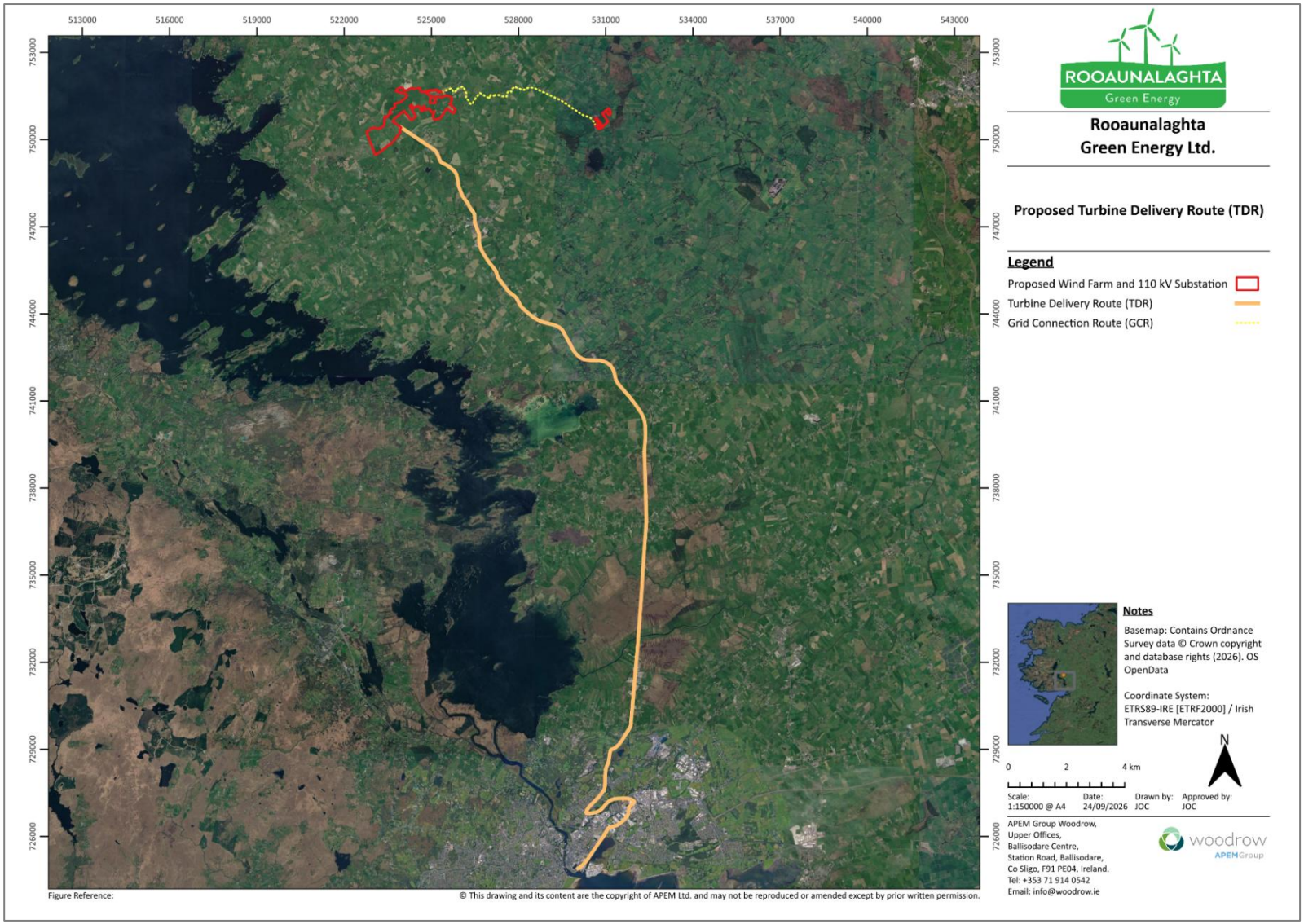


Figure 3: Turbine Delivery Route (from Galway Harbour) of the proposed project

3. MAIN SOURCES OF INFORMATION

3.1. Legal, Regulatory and other Documents

The following legislation, regulatory documents, and relevant sources of information were consulted:

- TOBIN – An AtkinsRéalis Company (2026). Rooaunalaghta Green Energy Ltd. Environmental Impact Assessment Report **(EIAR)**
- APEM Group - Woodrow (2026) Rooaunalaghta Wind Farm – Appropriate Assessment (AA) Screening Report.
- Department of Environment, Heritage and Local Government (2009 as amended in 2010). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.
- European Community Habitats Directive (92/43/EEC) – The Habitats Directive (European Commission 1992).
- European Commission (2021) Commission Notice - Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2021) ANNEX to the Commission Notice - Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC, 2019).
- Office of the Planning Regulator (OPR) (2021) OPR Practice Note PN01 Appropriate Assessment Screening for Development Management.
- Environmental Protection Agency (EPA) Maps[2].
- National Parks and Wildlife Services online Map Viewer[3].
- Ireland's National Geospatial Data Hub online Map Viewer[4].
- Inland Fisheries Ireland (IFI) Open Data Hub[5].
- I-WeBS Core Count Data – Lough Corrib[6].
- Geological Survey of Ireland (GSI) Data and Maps[7].
- Mayo County Council (MCC) Planning Portal (MCC, 2026).
- Galway County Council (GCC) Planning Portal (GCC, 2026).
- Mayo County Development Plan 2022-2028 (MCC, 2022).
- Galway County Development Plan 2022-2028 (GCC, 2022)
- Galway County Heritage and Biodiversity Plan 2024-2030 (GCC, 2024)
- Mayo County Biodiversity Action Plan (MCC, 2026)
- Environmental Protection Agency (EPA) (2014). Guidance on the Authorisation of Direct Discharges to Groundwater. Environmental Protection Agency.
- Wilson, S. and Fernández, F. (2013). National survey of limestone pavement and associated habitats in Ireland. Irish Wildlife Manuals, No. 73. NPWS, Department of Arts, Heritage and the Gaeltacht, Ireland.

[2] EPA Maps. Available at: https://gis.epa.ie/EPAMaps/ [Accessed April 2026].

[3] NPWS Designations Viewer. Available at: https://dahg.maps.arcgis.com/apps/webappviewer/ [Accessed April 2026].

4 Geohive Map Viewer. Available at: https://www.arcgis.com/apps/webappviewer/ [Accessed April 2026].

5 IFI Open Data Hub: Available at: https://opendata-ifigeo.hub.arcgis.com/ [Accessed April 2026].

6 I-WeBS Core Count Data. Available at: https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey/ [Accessed April 2026].

7 GSI Data and Maps: Available at: https://www.gsi.ie/en-ie/data-and-maps/ [Accessed April 2026].

- National Biodiversity Data Centre[8]

A full list of references is provided in Section 11.

3.2. The Receiving Environment

The following information is based on the surveys and data collated and prepared for the accompanying EIAR for this proposed project, mainly: **EIAR Chapter 2** (Project Description), **EIAR Chapter 6** (Biodiversity), **EIAR Chapter 7** (Ornithology), **EIAR Chapter 8** (Lands, Soil and Geology), and **EIAR Chapter 9** (Hydrology and Hydrogeology).

The proposed project, including the GCR and 110 kV substation, is located within the Corrib hydrological catchment in a rural agricultural setting, with the majority of the proposed project situated within the Black (Shrule) sub-catchment (SC_010), which drains to the Black River (EPA Code: 30B02). The landscape consists almost entirely of improved grassland, interspersed with hedgerows, treelines and areas of scrub. The proposed wind farm is bisected by the Regional road R334, and the GCR connects with the local road L2104, to the east of the proposed project. The Black River is located c. 180 m to the east of the proposed wind farm and an agricultural drain leading to the Rooaunalaghta Stream (EPA Code: 30R03) forms a hydrological pathway between the proposed wind farm site and the Black River, which flows into Lough Corrib (see **Figure 4**). The Black River and its tributary, the Shancloon Stream (EPA Code: 30S32) are also crossed by the proposed GCR.

EIAR Chapter 9 contains information on the geology of the proposed project site. The underlying bedrock is mainly limestone with some glacial till[9]. The underlying bedrock aquifer is regionally important (conduit), and the vulnerability categorised as E (extremely vulnerable to human activities)[10] and X (rock at or near the surface). Soils are mainly brown earths with limestone rocks.

[8] NBDC Map Viewer and Datasets. Available at: https://www.maps.biodiversityireland.ie/

[9] https://gis.epa.ie/EPAMaps/ (Accessed May 2026)

[10] Groundwater vulnerability – GSI (last accessed 30/09/2026)

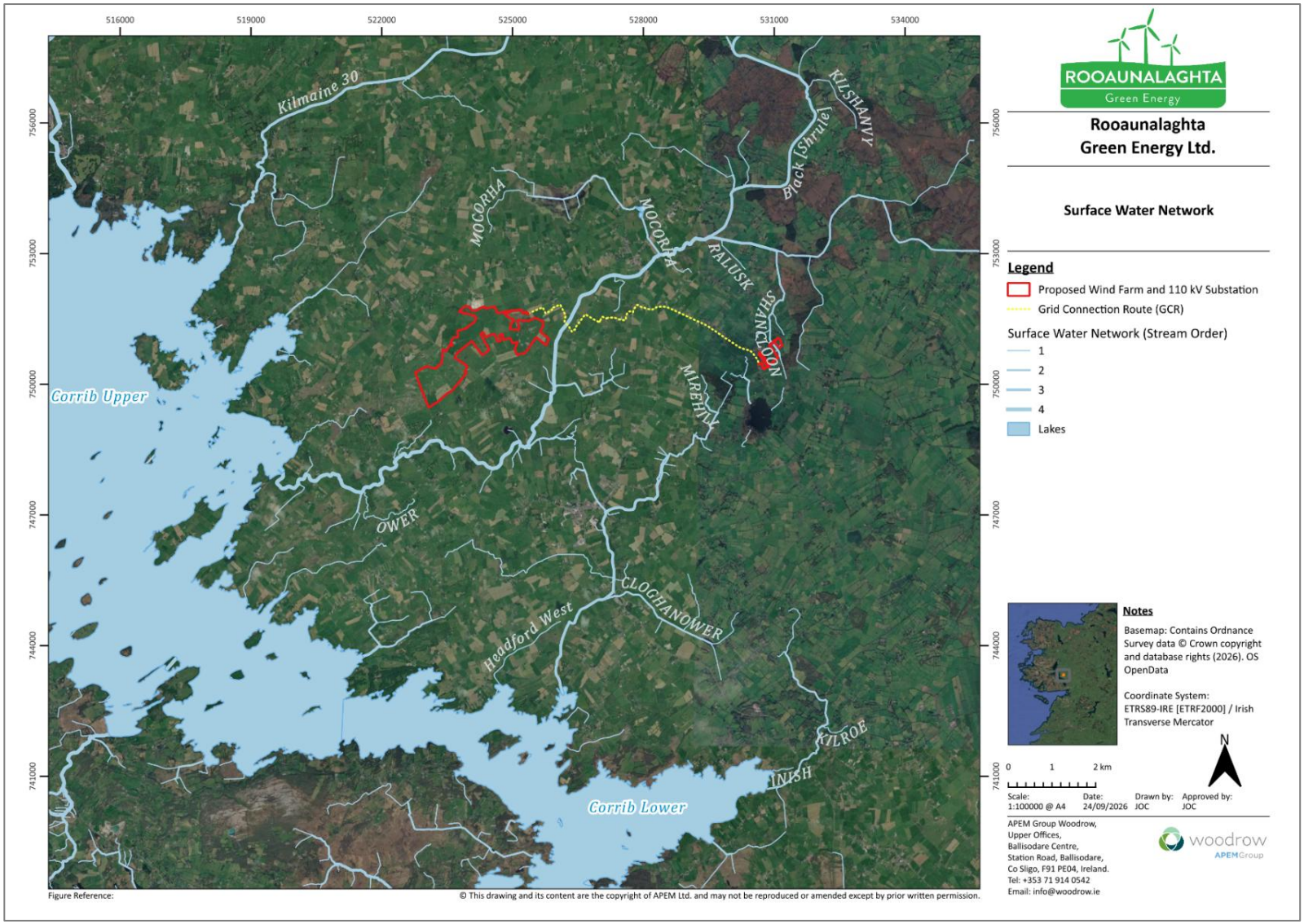


Figure 4: Surface water network surrounding the proposed project

3.2.1. Site Visits

Surveys of the proposed wind farm site and its environs were conducted between September 2022 and April 2026, in order to establish an ecological baseline at the proposed project, including along the GCR and TDR. These comprised Phase 1-type habitat surveys (including Fossitt (2000) Level 3 classification and Annex I verification), detailed botanical quadrat surveys at turbine locations, and targeted surveys for mammals (including otter). In addition, separate ornithological (2022-2026) and aquatic ecology studies were completed, including supplementary aquatic surveys undertaken in August 2026 to update the fisheries and aquatic ecology baseline (2023-2025), together with a full season of bat activity monitoring completed in 2024 and an additional roost emergence survey undertaken in 2026. These surveys assisted in establishing the potential connectivity with European Sites, the presence of Invasive Alien Species (IAS) and any QIs or SCIs that may occur within the study area or within the immediate vicinity of the proposed project.

Site visits confirmed the following EU Annex I habitats (Fossit, 2000) present in the proposed wind farm site (see **EIAR Chapter 6**, including the relevant technical appendices, for full details of baseline surveys): [8240] Limestone pavements*, [6210] Semi-natural dry grassland and scrubland facies on calcareous substrates (Festuco-Brometalia), [4030] European dry heaths, and an area of [3180] Turlough, extending to outside the boundary of the proposed wind farm. Of note [8240] Limestone pavements* are a QI of Cloughmoyne SAC (000479), which adjoins the proposed wind farm.

Regarding alien invasive species listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015), one North American mink (*Neovison vison*) was incidentally observed in the proposed wind farm. Mink is classified as invasive in Ireland and is known for its ecological impacts, particularly on ground-nesting birds, small mammals and aquatic species. Along the GCR corridor, three invasive alien plants were observed: rock cotoneaster (*Cotoneaster horizontalis*), cherry laurel (*Prunus laurocerasus*) and winter heliotrope (*Petasites fragrans*). Additionally, butterfly bush (*Buddleia davidii*) and winter heliotrope (*Petasites fragrans*) occurred along the TDR.

Surveys for otter were also completed as per Irish guidelines for the *Treatment of Otters prior to the Construction of National Road Schemes* (National Roads Authority [NRA], now Transport Infrastructure Ireland [TII], 2008). Surveys were conducted in the proposed wind farm as well as along the GCR where bridge crossings were involved, including at the Black River and Shancloon Stream (see **EIAR Chapter 6**). These surveys confirmed recent otter activity, with field signs concentrated along the Black River, particularly near the eastern boundary of the proposed wind farm as well as near the GCR crossing of the Black River (EPA Segment Codes: 30_1502, 30_1506, 30_1507 and 30_1407) and also at the Shancloon Stream, downstream of the proposed 110 kV substation. The evidence gathered suggests that otter utilise the watercourse areas surveyed and riparian habitat as part of a wider home range, for hunting and commuting. This is due to the high foraging potential of the watercourses, supported by ample prey availability. One incidental sighting of an otter feeding during a breeding bird survey in May 2024, c. 500 m southeast of the proposed wind farm boundary (see **EIAR Appendix 6-3, Figure 7**) supports this conclusion.

Aquatic surveys for water quality (water chemistry and Q-values), fish habitat suitability, and white-clawed crayfish (*Austropotamobius pallipes*) were carried out in August 2023, whilst a walkover survey was completed in November 2025, to ensure that there had been no material change in land use and that baseline conditions remained unchanged (refer to **EIAR Appendix 6-5**). Although there are no

known records of freshwater pearl mussel (*Margaritifera margaritifera*) within the Black River, the species occurs within the wider Lough Corrib catchment, primarily associated with the Owenriff River (EPA Code: 30O02), which is not hydrologically connected to the proposed project. As such, a Stage 1 survey was undertaken in August 2024 to confirm their absence. Survey sites were chosen taking into account the location of watercourses in relation to the proposed wind farm (see EIAR Aquatic Ecology Baseline Report (**EIAR Chapter 6, Appendix 6-5** - **Figure 1**). Given the hydrological connectivity of the Black River and downstream Lough Corrib (see **Figure 4**), the Black River and its tributaries, including the Rooaunalaghta and Cloughmoyne streams, which run close to the proposed wind farm, were the focus of the surveys.

Additional aquatic ecology surveys were completed in August 2026 to update the baseline and confirm existing conditions within the receiving environment. These surveys included fisheries, aquatic habitat, macroinvertebrate and eDNA surveys of the Black River and associated tributaries, together with surveys of selected standing water habitats within and adjacent to the study area (refer to **EIAR Appendix 6-7**). The results broadly corroborated the findings of the earlier surveys and confirmed the continued importance of the Black River as the principal aquatic receptor within the study area.

Water chemistry results for the Black River indicate good quality with generally low nutrient concentrations. This is supported by macroinvertebrate survey results, with macroinvertebrate surveys indicating generally good ecological quality within the Black River catchment. Additional surveys undertaken in August 2026 broadly corroborated these findings, although biological quality was somewhat lower at certain locations, likely reflecting the unusually low flow conditions prevailing at the time of survey (see **EIAR Appendices 6-5** and **6-7**). Two survey locations recorded observations that were different from most, one being a dense growth of macrophytes (*Fontinalis* and *Cladophor*a) and occasional filamentous algae, probably linked to localised conditions of high light availability and possibly episodic nutrient inputs, the other having elevated nitrate concentrations, likely linked to the intensive agricultural activity through dairy farming in the catchment (see **EIAR Appendix 6-5 and 6-7**).

The Black River provides good fish habitat throughout, although spawning and nursery habitat is considered mostly suboptimal owing to siltation and filamentous algae growth. Salmonid and mixed juvenile habitat was prevalent. Adult salmonid passageway (fast moving glides and runs) and resting and holding areas (deep runs and glides) were also found along the reach. Salmonids were observed feeding in glide habitat and three salmonid fry were observed in samples in one survey location. Additional fisheries surveys completed in August 2026 confirmed the continued presence of juvenile salmon within the Black River, corroborating its value as salmonid nursery habitat despite historical channel modification and low summer flow conditions. Suitable lamprey habitat was recorded within the Black River catchment and, while lamprey were not recorded during fisheries surveys, the species was subsequently detected through eDNA sampling completed in August 2026 (see **EIAR Appendix 6-7**). Lamprey species can be assumed to be present at or downstream of the proposed works. The Shancloon Stream provides a limited range of aquatic habitats and is considered unsuitable for supporting salmonid and lamprey species (see **EIAR Appendix 6-5**).

No evidence of white-clawed crayfish was recorded during field surveys and the species was not detected through eDNA sampling undertaken as part of the 2026 survey programme (see **EIAR Appendices 6-5** and **6-7**). This would suggest this species is likely absent from the Black River. However, there is suitable habitat present to support this species, and the sites surveyed have the

potential for reintroduction in due course, subject to confirmation that crayfish plague is not present in the catchment.

While freshwater pearl mussel occurs elsewhere within the wider Lough Corrib catchment, the species was not recorded during the Stage 1 survey completed in 2024 and was not detected through eDNA sampling undertaken in 2026 (see **EIAR Appendix 6-7**). As such, there is no evidence to suggest the species occurs within the Black (Shrule) sub-catchment.

Three years of ornithological baseline surveys confirm that the proposed wind farm site and its environs support a diverse but regionally typical assemblage of farmland and wetland birds; all SCI bird species were recorded during the study period, with the exception of Arctic tern (*Sterna paradisaea*), common tern (*Sterna hirundo*) and common scoter (*Melanitta nigra*) (refer to **EIAR Chapter 7** and **Appendix 7-8**). Across all species groups, the proposed wind farm site is assessed as being of generally low suitability for high sensitivity species. Land cover within the site is dominated by farmland, scrub and improved grassland habitats, supporting mostly widespread and adaptable species (see **EIAR Chapter 6, Appendix 6-3**). No evidence was found of breeding by any SCI bird species. Large wintering populations of some species, e.g., shoveler (*Spatula clypeata*) and tufted duck (*Aythya fuligula*) were consistently associated with nearby wetlands, some of which regularly supported nationally important numbers. Within the proposed project, waterbird activity was relatively low and largely confined to wet grassland, shallow depressions, and field margins. The surveys recorded some observations of Greenland white-fronted goose (*Anser albifrons flavirostris*) during the wintering period. These were transient flights, indicating use of the wider landscape (within a 5 km radius of the proposed project), but not evidence of regular feeding, roosting or defined flight corridors through the proposed project. Hen harrier (*Circus cyaneus*) was observed but the records implied only sporadic use of the wider landscape. There was no evidence of roosting or functional dependence on the proposed project, and most records of these birds occurred below rotor swept height (see also **Section 6.3.3**).

4. SCREENING FOR APPROPRIATE ASSESSMENT

4.1. Approach to Screening for Appropriate Assessment

The Guidance for Planning Authorities (DoEHLG, 2010) states a screening assessment should include any European Site within or adjacent to the plan or project area and any European Site within the likely ZoI of the plan or project.

The approach taken in preparing the AA Screening is described in the AA Screening document prepared for the proposed project (APEM Group - Woodrow, 2026).

4.2. Outcome of Screening for Appropriate Assessment

The AA Screening (APEM Group Woodrow, 2026) concluded that the proposed project does not overlap with, nor is it necessary for the management of any European Site. There are hydrological connections between the proposed wind farm and Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525). The Cloughmoyne SAC adjoins the western boundary of the proposed project. The Black River branch of the Lough Corrib SAC is crossed by the GCR of the proposed project; Lough Corrib itself is part of Lough Corrib SAC and Lough Corrib SPA, and there is a downstream hydrological connection to this through the Black River. For distances, refer to **Table 1**.

Table 1: Distances from the proposed project to European Sites screened in for further assessment

European Site	Distance from proposed wind farm	Distance from GCR
Cloughmoyne SAC (000479)	0 m (adjoining), hydrological c. 0 m	c. 2.9 km, hydrological N/A
Lough Corrib SAC (000297)	c. 147 m, hydrological c. 675 m	0 m (route crosses SAC Black River)
Lough Corrib SPA (004042)	c. 2.8 km, hydrological c. 11.1 km	c. 5.2 km, hydrological c. 10.9 km
Shrule Turlough SAC (000525)	c. 1.9km, possible groundwater connection	c. 1.8 km

Based on these pathways and the nature of the QIs/SCIs in the European Sites, the AA Screening concluded that the proposed project could potentially undermine the conservation objectives of Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525), giving rise to a risk of LSE. Potential water quality impacts, particularly during construction, or dewatering associated with major works areas, could affect the favourable conservation condition of the QIs/SCIs for which these European Sites are designated. Accordingly, these sites are carried forward for assessment within this NIS to support Stage 2 AA.

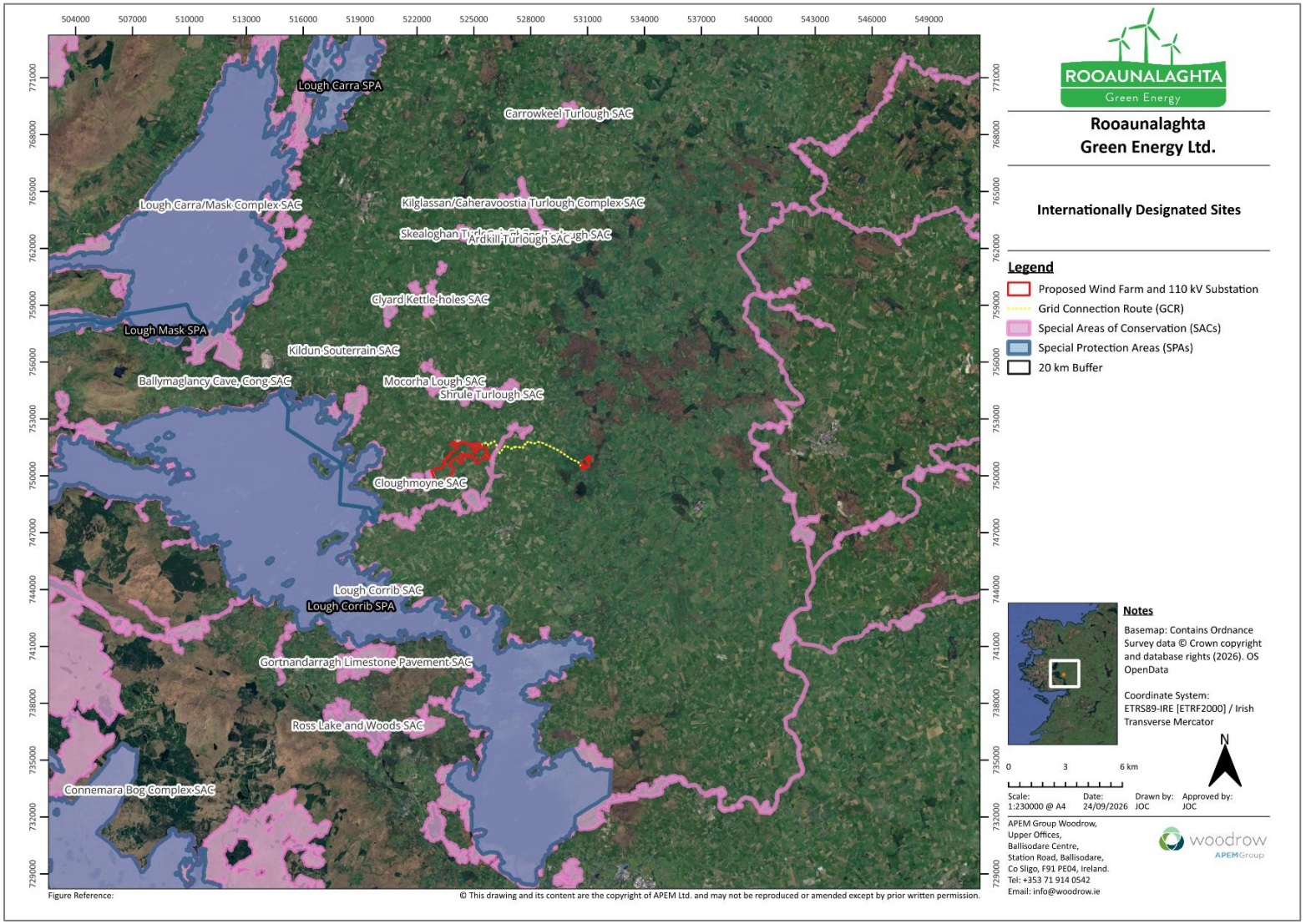


Figure 5: Location of the proposed project in relation to European Sites

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5. IDENTIFICATION OF POTENTIAL IMPACTS

As concluded from the AA screening, the proposed project is not within any European site, but it adjoins Cloughmoyne SAC (000479), and other European sites were identified as being within the ZoI. Potential impacts may occur from the proposed project on the integrity of the European sites Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525). These may occur during the construction, operation and/or decommissioning phases of the proposed project. S-P-R were identified, the pathways being through the hydrological connections and distance between the proposed project and the European sites. The impacts may be disturbance of protected species, degradation of habitats and water quality from nutrient enrichment, potential water level disturbance associated with dewatering, pollution events (including hydrocarbon spills), sedimentation and elevated levels of suspended solids and as well as indirect loss of foraging habitat. Table **2** summarises the proposed project's potential impacts, the screened in QIs and SCIs of affected European Sites, and the phase(s) during which they may occur.

Table 2: Potential impacts arising from the proposed project in the context of screened in QIs and SCIs of European Sites

European Site (Site Code)	QIs/SCIs for which LSE Identified	Potential Impact(s)	Project Phase
Cloughmoyne SAC (000479)	• Limestone pavements [8240]	• Surface runoff • Dewatering • Alteration of soil chemistry • Nutrient enrichment of nutrient-poor habitat • Dust deposition • Invasive alien species	Construction Operation Decommissioning
Lough Corrib SAC (000297)	• Oligotrophic waters containing very few minerals of sandy plains *(Littorelletalia uniflorae)* [3110] • Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto Nanojuncetea* [3130] • 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] • *Austropotamobius pallipes* (White-clawed Crayfish) [1092] • *Petromyzon marinus* (Sea Lamprey) [1095] • *Lampetra planeri* (Brook Lamprey) [1096] • *Salmo salar* (Salmon) [1106 • *Lutra lutra* (Otter) [1355] • *Najas flexilis* (Slender Naiad) [1833]	• Pollution events (including hydrocarbon spills) • Reduction in surface and groundwater quality including sedimentation and elevated levels of suspended solids • Indirect loss of foraging habitat • Disturbance (including lighting)	Construction Operation Decommissioning
Lough Corrib SPA (004042)	• Pochard (*Aythya ferina*) [A059] • Tufted Duck (*Aythya fuligula*) [A061] • Common Scoter (*Melanitta nigra*) [A065] • Hen Harrier (*Circus cyaneus*) [A082] • Coot (*Fulica atra*) [A125] • Golden Plover (*Pluvialis apricaria*) [A140] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Common Gull (*Larus canus*) [A182] • Common Tern (*Sterna hirundo*) [A193]	• Pollution events (including hydrocarbon spills) • Reduction in water quality, including sedimentation and elevated levels of suspended solids • Collision risk • Indirect loss of foraging habitat • Disturbance	Construction Operation Decommissioning

European Site (Site Code)	QIs/SCIs for which LSE Identified	Potential Impact(s)	Project Phase
	• Arctic Tern (*Sterna paradisaea*) [A194] • Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] • Shoveler (*Spatula clypeata*) [A857] • Gadwall (*Mareca strepera*) [A889] • Wetland and Waterbirds [A999]		
Shrule Turlough SAC (000525)	• Turloughs [3180]	• Pollution events (including hydrocarbon spills) • Reduction groundwater quality and level, including sedimentation and elevated levels of suspended solids	Construction Operation Decommissioning

6. APPROPRIATE ASSESSMENT

Where potential for LSE on a European Site has been identified, there is a requirement to consider whether those effects will undermine the integrity of the European Site in view of its conservation objectives. The information for the European Sites, namely the Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525), is presented below, followed by a detailed assessment of the potential effects on screened in QIs/SCIs and their conservation objectives.

6.1. Cloughmoyne SAC (000479)

6.1.1. Qualifying Interests of Cloughmoyne SAC (000479)

The SAC adjoins the proposed project along the southwestern boundary. Based on the physical proximity and connectivity, and the functional requirements of the QI for which it has been designated, this site was screened in due to the potential for the proposed project to compromise the conservation objectives of the site's QI, primarily as a result of nearby disturbance of the bedrock and associated air pollution and possible surface water deterioration effects.

The sole QI Limestone pavements* [8240], a priority habitat, was screened in for further assessment.

6.1.2. Conservation Objectives of Qualifying Interest

6.1.2.1. Limestone pavements* [8240]

Limestone pavements* in Cloughmoyne SAC exhibit a good example of the shattered form of the habitat, which occurs in intimate association with species-rich calcareous grassland, juniper *(Juniperus communis)* scrub and heath habitats (NPWS, 2019). Therefore, these habitats cannot easily be mapped or considered separately. Indicative areas of the Limestone pavement in the SAC were mapped, including mosaics with associated habitats, as 45.2 ha (NPWS, 2019). The habitat mosaic in the SAC supports two rare and legally protected (Flora Protection Order, 1999) species, limestone fern (*Gymnocarpium robertianum)* and wood bitter-vetch (*Vicia orobus*) (NPWS, 2013). According to the Article 17 Report (NPWS, 2025), the overall Conservation Status for this habitat is 'Inadequate' and the Conservation Trend is 'Stable'.

The Conservation Objective for Limestone pavements [8240] is *"To restore the favourable conservation condition of Limestone pavements* in Cloughmoyne SAC".*

Attributes and targets:

- Habitat area: area stable or increasing, subject to natural processes.
- Habitat distribution: no decline. Map 2 shows indicative distribution, including mosaics with other habitats.
- Vegetation composition:
    - Positive indicator species: at least seven positive indicator species present.
    - Bryophyte layer: bryophyte cover at least 50% on wooded pavement (2013).
    - Negative indicator species: collective cover of negative indicator species on exposed pavement not more than 1%.

- Non-native species: cover of non-native species not more than 1% on exposed pavement; on wooded pavement not more than 10% with no regeneration.
- Scrub: scrub cover no more than 25% of exposed pavement.
- Bracken cover: bracken (Pteridium aquilinum) cover no more than 10% on exposed pavement.

- Vegetation structure:
  - Woodland canopy: canopy cover on wooded pavement at least 30%.
  - Dead wood: sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms.
- Physical structure: disturbance: no evidence of grazing pressure on wooded pavement.
- Indicators of local distinctiveness: indicators of local distinctiveness are maintained.

6.1.3. Assessment of Effects on Cloughmoyne SAC (000479)

The impacts of the proposed project on the lone QI of this SAC are considered below, taking into account the Conservation Objective "*To restore the favourable conservation condition of Limestone pavements* in Cloughmoyne SAC*" and in consideration of its attributes and targets shown above.

The proposed project is located outside of the SAC but the proposed wind farm site adjoins it along the southwest boundary. The nature of the Limestone pavements habitat in this SAC is such that it occurs in intimate association with species-rich calcareous grassland, juniper (*Juniperus communis*) scrub and heath habitats. The indicative location of the QI is mainly on hilly land in the eastern part of the SAC, extending to the shared boundary with the proposed project (NPWS, 2019). There are some clint and gryke features in addition to mostly shattered pavement with loose limestone rubble. A number of positive indicator species were recorded in the SAC. The bedrock plays an essential role in the character and quality of the Limestone pavement habitat.

Areas of Annex I Limestone Pavement [8240] also occur within the proposed wind farm site outside the SAC boundary. These habitats do not form part of Cloughmoyne SAC and are not considered functionally connected to the QI habitat within the SAC. Furthermore, direct impacts on limestone pavement within the proposed project area have been avoided through the iterative design process and no loss of this ex-situ Annex I habitat will occur.

Potential impacts are presented in Table **2** (see **Section 5**). Such effects could lead to nutrient enrichment, altering soil chemistry and conditions and the environmental factors supporting limestone pavement, a characteristically low-nutrient habitat, particularly with respect to targets specified under the attributes: Habitat area, Habitat distribution and Vegetation composition (including positive indicator species).

Dust deposition arising from construction phase activities has the potential to negatively affect habitats occurring adjacent to any construction works. The SAC is located approximately 60 m and 80 m from T3 and T4, respectively, while the borrow pit is approximately 2.06 km away. While these distances are beyond the zone within which the majority of construction-generated dust deposition is predicted to occur (refer to **EIAR Chapter 14**), dust generated during the construction phase has the potential to degrade habitat conditions through the suppression of photosynthesis and alteration of soil chemistry. In limestone pavement, a characteristically low-nutrient habitat, sustained dust deposition may lead to nutrient enrichment within grikes and soil pockets, promoting more competitive species and resulting in the loss of lichens, bryophytes and other stress-tolerant

specialists, as well as increased scrub or grass vigour where grazing pressure is low. This would affect specific conservation objectives relating to habitat area, distribution and characteristic species combinations. However, such effects are likely to be temporary and confined to the construction phase. The introduction or spread of invasive species *via* construction machinery, soil movement or imported materials (e.g. from the adjoining quarry) represents a potential longer-term impact pathway in the absence of mitigation.

There is no identified hydrological or hydrogeological pathway between the proposed wind farm site and Cloughmoyne SAC. However, given the proximity of construction works to the SAC boundary, a potential surface runoff pathway cannot be entirely excluded. In the absence of appropriate controls, accidental releases of hydrocarbons, cementitious materials or sediment-laden runoff could affect the quality of adjacent habitats within the SAC. This QI habitat in Cloughmoyne SAC occurs in hilly areas associated with dry calcareous grassland and juniper scrub, and changes in hydrological regime was not recorded as being a threat to this habitat (NPWS, 2025). Nevertheless, in the absence of mitigation, pollution-related effects on this European Site have the potential to adversely affect the condition of limestone pavement.

6.2. Lough Corrib SAC (000297)

6.2.1. Qualifying Interests of Lough Corrib SAC (000297)

Lough Corrib SAC (000297) is a large and ecologically significant freshwater lake in western Ireland, spanning parts of counties Galway and Mayo. It is designated as a Special Area of Conservation under the EU Habitats Directive due to its wide variety of habitats and species of European interest.

The Lough Corrib SAC lies in close proximity to the proposed wind farm site, with its boundary located approximately 147 m to the east. There is a downstream hydrological connection through the Rooaunalaghta Stream (EPA Code: 30R03) to the Black River in the SAC, of c. 675 m. The proposed GCR also crosses the Black River within the SAC. Based on the physical proximity and connectivity, and the functional requirements of the QIs for which it has been designated, this site was screened in due to the potential for the proposed project to compromise the conservation objectives of the site's QIs, through S-P-R resulting in water quality deterioration, as well as possible disturbance to QI species.

Annex I habitats present within the proposed wind farm site, including Semi-natural dry grasslands and scrubland facies on calcareous substrates [6210] and European dry heaths [4030] (see **Section 3.2.1**), were not screened in for Stage 2 AA. These habitats are not hydrologically or functionally connected to the QIs of Lough Corrib SAC and, accordingly, impacts on these ex-situ Annex I habitats would not affect the conservation objectives or integrity of the SAC.

Having regard to the identified S-P-R linkages, the following QIs have been screened in for further assessment:

- Oligotrophic waters containing very few minerals of sandy plains *(Littorelletalia uniflorae)* [3110]
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto Nanojuncetea* [3130]
- 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]

- *Austropotamobius pallipes* (White-clawed Crayfish) [1092]
- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra planeri* (Brook Lamprey) [1096]
- *Salmo salar* (Salmon) [1106
- *Lutra lutra* (Otter) [1355]
- *Najas flexilis* (Slender Naiad) [1833]

6.2.2. Conservation Objectives of Qualifying Interests

6.2.2.1. Oligotrophic waters containing very few minerals of sandy plains (*Littorelletea uniflorae*) [3110]

The lake habitats in Lough Corrib SAC were mapped (NPWS, 2017) in terms of whether they were the dominant habitat, and whether potentially occurring. The Oligotrophic waters containing very few minerals of sandy plains lake habitat dominates in the north-western arm of the lake, where the characteristic species slender naiad (*Najas flexilis*) was recorded, but the habitat also occurs as a component of areas that are dominated by one of the other two lake habitats. The divisions between lake habitats is not absolute, as the waters mix and each habitat may occur throughout the lake. The Article 17 Report (NPWS, 2025) states that the overall Conservation Status for [3110] lake habitat is 'Unfavourable-Bad', and the overall Conservation Trend is 'Stable'.

The Conservation Objective for [3110] lake habitat is "*To restore the favourable conservation condition of Oligotrophic waters containing very few minerals of sandy plains (Littorelletea uniflorae) in Lough Corrib SAC.*"

Attributes and targets:

- Habitat area: area stable or increasing, subject to natural processes.
- Habitat distribution: no decline, subject to natural processes.
- Typical species: typical species present, in good condition, and demonstrating typical abundances and distribution.
- Vegetation composition: characteristic zonation: All characteristic zones should be present, correctly distributed and in good condition.
- Vegetation distribution: maximum depth: restore maximum depth of vegetation, subject to natural processes.
- Hydrological regime: water level fluctuations: maintain appropriate natural hydrological regime necessary to support the habitat.
- Lake substratum quality: restore appropriate substratum type, extent and chemistry to support the vegetation.
- Water quality:
    - Transparency: restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency.
    - Nutrients: restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species.
    - Phytoplankton biomass: restore appropriate water quality to support the habitat, including high chlorophyll a status.
    - Phytoplankton composition: maintain appropriate water quality to support the habitat, including high phytoplankton composition status.
    - Attached algal biomass: restore/maintain trace/absent attached algal biomass.
    - Macrophyte status: maintain high macrophyte status.

- Acidification status: maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes.
- Water colour: restore/maintain appropriate water colour to support the habitat.
- Dissolved organic carbon (DOC): restore/maintain appropriate organic carbon levels to support the habitat.
- Turbidity: restore/maintain appropriate turbidity to support the habitat.
- Fringing habitat: area and condition: maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3110.

6.2.2.2. Oligotrophic to mesotrophic standing waters with vegetation of *the Littorelletea uniflorae* and/or *Isoëto-Nanojuncetea* [3130]

The lake habitats in Lough Corrib SAC were mapped (NPWS, 2017) in terms of whether they were the dominant habitat, and whether potentially occurring. The Oligotrophic to mesotrophic standing waters with vegetation lake habitat dominates in the lower part of the lake and in the north-eastern part but the habitat also occurs as a component of areas that are dominated by one of the other two lake habitats. The divisions between lake habitats is not absolute, as the waters mix. The Article 17 Report (NPWS, 2025) states that the overall Conservation Status for [3130] lake habitat is 'Unfavourable-Inadequate', and the overall Conservation Trend is 'Declining'.

The Conservation Objective for [3130] lake habitat is *"To restore the favourable conservation condition of Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoëto-Nanojuncetea in Lough Corrib SAC".*

Attributes and targets:

- Habitat area: area stable or increasing, subject to natural processes.
- Habitat distribution: no decline, subject to natural processes.
- Typical species: typical species present, in good condition, and demonstrating typical abundances and distribution.
- Vegetation composition: characteristic zonation: all characteristic zones should be present, correctly distributed and in good condition.
- Vegetation distribution: maximum depth: restore maximum depth of vegetation, subject to natural processes.
- Hydrological regime: water level fluctuations: maintain appropriate natural hydrological regime necessary to support the habitat.
- Lake substratum quality: restore appropriate substratum type, extent and chemistry to support the vegetation.
- Water quality:
    - Transparency: restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency.
    - Nutrients: restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species.
    - Phytoplankton biomass: restore appropriate water quality to support the habitat, including high chlorophyll a status.
    - Phytoplankton composition: maintain appropriate water quality to support the habitat, including high phytoplankton composition status.
    - Attached algal biomass: restore/maintain trace/absent attached algal biomass.
    - Macrophyte status: maintain high macrophyte status.

- Acidification status: maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes.
- Water colour: restore/maintain appropriate water colour to support the habitat.
- DOC: Restore/maintain appropriate organic carbon levels to support the habitat.
- Turbidity: restore/maintain appropriate turbidity to support the habitat.
- Fringing habitat: area and condition: maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3130.

6.2.2.3. Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.* [3140]

The lake habitats in Lough Corrib SAC were mapped (NPWS, 2017) in terms of whether they were the dominant habitat, and whether potentially occurring. The Hard oligotrophic waters with benthic vegetation of *Chara* spp. lake habitat dominates in the north-west part of the main lake ([3110] dominates in the north-west "arm") but the habitat also occurs as a component of areas that are dominated by one of the other two lake habitats. The divisions between lake habitats are not absolute, as the waters mix. The habitat is dominated by algae, particularly stoneworts (*Chara* spp.). Ireland has some of the best European examples of the hard-water lake habitat and, as a result, particular responsibility for maintaining/restoring this natural habitat at *Favourable* conservation status within the EU. The hard-water lake habitat is under significant pressure from eutrophication, the primary sources of nutrients and organic material being agriculture and municipal and industrial wastewaters. Movement of pollutants, especially phosphorus, through ground water is a significant concern. The Article 17 Report (NPWS, 2025) states that the overall Conservation Status for [3140] lake habitat is 'Unfavourable-Bad' and the overall Conservation Trend is 'Declining'.

The Conservation Objective for [3140] lake habitat is *"To restore the favourable conservation condition of Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. in Lough Corrib SAC".*

Attributes and targets:

- Habitat area: area stable or increasing, subject to natural processes.
- Habitat distribution: no decline, subject to natural processes.
- Typical species: typical species present, in good condition, and demonstrating typical abundances and distribution.
- Vegetation composition – characteristic zonation: All characteristic zones should be present, correctly distributed and in good condition.
- Vegetation distribution – maximum depth: restore maximum depth of vegetation, subject to natural processes.
- Hydrological regime: water level fluctuations - Maintain appropriate natural hydrological regime necessary to support the habitat.
- Lake substratum quality - Restore appropriate substratum type, extent and chemistry to support the vegetation.
- Water quality:
    - Transparency: restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency.
    - Nutrients: restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species.
    - Phytoplankton biomass: restore appropriate water quality to support the habitat, including high chlorophyll a status.
    - Phytoplankton composition: maintain appropriate water quality to support the habitat, including high phytoplankton composition status.

- Attached algal biomass: restore/maintain trace/absent attached algal biomass
- Macrophyte status: maintain high macrophyte status.

- Acidification status: maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes.
- Water colour: restore/maintain appropriate water colour to support the habitat.
- DOC: restore/maintain appropriate organic carbon levels to support the habitat.
- Turbidity: restore/maintain appropriate turbidity to support the habitat.
- Fringing habitat – area and condition: maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3140.

6.2.2.4. Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]

A number of rivers in the SAC support the submerged and floating vegetation of this habitat, including shining pondweed (*Potamogeton lucens*), perfoliate pondweed (*Potamogeton perfoliatus*), small pondweed (*P. berchtoldii*), yellow water lily (*Nuphar lutea*), white water-lily (*Nymphaea alba*), stoneworts (*Chara* spp.) and mosses (NPWS, 2022). There is little known about the distribution, characteristics or sub-types of the habitat in Lough Corrib SAC (NPWS, 2017). Site-specific objectives for the habitat concentrate upon high conservation value sub-types. Many of the rivers included in the Lough Corrib SAC are in arterial drainage scheme which have altered aquatic plant distribution and species composition. According to the NPWS Article 17 Report (NPWS,2025) the habitat has a broad definition, covering from upland, flashy, oligotrophic, bryophyte- and algal-dominated rivers, to tidal reaches dominated by higher plants. In Ireland, the highest conservation interest is associated with lowland depositing and tidal rivers and unmodified, fast-flowing, low-nutrient rivers. Crow-foot dominated reaches typically have low species diversity and generally poor condition and damage. The main problems for river habitats in Ireland are damage through hydrological and morphological change, eutrophication and other water pollution. Agriculture and municipal and industrial discharges are the most significant sources of nutrient and organic pollution. The overall Conservation Status for this habitat is 'Unfavourable-Inadequate' and the Conservation Trend is 'Declining'.

The Conservation Objective for [3260] river habitat is *"To maintain the favourable conservation condition of water courses of plain to montane levels with the Ranunculion fluitantis and CallitrichoBatrachion vegetation in Lough Corrib SAC"*.

Attributes and targets:

- Habitat area: area stable or increasing, subject to natural processes.
- Habitat distribution: no decline, subject to natural processes.
- Hydrological regime:
    - River flow: maintain appropriate hydrological regimes.
    - Groundwater discharge: maintain appropriate hydrological regimes.
- Substratum composition: particle size range: maintain appropriate substratum particle size range, quantity and quality, subject to natural process.
- Water quality: maintain appropriate water quality to support the natural structure and functioning of the habitat.
- Riparian habitat area: maintain the area and condition of fringing habitats necessary to support the habitat and its sub-types.
- Vegetation composition – typical species: typical species of the relevant habitat sub-type should be present and in good condition.

- Floodplain connectivity area: the area of active floodplain at and upstream of the habitat should be maintained.

6.2.2.5. White-clawed Crayfish *(Austropotamobius pallipes)* [1092]

White-clawed crayfish is known to occur within the aquatic habitats of the SAC, as shown in the distribution map in Map 10 of the SSCO (NPWS, 2017). The total distribution of white-clawed crayfish is unknown. Potential white-clawed crayfish habitat is present adjacent and downstream of the proposed project, however aquatic field survey carried out to inform the EIAR and NIS for the proposed project did not find any evidence of white-clawed crayfish. According to the Article 17 Report (NPWS, 2025), the overall Conservation Status for this species is 'Unfavourable-Bad' and the overall Conservation Trend is 'Declining'.

The Conservation Objective for White-clawed Crayfish is *"To maintain the favourable conservation condition of White-clawed Crayfish in Lough Corrib SAC"*.

Attributes and targets:

- Distribution rivers: no reduction from baseline.
- Distribution – Lough Corrib: no reduction from baseline.
- Population structure: recruitment: juveniles and/or females with eggs in all occupied tributaries and occupied parts of Lough Corrib.
- Negative indicator species: no alien crayfish species.
- Disease: no instances of disease.
- Water quality: at least Q3-4 at all sites sampled by EPA.
- Habitat quality – heterogeneity: no decline in heterogeneity or habitat quality.

6.2.2.6. Sea Lamprey *(Petromyzon marinus)* [1095]

Sea lamprey is known to occur within the aquatic habitat of the SAC, but no specific distribution map is available for this species within the SSCO document (NPWS, 2017). According to the Article 17 Report (NPWS, 2025), the overall Conservation Status for sea lamprey is 'Unfavourable-Bad' and the overall Conservation Trend is 'Stable'. Sea lamprey traditionally congregate and build spawning nests in the River Corrib in Galway city, both up- and downstream of the Salmon Weir Bridge. Their further upstream passage is impeded by the regulating weir immediately upstream. It is therefore unlikely that this species is present in the rivers in the vicinity of the proposed project. However, adopting the precautionary principle, presence is assumed.

The Conservation Objective for Sea Lamprey is *"To restore the favourable conservation condition of Sea Lamprey in Lough Corrib SAC".*

Attributes and targets:

- Distribution – extent of anadromy: greater than 75% of main stem length of rivers accessible from estuary.
- Population structure of juveniles: at least three age/size groups present.
- Juvenile density in fine sediment: mean catchment juvenile density at least 1/m².
- Extent and distribution of spawning habitat: no decline in extent and distribution of spawning beds.
- Availability of juvenile habitat: more than 50% of sample sites positive, with a minimum of four positive sites in a catchment, which are at least 5 km apart.

6.2.2.7. Brook Lamprey (*Lampetra planeri)* [1096]

Brook lamprey is known to occur within the aquatic habitat of the SAC, but no specific distribution map is available for this species within the SSCO document (NPWS, 2017). According to the Natura 2000 Form, permanent brook lamprey populations are present within the SAC. Field survey for this study identified suitable lamprey habitat within the watercourses. According to the Article 17 Report (NPWS, 2025), the overall Conservation Status for Brook Lamprey is 'Favourable' and the overall Conservation Trend is 'Stable'.

The Conservation Objective for Brook Lamprey is *"To maintain the favourable conservation condition of Brook Lamprey in Lough Corrib SAC"*.

Attributes and targets:

- Distribution: access to all watercourses down to first order streams.
- Population structure of juveniles: at least three age/size groups of brook/river lamprey present.
- Juvenile density in fine sediment: mean catchment juvenile density of brook/river lamprey at least 5/m².
- Extent and distribution of spawning habitat: no decline in extent and distribution of spawning beds.
- Availability of juvenile habitat: more than 50% of sample sites positive.

6.2.2.8. Salmon *(Salmo salar)* [1106]

Salmon is known to occur within the aquatic habitat of the SAC, but no specific distribution map is available for this species within the SSCO document (NPWS, 2017). However, there are no barriers to its migration in Lough Corrib SAC. Salmon are known to spawn in the headwaters of Lough Corrib tributaries. According to the Natura 2000 Form, reproducing salmon populations are common within the SAC. During the field surveys for this study Salmonid habitat was observed and Salmonid fry were recorded in the catchment of the proposed project. According to the Article 17 Report (NPWS, 2025), the overall Conservation Status for Atlantic Salmon is 'Unfavourable-Inadequate' and the overall Conservation Trend is 'Stable'.

The Conservation Objective for Salmon is *"To maintain the favourable conservation condition of Salmon in Lough Corrib SAC".*

Attributes and targets:

- Distribution – extent of anadromy: 100% of river channels down to second order accessible from estuary.
- Adult spawning fish: conservation Limit (CL) for each system consistently exceeded.
- Salmon fry abundance: maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling.
- Out-migrating smolt abundance: no significant decline.
- Number and distribution of redds: no decline in number and distribution of spawning redds due to anthropogenic causes.
- Water quality: At least Q4 at all sites sampled by EPA.

6.2.2.9. Otter (*Lutra lutra)* [1355]

Otter is known to occur within the aquatic habitat of the SAC, and otter commuting territory is shown in the distribution map in Map 12 of the SSCO (NPWS, 2017). According to the Article 17 Report (NPWS,

2025), the overall Conservation Status for Otter is 'Favourable', and the overall Conservation Trend is 'Improving'. Field surveys confirmed recent otter activity, with field signs concentrated along the Black River, particularly near the eastern boundary of the proposed wind farm as well as near the GCR crossing of the Black River (EPA Segment Codes: 30_1502, 30_1506, 30_1507 and 30_1407) and also at the Shancloon Stream, downstream of the proposed 110 kV substation (see **EIAR Appendix 6-3, Figure 7**).

The Conservation Objective for Otter is *"To maintain the favourable conservation condition of Otter in Lough Corrib SAC".*

Attributes and targets:

- Distribution: no significant decline.
- Extent of terrestrial habitat: no significant decline. Area mapped and calculated as 1,054 ha along riverbanks/ lake shoreline/around ponds.
- Extent of freshwater (river) habitat: no significant decline. Length mapped and calculated as 314.2 km.
- Extent of freshwater (lake) habitat: no significant decline. Area mapped and calculated as 4,178ha.
- Couching sites and holts: no significant decline.
- Fish biomass available: no significant decline.
- Barries to connectivity: no significant increase.

6.2.2.10. Slender Naiad (*Najas flexilis)* [1833]

According to the SSCO supporting document for *Najas flexilis* in Lough Corrib SAC (NPWS, 2017a) it is acknowledged that it is likely to be difficult to map and measure the area of slender naiad habitat in a lake. Slender naiad is typically associated with high water quality, i.e., the absence of eutrophication impacts. The known habitat of Slender naiad in Lough Corrib SAC is in the north-western "arm" of Lough Corrib (see Map 13 of the SSCO document (NPWS, 2017), where the dominant lake habitat is Oligotrophic waters containing very few minerals of the sandy plains (*Littoretalia uniflorae* [3110]). Where other lake habitats dominate in the northern part of the main lake ([3130], [3140]), these have been identified as being potential slender naiad habitat. According to the Article 17 Report (NPWS, 2025), slender naiad is considered to have gone extinct from six lakes in Ireland. The overall Conservation Status in the Article 17 Report for *Najas flexilis* is 'Unfavourable-Inadequate' and the overall Conservation Trend is 'Declining' (NPWS, 2025).

The Conservation Objective for Slender naiad is *"To restore the favourable conservation condition of Slender Naiad in Lough Corrib SAC".*

Attributes and targets:

- Population extent: restore the spatial extent of *Najas flexilis* within the lake, subject to natural processes.
- Population depth: restore the depth range of *Najas flexilis* within the lake, subject to natural processes.
- Population viability: restore plant fitness, subject to natural processes.
- Population abundance: restore the cover abundance of *Najas flexilis*, subject to natural processes.
- Species distribution: restore to at least the north-western bay, subject to natural processes.
- Habitat extent: restore, subject to natural processes.

- Hydrological regime – water level fluctuations: maintain appropriate natural hydrological regime necessary to support the habitat for the species.
- Lake substratum quality: restore appropriate substratum type, extent and chemistry to support the population of the species.
- Water quality: restore appropriate water quality to support the population of the species.
- Acidification status: maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the population of *Najas flexilis*, subject to natural processes.
- Water colour: restore/maintain appropriate water colour to support the population of *Najas flexilis.*
- Associated species: restore appropriate associated species and vegetation communities to support the population of *Najas flexilis*.
- Fringing habitat – area and condition: maintain the area and condition of fringing habitats necessary to support the population of *Najas flexilis*.

6.2.3. Assessment of effects on Lough Corrib SAC (000297)

The impacts of the proposed project on the QIs of this SAC are considered below, taking into account the individual Conservation Objectives presented in **Section 6.2.1** and the details presented in NPWS (2017).

6.2.3.1. Aquatic habitats and species, and otter

As described in **Section 6.2.2.2**, the proposed project is hydrologically connected to Lough Corrib SAC. Aquatic habitats and species QIs vulnerable to impacts are as follows:

- Aquatic habitats
    - Oligotrophic waters [3110]
    - Oligotrophic to mesotrophic standing waters [3130]
    - Hard oligo-mesotrophic waters [3140]
    - Water courses of plain to montane levels [3260]
- Aquatic species
    - White-clawed Crayfish [1092]
    - Slender Naiad [1833]
    - Brook Lamprey [1096]
    - Sea Lamprey [1095]
    - Salmon [1106]
- Terrestrial species (requiring aquatic habitats): *Lutra lutra* (Otter) [1355]

Potential impacts associated with the proposed project (see Table **2**) include increases in suspended solids, sedimentation, nutrient enrichment and hydrocarbon contamination, which may result in deterioration in water quality, including reduced dissolved oxygen levels. The aquatic habitats and species QIs of Lough Corrib SAC, including those of the lake habitat QIs ([3110], [3130], [3140]) are vulnerable to any deterioration in water quality. The hydrological distance from the proposed project to Lough Corrib (lake) is approximately 11 km, through the Black River, which meanders through agricultural countryside. Any substances released into the hydrological pathway would have undergone a certain amount of dilution and sedimentation before reaching the lake waters.

Water quality surveys undertaken for the proposed project indicated mainly good water quality in the Black River (EPA Code: 30B02), with some influence of agricultural enrichment in one part (Site WQ01 on the Rooaunalaghta tributary (EPA Code: 30_1503).

The river habitat QI (Water courses of plain to montane levels [3260]) may occur along the Black River (EPA Code: 30B02) part of the SAC, 147 m distant (EPA Code: 30B02) and c. 675 m through a downstream hydrological pathway to the Black River (EPA Code: 30R03). A significant pollution event arising from the proposed project could introduce elevated levels of sediment and associated nutrients, particularly phosphorus, promoting algal growth and more tolerant macrophyte species. This may result in a reduction in habitat area, changes in vegetation composition, and a contraction in the habitat's range. Any occurrences of this nature could also affect the lake habitat QIs, which are located in Lough Corrib.

NPWS (2017) showed the location of Slender naiad [1833] as a specific north-west arm of Lough Corrib, but with potential for it to be found elsewhere in northern half of the lake, therefore a hydrological distance of at least approximately 11 km.

The Black River supports sensitive fish receptors including salmon and lamprey species, which have been recorded within the river and in watercourses in close proximity to the proposed project. Salmon is distributed throughout the waters of the SAC (NPWS, 2017). There are no barriers to migration of salmon [1106] in Lough Corrib SAC. Salmon spawn in the headwaters of Lough Corrib tributaries. Areas of potential salmonid spawning habitat were identified in surveys for the proposed project; mixed juvenile habitat was present, and salmonids were observed feeding during the survey, with undercut banks and tunnelled vegetation providing additional cover for adult fish. Equally for the lamprey QIs ([1096] and [1095]), aquatic habitats with suitable substrate and flow conditions were found in the Black River along EPA Segment code 30_3722, approximately 2.3 km downstream from the proposed project (see **EIAR Chapter 6, Section 6.4.4.6** and **EIAR Appendix 6-5**).

White-clawed crayfish [1092] have been recorded throughout the Lough Corrib catchment[11], and occurrences are mapped (NPWS, 2017). No records were shown for the Black River area, the nearest locations being near the shores of Lough Corrib to the south, and in the Grange and Abbert Rivers. Surveys undertaken for the proposed project recorded no evidence of crayfish despite there being suitable habitat present along EPA Segment Codes 30_3722 and 30_1407 (see **EIAR Chapter 6, Section 6.4.4.6** and **Appendix 6-5**). This absence may be attributed to the spread of the crayfish plague, caused by the water mould *Aphonomyces astaci*, which has been recently reported within the wider Lough Corrib catchment (2020/21)[12] and may indicate local loss of the species from this part of the river system.

Otter depends on both aquatic and terrestrial habitats. The maps in the NPWS CO document for this SAC (NPWS, 2017) show that otter is in Lough Corrib, and there are other records from elsewhere in the vicinity of the SAC. Otter was also recorded in the proposed project site during biodiversity surveys for the proposed project (see **EIAR Chapter 6, Section 6.4.4.2**). Spraints were recorded at four locations along the Black River in August 2026 (EPA Segment Codes: 30_1502, 30_1506, 30_1507 and 30_1407), confirming regular use of the river corridor by foraging and commuting otter. An additional old spraint was recorded on the Cloghmoyne Stream (EPA Code: 30C80), indicating occasional or seasonal use of this tributary. No resting or breeding sites were identified along the stretches of the Black River (EPA Code: 30B02) surveyed.

[11] Department of Culture, Heritage and the Gaeltacht (2019). Crayfish Plague Status, August 2019. https://invasives.ie/app/uploads/2021/09/Crayfish-plague-map-20190820.pdf.

[12] Update on Crayfish Plague in Ireland. Fish health Unit.

Otter disturbance buffers typically include 30 m for a holt or couch and 150 m for a natal den in line with appropriate NRA (2008) and NIEA (2011) guidance. These distances are outside the distance of the proposed project from the SAC. However, otter are highly mobile, typically having a home range of approximately 7.5 km ± 1.5 km (SD), with males ranging up to c. 19.3 km, and therefore there remains potential for adverse effects on the species, both directly through disturbance and indirectly through impacts on prey. Any deterioration of water quality caused by the release during operations of silt and sediment, chemicals including hydrocarbons and other substances, which may enter the hydrological pathway could affect prey availability.

Due to the sensitivity of the aquatic habitats and species of Lough Corrib SAC, including otter, adverse effects on the integrity of this European Site could arise through deterioration in water quality, alterations to aquatic habitat conditions, or disturbance associated with the proposed project.

6.3. Lough Corrib SPA (004042)

6.3.1. SCIs of Lough Corrib SPA (004042) Screened In

Lough Corrib SPA (004042) is one of Ireland's most important inland waterbird sites, the lake extending to more than 18,000 ha. The main inflowing rivers are the Black, Clare, Dooghta, Cregg, Owenriff and the channel from Lough Mask. The main outflowing river is the Corrib, which reaches the sea at Galway City (NPWS, 2014). It is designated under the EU Birds Directive due to its international importance for breeding and wintering bird populations. The SPA supports a range of SCIs, including wetland and waterbird species. The lake's numerous islands provide important nesting and roosting habitat for these species (NPWS, 2014; 2023).

The Lough Corrib SPA is located c. 2.9 km from the proposed wind farm site, with a direct downstream connection of c. 9.8 km from the proposed project to the SPA at Lough Corrib through the Rooaunalaghta Stream[13]. Based on the distance between the proposed project and the SPA, the hydrological connectivity and the functional requirements of the SCIs for which the SPA was designated, this site was screened in due to the potential for the proposed project to compromise the conservation objectives of the site's SCIs through S-P-R resulting in water quality deterioration, as well as ecological connectivity considering the foraging range of the SCIs for which this European Site is designated. As such, the following SCIs have been screened in for further assessment:

- Pochard (*Aythya ferina*) [A059]
- Tufted Duck (*Aythya fuligula*) [A061]
- Common Scoter (*Melanitta nigra*) [A065]
- Hen Harrier (*Circus cyaneus*) [A082]
- Coot (*Fulica atra*) [A125]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Common Tern (*Sterna hirundo*) [A193]
- Arctic Tern (*Sterna paradisaea*) [A194]
- Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
- Shoveler (*Spatula clypeata*) [A857]

[13] See EPA maps using OSM basemap and Appropriate Assessment tool (EPA Maps), last visited 23/06/2026.

- Gadwall (*Mareca strepera*) [A889]
- Wetland and Waterbirds [A999]

Lough Corrib SPA is vulnerable to threats such as water pollution, invasive species (notably zebra mussel), drainage, agricultural intensification, and peat extraction.

6.3.2. Conservation Objectives of Special Conservation Interests

6.3.2.1. Gadwall *(Anas strepera)*

The National population of over-wintering gadwall in Ireland increased by 24% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al.,* 2022). However, in Lough Corrib SPA the gadwall population reduced by 40% between surveys undertaken in the periods between 1995-2000 and 2012-2017, and most recent data showed a population of 29 gadwall using the SPA (NPWS,2023).

The Conservation Objective for Gadwall is *"To restore the favourable conservation condition of gadwall in Lough Corrib SPA".*

Attributes and targets:

- Winter population trend: long term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.
- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.

6.3.2.2. Shoveler *(Anas clypeata)*

The National population of over-wintering shoveler in Ireland declined by 11% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al*., 2022). In Lough Corrib SPA the shoveler population reduced by 84% between surveys undertaken in the periods between 1995-2000 and 2012-2017, and most recent data showed a population of 15 shoveler using the SPA (NPWS,2023).

The Conservation Objective for Shoveler is *"To restore the favourable conservation condition of shoveler in Lough Corrib SPA"*.

Attributes and targets:

- Winter population trend: long-term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.

- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.

6.3.2.3. Pochard *(Aythya ferina)*

The National population of over-wintering pochard in Ireland declined by 79% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al*., 2022). In Lough Corrib SPA the pochard population reduced by 94% between surveys undertaken in the periods between 1995-2000 and 2012-2017, and most recent data showed a population of 625 pochard using the SPA (NPWS,2023).

The Conservation Objective for Pochard is *"To restore the favourable conservation condition of pochard in Lough Corrib SPA".*

Attributes and targets:

- Winter population trend: long-term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.
- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.

6.3.2.4. Tufted Duck *(Aythya fuligula)*

The National population of over-wintering tufted duck in Ireland declined by 18% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al*., 2022). In Lough Corrib SPA, the tufted duck population reduced by 56% between surveys undertaken in the periods between 1995-2000 and 2012-2017. Most recent data showed a population of 2,399 tufted duck using the SPA (NPWS, 2023).

The Conservation Objective for Tufted Duck is *"To restore the favourable conservation condition of tufted duck in Lough Corrib SPA".*

Attributes and targets:

- Winter population trend: long-term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.
- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.

6.3.2.5. Common Scoter *(Melanitta nigra)*

The National population of breeding common scoter in Ireland has declined by 21% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al*., 2022). In Lough Corrib SPA, the common scoter population experienced an increase of 27% between surveys undertaken in the periods between 1995 and 2020 (NPWS, 2023). Most recent data showed a population of 30 potential breeding pairs of common scoter using the SPA (NPWS, 2023).

The Conservation Objective for Common Scoter is *"To maintain the favourable conservation condition of common scoter in Lough Corrib SPA".*

Attributes and targets:

- Breeding population trend: long-term trend is stable or increasing.
- Productivity rate: sufficient productivity to maintain the population trend as stable or increasing.
- Distribution of nesting habitat: no significant loss of distribution in the long term, other than that occurring due to natural patterns of variation.
- Extent and condition of nesting habitat: sufficient area of high-quality habitat to support the population target.
- Disturbance at breeding site: disturbance occurs at levels that do not significantly impact the achievement of targets for breeding population trend and spatial distribution of nesting habitat.
- Barriers to connectivity and site use: barriers do not significantly impact the breeding population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat, and available forage biomass to support the population target.

6.3.2.6. Hen Harrier *(Circus cyaneus)*

Lough Corrib SPA holds Ireland's largest freshwater lake, along with numerous islands. Its lake fringe (e.g., reedbeds, calcareous fens) and terrestrial habitats (e.g., raised bog, scrub, wet grassland, deciduous birch woodland) provide roosting and foraging options for hen harriers and other raptors during the non-breeding season (NPWS, 2023). The four-year mean peak recorded at this SPA (based on the period 2006/07 - 2009/10) was eight hen harriers (see NPWS, 2022). Counts (NPWS unpublished data) indicate numbers regularly attending this communal roost site in the SPA have fallen over the past decade or so, likely linked to declines in the Slieve Aughty Mountains SPA breeding population c. 30 km away and nationally (NPWS, 2022a).

The Conservation Objective for Hen Harrier is *"To restore the favourable conservation condition of hen harrier in Lough Corrib".*

Attributes and targets:

- Roost attendance: individual hen harriers: long-term winter population trend within the SPA is stable or increasing.
- Forage area spatial distribution, extent and abundance: sufficient extent of suitable habitats and biomass of available prey items across the site to help support the population.
- Roost spatial distribution and extent: sufficient number of locations, area of suitable roosting habitat to support the population.
- Disturbance at the roost site: human activities occur at levels that do not significantly impact upon wintering hen harrier.

6.3.2.7. Coot *(Fulica atra)*

The National population of over-wintering coot in Ireland declined by 23% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al*., 2022). In Lough Corrib SPA, the coot population reduced by 87% between surveys undertaken in the periods between 1995-2000 and 2012-2017 (NPWS, 2023). Most recent data showed a population of 1,912 coot using the SPA (NPWS, 2023).

The Conservation Objective for Coot is *"To restore the favourable conservation condition of coot in Lough Corrib SPA".*

Attributes and targets:

- Winter population trend: long-term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.
- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.

6.3.2.8. Golden Plover *(Pluvialis apricaria)*

The National population of over-wintering golden plover in Ireland declined by 54% from 1994/95 to 2019/20 (I-WeBS; Kennedy *et al*., 2022). In Lough Corrib SPA, the golden plover population increased by 21% between surveys undertaken in the periods between 1995-2000 and 2012-2017 (NPWS, 2023). Most recent data showed a population of 2,088 golden plover using the SPA (NPWS, 2023).

The Conservation Objective for Golden Plover is "*To maintain the favourable conservation condition of golden plover in Lough Corrib SPA".*

Attributes and targets:

- Winter population trend: long-term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.
- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
- Supporting habitat: area and quality: sufficient area of utilisable habitat available in ecologically important sites outside the SPA.

6.3.2.9. Black-headed Gull *(Chroicocephalus ridibundus)*

In Lough Corrib SPA, black-headed gull colonies have been recorded at multiple locations across Lough Corrib SPA (NPWS, 2023). Recent population estimates for breeding black-headed gull are estimated at 400 pairs (NPWS, 2023). These numbers represent a short-term decline from the 2010 population estimate of 51%.; they also represent an acute long-term decline from an estimated 3,000 breeding pairs in 1983 (NPWS, 2023).

The Conservation Objective for Black-headed Gull is *"To restore the favourable conservation condition of black-headed gull in Lough Corrib SPA".*

Attributes and targets:

- Breeding population size: long-term population is stable or increasing.
- Productivity rate: sufficient to maintain the population.
- Distribution: extent of available nesting options within the SPA: sufficient availability of suitable nesting sites throughout the SPA to maintain the population.
- Prey biomass available: sufficient extent of biomass of available prey items across the site to help support the population.
- Disturbance at the breeding site: disturbance occurs at levels that do not significantly impact on black-headed gull at the breeding site.
- Disturbance at areas ecologically connected to the colony: disturbance occurs at levels that do not significantly impact on black-headed gull at the breeding site.
- Barriers to Connectivity: no significant increase.

6.3.2.10. Common Gull *(Larus canus)*

Breeding common gull have been recorded at multiple locations across Lough Corrib SPA (NPWS, 2023). Recent population estimates for breeding common gull are 137 pairs. This represents a short-term decline from the 2010 population estimate of 50%, and a long-term decline of at least 74% in breeding pairs of common gull since surveys undertaken in 1983 (NPWS, 2023).

The Conservation Objective for Common Gull is "*To restore the favourable conservation condition of common gull in Lough Corrib SPA".*

Attributes and targets:

- Breeding population size: long-term population is stable or increasing.
- Productivity rate: sufficient to maintain the population.
- Distribution: extent of available nesting options within the SPA: sufficient availability of suitable nesting sites throughout the SPA to maintain the population.
- Prey biomass available: sufficient extent of biomass of available prey items across the site to help support the population.
- Disturbance at the breeding site: disturbance occurs at levels that do not significantly impact on common gull at the breeding site.
- Disturbance at areas ecologically connected to the colony: disturbance occurs at levels that do not significantly impact on breeding common gull.
- Barriers to connectivity: no significant increase.

6.3.2.11. Common Tern *(Sterna hirundo)*

Common tern has nested across several locations within Lough Corrib SPA (NPWS, 2023). Recent population estimates for breeding common tern are 6 pairs, representing a short-term decline of 73%. from a 2007 population estimate (NPWS, 2023).

The Conservation Objective for Common Tern is *"To restore the favourable conservation condition of common tern in Lough Corrib SPA".*

Attributes and targets:

- Breeding population size: long-term population is stable or increasing.
- Productivity rate: sufficient to maintain the population.
- Distribution: extent of available nesting options within the SPA: sufficient availability of suitable nesting sites throughout the SPA to maintain the population.
- Prey biomass available: sufficient extent of biomass of available prey items across the site to help support the population.
- Disturbance at the breeding site: disturbance occurs at levels that do not significantly impact on common tern at the breeding site.
- Disturbance at areas ecologically connected to the colony: disturbance occurs at levels that do not significantly impact on breeding common tern.
- Barriers to connectivity: no significant increase.

6.3.2.12. Arctic Tern *(Sterna paradisaea)*

Arctic tern has nested across several locations within Lough Corrib SPA (NPWS, 2023). Recent population estimates for breeding arctic tern are 10 pairs, representing a short-term decline of nearly 80% from a 2007 population estimate (NPWS, 2023).

The Conservation Objective for Arctic Tern is "*To restore the favourable conservation condition of Arctic tern in Lough Corrib SPA*".

Attributes and targets:

- Breeding population size: long-term population is stable or increasing.
- Productivity rate: sufficient to maintain the population.
- Distribution: extent of available nesting options within the SPA: sufficient availability of suitable nesting sites throughout the SPA to maintain the population.
- Prey biomass available: sufficient extent of biomass of available prey items across the site to help support the population.
- Disturbance at the breeding site: disturbance occurs at levels that do not significantly impact on Arctic tern at the breeding site.
- Disturbance at areas ecologically connected to the colony: disturbance occurs at levels that do not significantly impact on Arctic tern at the breeding site.
- Barriers to connectivity: no significant increase.

6.3.2.13. Greenland White-fronted Goose (*Anser albifrons flavirostris)*

The National population of Greenland white-fronted goose in Ireland declined by 13% from 1985 to 2018 (NPWS, 2023). In Lough Corrib SPA, the Greenland white-fronted goose population declined by 91% between surveys undertaken in the periods between 1994-1999 and 2016-2021 (NPWS, 2023). Recent data showed a population of 15 Greenland white-fronted goose using the SPA (NPWS, 2023).

The Conservation Objective for Greenland white-fronted goose is "*To restore the favourable conservation condition of* Greenland white-fronted goose *in Lough Corrib SPA*".

Attributes and targets:

- Winter population trend: long-term winter population trend is stable or increasing.
- Winter spatial distribution: sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target.
- Disturbance at wintering site: the intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution.
- Barriers to connectivity and site use: no significant impact on the wintering population's access to the SPA or other ecologically important sites outside the SPA.
- Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass to support the population target.
- Roost spatial distribution and extent: sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
- Supporting habitat: area and quality: sufficient area of utilisable habitat available in ecologically important sites outside the SPA.

6.3.2.14. Wetlands

Lough Corrib is an internationally important site that regularly supports in excess of 20,000 wintering waterbirds (NPWS, 2014). Any significant loss to the wetland habitat within the SPA would likely negatively impact the regularly occurring migratory waterbirds that utilize the wetland habitat, and thus negatively impact the Conservation Objectives for waterbird species listed as SCIs in the SPA (NPWS, 2023).

The Conservation Objective for the habitat is "*To maintain the favourable conservation condition of* wetlands *in Lough Corrib SPA".*

Attributes and targets:

- Wetland habitat area: no significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation.
- Wetland habitat quality and functioning: no significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation.

6.3.3. Assessment of Effects on Lough Corrib SPA (004042)

Potential impacts are presented in Table **2** (see **Section 5**). The effects of the proposed project on the SCIs of this SPA are considered below, taking into account the individual Conservation Objectives presented in **Section 6.2.1** and the details presented in NPWS (2023).

6.3.3.1. Water quality

With the exception of hen harrier, good water quality is important for all the SCI bird species and the wetlands SCI. There are downstream hydrological pathways from the proposed project to the SPA, from c. 9.8 km through the Rooaunalaghta Stream. There is a risk of deterioration of water quality during construction activities that could potentially result in alteration to surface water flow and quality within and downstream of the proposed project, including soil stripping to construct the access tracks, passing bays, borrow pit, temporary construction compound, turbine foundations and

substation. Exposed and disturbed ground may increase the risk of erosion and subsequent sediment laden surface water runoff. There will also be a risk of pollution from site traffic through the accidental release of oils, fuels, and other contaminants from vehicles. Concrete (specifically, the cement component) is highly alkaline and any spillage to a local watercourse would be detrimental to water quality.

. Any deterioration of water quality would have the potential to impact SCI wetland habitats and the following SCI bird species (see **EIAR Chapter 7**):

- Pochard [A059];
- Tufted Duck [A061];
- Common Scoter [A065];
- Black-headed Gull [A179];
- Coot [A125];
- Shoveler [A857];
- Gadwall [A889];
- Common Tern [A193];
- Arctic Tern [A194];
- Golden Plover [A140];
- Greenland White-fronted Goose [A395]; and
- Common Gull [A182].

Most of these SCIs are waterfowl, nesting and foraging in wetlands and waterbodies. The three last species in the list (golden plover, Greenland white-fronted goose and common gull) use wetlands for foraging. There is a risk of effects from water quality deterioration due to the proposed project.

To mitigate risks incurred from water quality deterioration, a comprehensive suite of mitigation measures will be implemented throughout all phases of the proposed project (refer to **Section 8**), with the most stringent measures applied during the construction phase. These measures are designed to prevent emissions to surface and groundwater pathways, and to protect downstream watercourses. Specific safeguards will be implemented, particularly during construction and decommissioning, to minimise the risk of contamination. With these measures in place, the proposed project is not expected to result in adverse effects on this SPA.

6.3.3.2. Disturbance and potential loss of foraging habitat

The shortest distance between the proposed project and the SPA is a minimum of c. 2.9 km. Disturbance and displacement effects are considered negligible and not significant, as SCI bird species are not reliant on habitats associated with the proposed wind farm site (see **EIAR Chapter 7**).

The waterbirds/waterfowl pochard, tufted duck, common scoter, shoveler, gadwall, common tern and arctic tern were not recorded on-site over three consecutive survey years (2022–2025 and are not considered to have any functional dependency on the proposed project site, thus excluding any disturbance effects. Coot, while recorded during the surveys, is not considered to have site-specific conservation dependency and is unlikely to experiences effects beyond short-term, localised, non-significant changes in behaviour and distribution. As such, potential effects would not undermine the conservation objectives.

Surveys for the proposed project confirmed no hen harrier roosts in the proposed project. Furthermore, only sporadic use of the wider landscape by hen harrier was indicated by the records. There was no evidence of regular roosting or functional dependence on habitats within the raptor study area. Impacts on hen harrier were determined to be of no significance.

The Conservation Objectives for golden plover and Greenland white-fronted goose relate to wintering activities. Golden plover was only recorded occasionally during the surveys for this proposed project. It is regarded as a relatively widespread and adaptable species, and it is likely that any birds displaced from the proposed project would utilise alternative suitable habitat within the surrounding landscape (refer to **EIAR Chapter 7, Appendix 7-2**). The landscape surrounding the proposed project has an abundance of habitats similar to those on the proposed project (grassland, heath), many closer to the SPA, which would provide alternative suitable habitat for this SPA species.

Regarding Greenland white-fronted goose, the surveys for the proposed project found that Greenland white-fronted goose occurs regularly within the wider Survey Area, principally in association with Rostaff Turlough and adjacent agricultural land. However, use of the proposed wind farm site itself was very limited, with no evidence of roosting, regular foraging or site dependency. The nearest regularly used feeding areas were located more than 800 m from the proposed turbine layout and no roosting, breeding or functionally important habitat was identified within the proposed wind farm site.

As regards to common gull, no common gull displaying breeding behaviour was recorded during breeding season surveys for the proposed project (April to July 2023 to 2025). Non-breeding common gull was recorded relatively frequently during the bird surveys, reflecting regular commuting between the proposed project and nearby wetlands such as Lough Corrib, Rostaff Turlough and Lough Hacket. Common gull is a relatively widespread and adaptable species, and it is likely that foraging activities, if disturbed, will just move to another site (see **EIAR Chapter 7**). The landscape surrounding the proposed project has an abundance of habitats similar to those on the proposed project (grassland, heath), many with wetter ground and closer to the SPA, which would provide alternative suitable habitat for this SPA species.

It is concluded that SCI bird species are not reliant on habitats in the proposed wind farm site. Accordingly, any disturbance of, or reduction in, foraging habitat associated with the proposed project would not adversely affect the conservation objectives of the SPA.

6.3.3.3. Collision risk

Collision Risk Modelling (CRM) was undertaken for SCI bird species where relatively frequent activity was recorded within the proposed wind farm site. These species included black-headed gull, common gull and golden plover.

Flight height and duration (seconds) were recorded during the surveys for the CRM, using predefined defined height bands, and used to calculate the proportion of flights within the collision risk zone (CRZ), in line with standard practice in wind farm assessments (NatureScot, 2024). Collision Risk Modelling predicted very low annual mortality rates for all assessed species. The predicted mortality rates represent a very small proportion of the relevant SPA populations and are not of a magnitude capable of affecting the achievement of the conservation objectives for the SCIs of Lough Corrib SPA. Accordingly, collision risk is not predicted to result in adverse effects on the SCIs or the integrity of

Lough Corrib SPA, either alone or in combination with other plans or projects. Full CRM methodology, inputs and outputs are provided in **Appendix 7-4** of **EIAR Chapter 7**.

Table 3: CRM Summary for Lough Corrib SPA SCIs

Species	Survey Activity	Proportion within CRZ	Predicted Annual Mortality	Predicted Annual Mortality as % of SPA Population
Golden plover	40 flights	88%	0.002 birds/year	0.0001%
Black-headed gull	334 flights	79%	0.015 birds/year	0.0019%
Common gull	509 flights	82%	0.038 birds/year	0.0139%

The predicted mortality rates represent a very small proportion of the relevant SPA populations, equating to approximately 0.0001% of the wintering golden plover population, 0.0019% of the breeding black-headed gull population and 0.0139% of the breeding common gull population qualifying interests of Lough Corrib SPA. These rates are not of a magnitude capable of affecting the achievement of the conservation objectives for the SCIs of Lough Corrib SPA. Accordingly, collision risk is not predicted to result in adverse effects on the qualifying interests or the integrity of Lough Corrib SPA, either alone or in combination with other plans or projects.

For hen harrier and Greenland white-fronted goose, baseline surveys recorded only infrequent and sporadic use of the wider survey area. No regular feeding, roosting or flight corridors were identified for Greenland white-fronted goose and no evidence of roosting or regular use was identified for hen harrier. The level of site use was therefore considered insufficient to indicate meaningful exposure to turbine collision risk and these species were not taken forward for CRM assessment. Having regard to the low levels of recorded activity, the very low predicted annual mortality rates, and the absence of regular use of the proposed wind farm site by Greenland white-fronted goose and hen harrier, collision risk is not predicted to adversely affect the conservation objectives or the integrity of the SPA. Full details of Greenland white-fronted goose and hen harrier site usage are presented in **Appendix 7-2** of **EIAR Chapter 7**.

6.3.3.4. Barriers to movement / Displacement

The Proposed Development would not introduce a barrier to accessing Lough Corrib SPA for SCI species, or between Lough Carrib SPA and areas of supporting habitat used by SCI species. Survey data did not identify regular commuting routes, migration corridors or other movement pathways linking the SPA with the Proposed Development site. Furthermore, SCI species recorded within the Study Area occurred at low frequencies and did not demonstrate functional reliance on habitats within the Proposed Development site. Accordingly, no barrier effects, displacement effects affecting connectivity, or restrictions to access between the SPA and supporting habitat are predicted.

6.4. Shrule Turlough SAC (000525)

6.4.1. Qualifying Interests of Shrule Turlough SAC (000525)

The SAC lies approximately 1.9 km north of the proposed project wind farm and 1.8 km north of the GCR. Based on the functional requirements of the lone QI for which it has been designated, Turloughs [3180], this site was screened in on a precautionary basis due to the potential for groundwater-

mediated impact pathways. This reflects the presence of a shared regionally important karstified aquifer and the need to consider potential hydrogeological connectivity (refer to **EIAR Chapter 9**).

The sole QI, Turloughs [3180], a priority habitat, was screened in for further assessment.

6.4.2. Conservation Objectives of Qualifying Interest

6.4.2.1. Turloughs* [3180]

The following account of the turlough in the SAC is mainly based on NPWS site-specific publications (NPWS, 2013, 2021). The turlough is orientated east-west in an extensive natural basin surrounded by gently undulating farmland, with slightly higher scrub-covered land to the north. Around the edges of the turlough there are scattered boulders and some limestone outcrops. The turlough is a relatively large (121 ha (Goodwillie, 1992)), highly oligotrophic turlough, with thick marl and peat deposits. There is no above-ground outflow from the turlough. Drainage attempts have been made by enlarging the swallow holes, but the turlough still floods regularly and it seems to show little modification due to the drainage efforts. Peat cutting no longer occurs but cattle graze on reclaimed peat margins and around the swallow holes.

The turlough has a high level of physical and vegetation diversity, and supports the second largest number of plant communities of any turlough surveyed (18 in all). Fen vegetation is especially well-developed, with the largest extent of both great fen-sedge (*Cladium mariscus*) fen and black bog-rush (*Schoenus nigricans*) fen found in any turlough. The site also supports important stands of tall sedge and yellow sedge communities. The site supports a range of plants that are quite rare in turloughs, among them whorled water-milfoil (*Myriophyllum verticillatum*), least bur-reed (*Sparganium minimum*), greater bladderwort (*Utricularia vulgaris*) and creeping yellow-cress (*Rorippa sylvestris*).

The oligotrophic and peaty nature of the site makes it unusual in the general range of turloughs and gives it a very significant ecological value. In addition, the site is large and seemingly largely uninfluenced by the surrounding land uses. Its high vegetation diversity and the presence of a number of species generally rare in turloughs is of further interest. According to the Article 17 Report (NPWS, 2025), the overall Conservation Status for this habitat is 'Inadequate' and the Conservation Trend is 'Stable'.

The Conservation Objective for Turloughs* [3180] is *"To maintain the favourable conservation condition of Turloughs in Shrule Turlough SAC".*

Attributes and targets:

- Habitat area: stable or increasing, subject to natural processes
- Habitat distribution: no decline, subject to natural processes
- Hydrological regime: maintain the natural groundwater contribution and characteristic flood duration, frequency and extent
- Soil type: maintain the natural soil characteristics and distribution
- Soil nutrient status: maintain appropriate nitrogen and phosphorus conditions
- Physical structure: maintain appropriate levels of bare ground
- Chemical processes: maintain natural calcium carbonate deposition and concentration
- Water quality: maintain the groundwater and surface-water quality needed to support the habitat
- Active peat formation: maintain where this is a feature of the turlough

- Vegetation composition: maintain the area of characteristic vegetation communities and their natural zonation
- Vegetation structure: maintain appropriate sward height and the extent and condition of any turlough woodland
- Typical species: maintain characteristic plant and invertebrate assemblages in favourable condition
- Fringing habitats: maintain the area and condition needed to support the turlough's natural structure and functioning

6.4.3. Assessment of Effects on Shrule Turlough SAC (000525)

The impacts of the proposed project on the lone QI of this SAC are considered below, taking into account the Conservation Objective "*To maintain the favourable conservation condition of Turloughs in Shrule Turlough SAC*" and in consideration of its attributes and targets shown above (NPWS, 2021). A turlough is a limestone basin that floods annually and can be described as the floodplain of underground rivers (NPWS, 2025). Hydrology is the key driver of turlough ecology, with flood duration and groundwater contribution important factors.

As outlined in **EIAR Chapter 9**, the proposed project is underlain by a Regionally Important Karstified (Conduit) Aquifer (GWDTE Shrule Turlough SAC 000525) and areas of extreme groundwater vulnerability. While the SAC is located c. 1.9 km north of the proposed project and regional groundwater flow is understood to be towards the Black River and Lough Corrib. An area of Annex I Turlough habitat [3180], a small portion of which (0.39 ha) extends within the proposed project boundary, also occurs adjacent to the proposed project. However, it is located over 300 m from the nearest proposed wind farm infrastructure and approximately 400 m from the nearest turbine. Having regard to the findings of **EIAR Chapter 9**, including the inferred groundwater flow regime, no hydrogeological pathway between this habitat and Shrule Turlough SAC has been identified. The SAC was nevertheless screened in on a precautionary basis due to the presence of a shared karstified aquifer and the potential for groundwater-mediated pathways affecting the groundwater-dependent QI habitat.

Potential impacts are presented in Table **2** (see **Section 5**). Given the groundwater-dependent nature of the QI habitat, consideration has been given to potential effects on groundwater quality, groundwater flow and groundwater levels during the construction phase. The maintenance of good groundwater quality and the natural hydrological regime is important for the conservation of the turlough habitat, including its extent and distribution, characteristic vegetation communities, typical species, soil conditions and associated fringing habitats.

Works in the vicinity of the groundwater body associated with Shrule Turlough SAC are principally limited to T7 and the borrow pit, which are located approximately 101 m and 156 m, respectively, from the boundary of the GWDTE Shrule Turlough (SAC 000525) groundwater body. Applying the precautionary principle, and given the karst nature of the underlying geology, construction activities could, in the absence of mitigation, result in accidental pollution events or localised alterations to groundwater levels and flow patterns. Such effects have the potential to affect the groundwater conditions that support the qualifying habitat.

7. IN-COMBINATION ASSESSMENT OF EFFECTS

The effects on QIs and SCIs of European Sites arising from the proposed project in combination with other plans or projects at various stages of planning, construction or operation were assessed to determine the potential for in-combination effects.

The assessment considered existing developments, consented developments, projects under construction and proposals awaiting determination at the time of writing, where these had the potential to contribute to the identified impact pathways. Particular attention was paid to other wind farms within 20 km of the proposed project. The 20 km search radius was applied on a precautionary basis to capture developments with the potential to affect mobile ecological receptors and reflects published guidance on ecological connectivity for mobile receptors such as birds (SNH, 2016). Consideration was also given to developments located within the same hydrological sub catchment as the proposed project, namely the Black (Shrule) (SC_010), which may contribute cumulatively to water quality effects affecting hydrologically connected European Sites and aquatic QIs/water-dependent SCIs associated with the Black River and Lough Corrib.

Potential water quality deterioration, water levels, dust deposition and invasive species have been identified as the primary plausible in-combination impacts associated with the proposed project. In addition, vibration, noise and dust arising from blasting activities associated with both the proposed project and the adjacent quarry have been considered as potential in-combination effects during the construction phase. Permanent habitat loss during the construction phase is not considered to have an in-combination effect with other plans or projects unless they fall within 300 m.

It is generally anticipated that disturbance and displacement effects on fauna will not extend beyond a 300 m radius of construction activities. This is because noise from typical construction work is expected to decrease to levels similar to the ambient environment at approximately this distance (Cutts *et al*., 2009).

Different types of actions can cause cumulative impacts and effects. As such, these types of impacts may be characterised as:

- Additive/ incremental: in which multiple activities/projects (each with potentially insignificant effects) add together to contribute to a significant effect due to their proximity in time and space (CIEEM, 2018); and
- Associated/ connected: a development activity enables another development activity, e.g., phased development as part of separate planning applications. Associated developments may include different aspects of a project which may be authorised under different consent processes. It is important to assess the potential impacts of the 'project' as a whole and not ignore impacts that fall under a separate consent process (CIEEM, 2018).

It has been established that any potential effects related to European Sites is linked to hydrological/ geohydrological pathways. Proposals with potential to result in in-combination effects on the European Sites are outlined below in **Table 4** and **Table 5**.

7.1. Associated / Connected Developments

The proposed project comprises the GCR and all works required along the TDR as integral components, and these have been assessed as part of the AA. The works are short term, localised and of relatively

limited extent, and no associated or connected effects have been identified arising from additional or supporting works related to the consent or operation of the proposed project.

7.2. Additive/ Incremental Effects

The European Sites that could potentially be affected as a result of other projects and plans are the Cloughmoyne SAC (000479), Lough Corrib SAC (000297)), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525). **Section 6.3** shows that there will be no adverse effects from the proposed project on SCIs of SPAs due to disturbance and displacement or collision risk, and so no in-combination effects anticipated in that regard. In-combination effects are only likely to manifest from projects which share hydrological and/or geohydrological connectivity to the European Sites mentioned. As such, in-combination effects are primarily concerned with water quality impacts, namely elevated levels of suspended sediment, subsequent sediment deposition, associated nutrient enrichment, water level changes as well as hydrocarbon contamination and invasive species.

7.2.1. Other Wind Farms

Table 4 provides details of approved, proposed and existing wind farms within 20 km of the proposed project, given potential in-combination effects that may arise during the operation and decommissioning phases. There are eight wind farms within this radius, at varying stages of development (operational, under construction, permitted but not yet constructed, awaiting decision, or refused but still open to judicial review proceedings). None are located in close proximity to the proposed wind farm site; the nearest is Shancloon Wind Farm, approximately 6.5 km to the northeast.

Table 4: Wind farms within 20 km of the proposed wind farm site

Wind Farm Name (Planning reference)	No. of Turbines	Location (approx. distance from proposed wind farm site*)	Status
Shancloon Wind Farm (ACP Ref. 323699)	11	In the townlands of Beagh, Beagh More, Cloonbar, Cloonweelaun, Cloonnaglasha, Cloonteen, Corillaun, Derrymore, Ironpool, Shancloon, Toberroe and Tonacooleen, Co. Galway (approx. 6.5 km northeast)	Planning permission refused on September 21 2026
Laurclavagh Wind Farm (ACP Ref. 319307)	8	Laurclavagh and adjacent townlands, Co. Galway (11.6 km southeast)	Pending planning decision
Ardderro Wind Farm (ACP Ref. 303086)	25**	Townlands of Ardderroo, Letter and Finnaun, Co. Galway (16.1 km southwest)	Operational
Knockranny Wind Farm (ACP Ref. 243094 and 318723)	11	Knockranny, Ardderroo, Letter, Moycullen, Co. Galway (16.3 km southwest)	Currently under construction
Uggool Wind Farm (GCC Ref. 111735)	16	Uggool, Co. Galway (16.9 km southwest)	Operational
Seecon Wind Farm (GCC Ref. 11429 and ACP Ref. 307117***)	7**	Seecon, Finnaun, Co. Galway (18.2 km southwest)	Pending construction
	16**	Seecon, Lettercraffro, Derradda, Finnaun and Shannapheasteen, Co. Galway (18.3 km southwest)	Operational

Wind Farm Name (Planning reference)	No. of Turbines	Location (approx. distance from proposed wind farm site*)	Status
Lettercraffroe Wind Farm (GCC Ref. 101454)	8	Lettercraffroe, Co. Galway (18.6 km southwest)	Operational
Cloonascragh Turbine (GCC Ref. 221175)	1	Cloonascragh, Tuam, Co. Galway (19.5 km east)	Pending construction
*Measured from the boundary of the proposed wind farm site to the closest wind turbine of the wind farm considered for cumulative impacts. **Some of which are >20 km from the proposed wind farm site. ***This application concerns nine turbines across two wind farms. The two turbines within the Cloosh Wind Farm (GCC Ref. 20198) are located >20 km from the proposed wind farm site and therefore not considered in the cumulative impacts assessment.			

The likelihood of in-combination effects arising during the construction phase of the proposed project is mainly limited to potential changes in water quality and water levels within the Black River and associated watercourses that drain the proposed project and its surrounding environs, namely the Shancloon, Rooaunalaghta and Cloughmoyne streams, as well as groundwater effects. These watercourses form part of a hydrologically connected network within the Black (Shrule) sub catchment. As outlined previously, the Black River forms part of the Lough Corrib SAC, which is located 147 m from the proposed project at its nearest point and is crossed by the proposed GCR. In addition, the proposed project is hydrologically connected to Lough Corrib SPA (c. 9.8 km downstream), and to Cloughmoyne SAC which occurs immediately adjacent to the proposed project boundary and is connected *via* surface water (overland flow) and groundwater pathways.

Shancloon Wind Farm (ACP Ref. PAX07.323699) is located c. 6.5 km northeast of the proposed project, also lies within the Black (Shrule) sub catchment. Planning permission for the development was refused in September 2026. However, as the decision remains subject to the statutory challenge period and potential judicial review proceedings, the project has been retained within the cumulative assessment as a reasonably foreseeable development. The proposed project comprises the construction of 11 no. wind turbines, together with associated infrastructure including access tracks, a meteorological mast, substation, GCRs and TDR, as well as associated drainage and sediment control measures such as interceptor drains, cross drains, settlement ponds and swales.

The EIAR and NIS accompanying Shancloon Wind Farm identify the potential for construction activities, including turbine hardstand and access track construction, to give rise to runoff or infiltration of sediments, hydrocarbons and cementitious materials to drains and watercourses draining this site. In the absence of mitigation, such effects could result in adverse effects on aquatic habitats, fisheries and hydrologically connected designated sites. However, having regard to the implementation of appropriate buffer distances from principal watercourses (i.e., 50 m) and comprehensive water quality protection measures, in-combination effects on aquatic receptors and hydrologically connected designated sites arising from the proposed project in combination with Shancloon Wind Farm are not anticipated.

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In addition to potential water quality pathways, cumulative effects on SPA bird species arising from Shancloon and other wind farm developments within the 20 km study area were also considered. The

principal pathways assessed comprised disturbance/displacement and collision risk. Given the separation distances between developments, the absence of overlapping disturbance zones, the availability of extensive alternative habitat, and the very low collision mortality predicted for the proposed project, cumulative effects on SCI bird species are not predicted.

7.2.2. Other Developments

Table 5 presents other notable plans and projects within 20 km of the proposed project that were considered in the in-combination effects assessment. Particular attention was given to developments located within the Black (Shrule) sub catchment, where there is potential for overlapping effects on water quality within the Black River, associated watercourses, and upper Lough Corrib.

Smaller scale developments located within 2 km of the proposed project were screened out of the in-combination assessment on the basis of their limited scale, separation distance, and the absence of plausible overlapping effects. Following this initial screening, the majority of the remaining developments assessed were residential in nature. These developments are generally located within existing urban and semi urban environments and are situated >400 m from any nearby watercourses. Even where construction activities associated with these developments were to occur concurrently with the proposed project, no pathway has been identified by which adverse in-combination effects on any European Site could arise.

An approved waste recovery facility is located 14 m north of the proposed wind farm site. Given the proposed temporary link road between the proposed wind farm and the adjoining quarry, the quarry and associated waste recovery facility have been considered as part of the in-combination assessment on a precautionary basis. This facility provides for the acceptance and processing of up to 5,000 tonnes per annum of construction and demolition waste, including concrete, brick, tile, soil and stone, for the production of recycled aggregates. The facility is located within the footprint of an adjoining operational quarry and forms part of the existing baseline land use. The waste facility may present a potential pathway for the introduction and spread of invasive species. However, the embedded works precautions and additional mitigation measures incorporated into the proposed project will minimise the risk of accidental introduction or spread of invasive species.

The associated quarry is Lydon quarry (Planning register Ref. No. P22/970). Granted 01/12/2023 for various activities associated with extraction of rock and blasting (limited to four times per year, and with prior notice given to Mayo County Council). The schedule of conditions describes 20 conditions for protection of surface and groundwater, control of noise, dust and vibration. These include watering down access routes and dry material stockpiles to dampen down dust, dust monitoring schedule reporting to Mayo County Council, oil/petrol interceptor, oil abatement kits on-site with booms and absorbent materials, bunded areas, noise limitations, wheel wash, protection for spread of invasive species. Having regard to the mitigation and controls secured through the planning permission, no adverse in-combination impacts are anticipated.

While limited temporary dewatering may be required during construction of turbine foundations and the borrow pit, the accompanying hydrogeological assessment (**EIAR Chapter 9**) concludes that no significant alteration to groundwater levels, groundwater-dependent habitats, or the supporting hydrogeological conditions of Shrule Turlough SAC is predicted. Given the localised and temporary nature of any dewatering activities, and the groundwater protection and monitoring measures

required for both the proposed project and the adjacent quarry, no adverse in-combination effects on groundwater levels are predicted.

Other identified developments include works associated with the Castlebar – Dalton 110 kV overhead line, involving the replacement or upgrade of existing masts. These works are located at a minimum distance of c. 620 m from the proposed project and are not of a scale or proximity that would give rise to overlapping effects.

The Therapeutic Village development at Lislaughera, Cong, Co. Mayo (ACP Ref. PL16.321245), located adjacent to the Lough Corrib SAC, was also considered. Following Stage 2 AA, it was ascertained that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of Lough Corrib SAC or Lough Corrib SPA, having regard to the Conservation Objectives of those sites. As such, no adverse in-combination impacts on European Sites are anticipated in combination with the proposed project.

Overall, having regard to the nature, scale and spatial distribution of the other developments identified above, the conditions attached to relevant permissions and licences, and the limited potential for overlapping impact pathways, no adverse in-combination effects on any European Site are predicted.

7.3. Summary of In-Combination Effects

With the full implementation of the mitigation measures outlined in **Section 8**, the proposed project will not adversely affect the integrity of the European Sites, when considered in isolation. Having regard to the application of embedded water quality protection measures, project-specific mitigation, and the mitigation and control measures secured as part of other relevant developments, any in-combination impacts are not anticipated to adversely affect the integrity of Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) or Shrule Turlough SAC (000525), having regard to their conservation objectives. Therefore, there is no potential for any other plan or project to adversely affect the integrity of these European Sites in combination with the proposed project.

Table 5: Projects with the potential for in-combination effects with the proposed project

Planning Ref. no.	Description of development	Location [approx. distance from proposed project]*	Status	Grant Date	Reason for inclusion
MCC 24510	Waste recovery facility for the acceptance, recovery and processing of up to 5,000 tonnes per annum of construction and demolition (C&D) waste, including concrete, brick, tile and soil and stone to produce recycled aggregates for export and use in the construction industry.	Carrowoughteragh, Shrule, Co. Mayo [14 m north]	Approved. Status of construction unknown.	06/02/2025	Proximity to proposed project.
MCC 22970	Retention permission for the extraction of rock to an elevation of 25m OD over and area of 2.6 ha and further permission to extract rock by blasting methods to an elevation of 25 m OD over an area of 0.87 ha within the existing quarry boundary, based on the reasons and considerations as outlined in the First Schedule and in accordance with the 20 conditions set out in the Second Schedule attached.	Carrowoughteragh, Shrule, Co. Mayo[14 m north]	Approved. Status of construction unknown.	01/12/2023	Proximity to proposed project
MCC 2560928	For works to uprate the existing Castlebar-Dalton 110 kV overhead line (OHL) (27.8 km in length, with a total of 144 no. supporting structures). The proposed project will comprise, amongst other works, the replacement ("restringing") of the existing OHL circuit conductor wires with a new higher capacity conductor between substations; the replacement of some structures; the strengthening of some tower foundations; painting of some towers; associated temporary site development works to gain access to the existing structures; etc.	Existing Castlebar - Dalton 110 kV overhead power line, See Particulars for multiple townlands, Co. Mayo [620 m northwest]	Approved. Status of construction unknown.	12/02/2026	Proximity to river within the same sub-catchment
GCC 2461601	Construction of 65 no. residential dwellings, one 2-storey duplex building, and a single storey creche building with associated play area, bin store, parking and set down areas. The development also includes, amongst other proposed elements and ancillary works, the provision of public and private open spaces, bicycle and car parking, landscaping and boundary treatments, public lighting, connection to services, surface water drainage works residential carparking, road works, ESB substation, etc.	Headford, Cong Road, Co. Galway [3.2 km south]	Approved. Status of construction unknown.	18/07/2025	Proximity and potential hydrological connectivity

Planning Ref. no.	Description of development	Location [approx. distance from proposed project]*	Status	Grant Date	Reason for inclusion
GCC 201353 ACP 310697	Construction of 54 no. dwelling units, car parking and all associated services.	Headford, Co. Galway [3.6 km southeast]	Under construction, partly operational	17/12/2021	Unlikely connectivity, but within same catchment (Corrib, 30) and <500 m from river.
GCC 2460556 ACP 320253	Revisions to a housing development previously permitted under GCC 212388. The development will consist of the construction of seven additional houses; variation of conditions; provision for bin storage collection points; connection to services, and all associated site works.	Eallagh, Headford, Co. Galway [3.9 km southeast]	Approved. Status of construction unknown.	01/05/2025	Unlikely connectivity, but within same catchment (Corrib, 30) and <500 m from river.
GCC 25125	Extension of duration for permission to construct 21 no. residential units, including connection to services, the provision of a temporary construction site access route, site compound, and all ancillary site services.	Headford, Co. Galway [4.2 km southeast]	Under construction.	12/06/2025	Unlikely connectivity, but within same catchment (Corrib, 30) and <500 m from river.
MCC 2560545	Construction of 12 no. residential units, including the provision of landscaped public open space, play areas, public lighting, connection to services, and all associated site works.	Ballymacgibbon North, Cross, Co. Galway [5.8 km northwest]	Pending decision.	N/A	Given proximity to river, with potential to effect northern half of lake in particular.
MCC 2460297 ACP 321245	Amendment to P17/585 (subject to an extension of duration granted under P17/5850) for the development of a therapeutic village to provide respite facilities and all associated site works.	Lislaughera, Cong, Co. Mayo. [7.5 km northwest]	Under construction.	03/07/2025	Potential impact on water quality in upper Lough Corrib.
*Measured from the closest element of the proposed project, including GCR.					

8. MITIGATION AND MONITORING MEASURES

This section describes the measures that will be implemented to mitigate any potential adverse negative effects during the construction, operation and decommissioning phase of the proposed project. All mitigation measures in the following sections have been incorporated into the Construction Environmental Management Plan (CEMP) (refer to **EIAR Chapter 2, Appendix 2-3**).

8.1. Mitigation Measures

8.1.1. Mitigation by Avoidance

The proposed project has been developed through an iterative design process that sought to avoid, where practicable, impacts on European Sites, QIs and SCIs. This included the siting of turbines, access tracks and associated infrastructure to avoid direct impacts on priority Annex I habitats which occur outside of the boundary of the European Sites, including Turloughs [3180], Semi-natural dry grasslands and scrubland facies on calcareous substrates [6210], limestone pavement and other sensitive ecological features, together with the application of setback distances to sensitive ecological and hydrological receptors.

8.1.2. Construction Phase Mitigation

Prior to the commencement of the construction phase, a suitably qualified Ecological Clerk of Works (ECoW) will be appointed to oversee and report on the implementation of mitigation measures outlined in this section, the Habitat Management Plan (HMP) (see **EIAR Chapter 6, Appendix 6 6**) and CEMP (see **EIAR Chapter 2, Appendix 2-2**) during the construction phase of the proposed project. Refer to **EIAR Chapter 6** for the scope of duties of the ECoW.

8.1.2.1. Measures to Protect Water Quality and Water Levels

The contractor will be required to implement standard practice construction methods and mitigation measures to protect watercourses and habitats in European and nationally designated sites, including those linked *via* surface and sub-surface pathways. These measures are based on the following best practice guidelines:

- Construction Industry Research and Information Association (CIRIA), (2001). *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532)*.
- CIRIA (2006). *Control of Water Pollution from Linear Construction Projects (C648).*
- CIRIA, (2015). *The SuDS Manual (C753).*
- CIRIA, (2016). *Groundwater Control: Design and Practice (C750)*.
- CIRIA (2023). *Environmental Good Practice on Site Guide (fifth edition) (C811)*.
- NetRegs & SEPA (2018). *Guidance for Pollution Prevention (GPP) 2: Above Ground Oil Storage.*
- IFI, (2016). *Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters*.
- NRA (2005b). *Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes* (TII Publication no. CC-ENV-01101).
- EPA (2013). *Storage and Transfer of Materials for Scheduled Activities*.
- CIEEM (2021). Good Practice Guidelines for Habitat Management.

The following measures are to be read and implemented in conjunction with the CEMP and Surface Water Management Plan (SWMP) (see **EIAR Chapter 2, Appendix 2-2 and Appendix 2-6**):

- Where temporary works are required in the vicinity of drainage features or watercourse crossings, these shall be undertaken in accordance with the approved construction methodology and relevant IFI guidance (2016) and within the permitted instream working period;
- Temporary drainage diversions, fluming arrangements and associated sediment control measures will be implemented where necessary to isolate works from flowing water, maintain downstream flow and minimise sediment mobilisation. Any temporary drainage modifications will be fully reinstated following completion of works;
- Horizontal Directional Drilling (HDD) will be employed at major watercourse crossings, including the Black River crossing associated with the GCR, where practicable, to avoid direct disturbance to channel beds and banks and minimise impacts on aquatic habitats and species;
- A site surface water management system, as set out in the SWMP, will be implemented across all construction areas, including access tracks, turbine foundations, borrow pits, hardstands, storage areas and construction compounds. Runoff will be treated through attenuation and settlement prior to controlled discharge;
- Clean surface water runoff will be separated from construction runoff wherever practicable. Components of the site drainage network, including swales, settlement ponds and other attenuation features, will be installed in advance of, or alongside, construction works to attenuate runoff, promote settlement of suspended solids and regulate discharge rates in accordance with the SWMP and CEMP;
- Interceptor drains will be installed upslope of works to divert clean surface runoff away from construction areas and reduce interaction with exposed soils;
- Swales, check dams and level spreaders will be used, where required, to slow flows, promote sediment settlement and prevent erosion;
- Temporary settlement ponds will be established in areas of active construction (e.g., borrow pits, turbine bases and compounds) to capture and treat silt-laden runoff prior to discharge;
- Where construction activities occur adjacent to Cloughmoyne SAC, surface water runoff will be intercepted and managed within the site drainage network to prevent uncontrolled discharge towards the SAC. Clean runoff will be diverted away from active works areas, while runoff from construction areas will be directed to appropriate treatment measures prior to discharge;
- Silt control measures, including silt fences, silt traps, silt bags and, where required, mobile filtration units, will be used to remove suspended solids and reduce sediment transport, particularly within 50 m of drainage features or where pathways to watercourses exist;
- Drainage crossing works will be staged so that only a limited number are open at any time and will be undertaken during low flow conditions where practicable;
- Where excavation occurs near drainage features, working areas will be isolated from active flows using temporary measures (e.g., bunds or sandbagging), with regular inspection and maintenance;
- A minimum setback will be maintained during construction, including at least 10 m from surface water features and settlement ponds, and 50 m from wells and boreholes;
- All excavated material will be removed to designated stockpile areas, which will be located in stable, well-drained locations and set back from drainage features;
- Temporary spoil and material storage areas will be enclosed (e.g., with silt fencing) and, where required, bunded to prevent runoff and erosion. Bunding will extend above the level of stored material;
- Runoff from stockpiles will be monitored and controlled and prevented from discharging directly to the drainage network or adjacent watercourses;

- Exposure of stripped ground will be minimised, with progressive stabilisation and reinstatement (e.g., reseeding, use of geotextiles or mulches) undertaken as soon as practicable;
- Dewatering will be undertaken in accordance with best practice, with pumped water treated prior to diffuse discharge over vegetated ground;
- Concrete works will be carried out in designated impermeable washout areas, with no discharge to ground or drainage systems;
- Refuelling and storage of fuels, oils and chemicals will be undertaken in designated bunded areas. Servicing will be carried out on level, hardstanding areas and will not occur within 50 m of surface water features;
- All machinery will be regularly maintained and inspected to prevent leaks;
- An adequate supply of spill kits and hydrocarbon absorbent materials will be available at all times, with all vehicles carrying spill kits. Personnel will be trained in their use and all waste materials will be disposed of off-site appropriately;
- A 24-hour Emergency Response Protocol will be implemented for the containment and management of accidental spillages or sediment releases to surface or groundwater;
- Construction activities will comply with the Karst Management Procedure set out within the CEMP. No excavated materials, spoil, fuels, concrete washout, construction wastes or drainage discharges will be placed within karst features, fissures, grykes, enclosed depressions or other potential groundwater recharge features. Any previously unidentified karst feature encountered during construction will be subject to the Karst Encounter Protocol and reviewed by the project Hydrogeologist prior to works recommencing;
- Weather conditions will be monitored and earthworks restricted during periods of heavy rainfall to reduce the risk of sediment mobilisation and runoff;
- All on-site welfare facilities will be installed and managed to prevent nutrient or contaminant discharge to any drainage pathways;
- All equipment and machinery will be cleaned prior to arriving on site as a biosecurity measure to prevent the introduction or spread of invasive species;
- In recognition of confirmed crayfish plague outbreaks within the Corrib catchment, all plant, equipment and personnel will follow a project-specific biosecurity protocol, including inspection, cleaning and disinfection procedures prior to movement between work areas.

8.1.2.2. Measures to Protect Cloughmoyne SAC and Adjacent Limestone Pavement

Given the immediate proximity of Cloughmoyne SAC to parts of the proposed project, specific measures will be implemented during the construction phase to prevent encroachment into the SAC and to protect adjacent limestone pavement habitats. These measures will be implemented through the CEMP and overseen by the ECoW. In addition, dust suppression measures described in **EIAR Chapter 14** and **Section 8.1.2.3** will be implemented throughout the construction phase to minimise dust deposition on adjacent Annex I limestone pavement habitats, including the accumulation of dust within clints, grykes and fissures.

- The boundary of Cloughmoyne SAC will be clearly demarcated on site prior to the commencement of construction works in accordance with the CEMP (**EIAR Chapter 2, Appendix 2-3),** and all personnel will be made aware of the environmental sensitivities associated with the SAC;
- Particular attention will be given to construction activities occurring in closest proximity to the SAC boundary, including along the access track between T2, T3 and T4;
- Construction vehicles, plant and machinery will remain within the defined project footprint and will not encroach into habitats within Cloughmoyne SAC;

- No stockpiling, material storage, site compounds or construction activities will occur within the SAC;
- Surface water management measures described above will be implemented to ensure that no untreated runoff is discharged towards habitats within Cloughmoyne SAC;
- Compliance with these measures will be monitored by the ECoW throughout the construction phase.

8.1.2.3. Dust deposition

Mitigation measures to control dust generation and deposition will be implemented in full during construction. The appointed contractor will adhere to best practice construction procedures outlined in **EIAR Chapter 14** to minimise dust generation and dispersal. Implementation of appropriate mitigation measures will ensure that any short-term adverse effects of dust deposition on vegetation during the construction phase are minimised and largely imperceptible. This includes mitigation of dust emissions generated during the construction of turbine foundations, hardstands, material storage areas and the excavation of borrow pits as detailed in **Section 14.5** of **EIAR Chapter 14**.

Construction Works Area Management

- Construction compounds are laid out so that machinery and dust causing activities such as stockpiles are located away from receptors, as far as is practicable;
- Stockpiles will be covered to prevent wind whipping;
- Earthworks and exposed areas/soil stockpiles will be re-vegetated to stabilise surfaces as soon as practicable;
- Any chutes and conveyors will be enclosed and skips will be covered;
- Drop heights from any conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised. Fine water sprays will be used on such equipment where visible dust plumes are generated;
- Cutting, grinding or sawing equipment will be fitted with or used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- A water bowser will be used to spray work areas (hardstands and access tracks and grid connection route) and haul roads, especially during periods of excavations works coinciding with dry periods of weather.

Earthworks Activities

- Materials with the potential to produce dust, such as excavated material, will be removed from the construction works area as soon as possible, unless being re-used within the construction works area. Management of extracted material is detailed in the Construction and Demolition Resource and Waste Management Plan;
- Areas exposed by earthworks will be re-vegetated to stabilise surfaces as soon as practicable. Hessian, mulches or trackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Cover will only be removed in small areas during work and not all at once; and
- During dry and windy periods and when there is a likelihood of dust nuisance, water-based dust suppression (e.g. bowser) will operate to ensure soil moisture content is high enough to increase the stability of the soil and thus suppress dust.

Construction Activities

- Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out, unless this is required for a particular process;

- Smaller supplies of fine power materials bags will be sealed after use and stored appropriately to prevent dust escaping;
- Vehicles transporting loose materials (e.g. spoil or sand) entering and leaving the proposed project works areas and construction compounds will be covered with tarpaulin to prevent escape of materials during transport. Before entrance onto public roads, trucks will be checked to ensure the tarpaulins are properly in place;
- Where construction work area or construction compound conditions result in large amounts of mud building up on truck wheels, wheel washing will be carried out for trucks before they use the public road network; and
- Water-assisted dust sweeper(s) will be used at the access points to a construction compound and the immediate adjoining local road, to remove, as necessary, any material tracked out of the compound.

These measures are described in detail under the habitat specific mitigation measures set out in **EIAR Chapters 6** and **14** and will ensure that any short-term dust related effects on designated sites are avoided or reduced to non-significant levels.

8.1.2.4. Measures to Protect Otter

The following measures will be implemented to mitigate disturbance to otter during the construction phase. Mitigation measures set out in the **Section 8.1.2.1** for protection of water quality will be implemented to negate any effects on otter prey resource. Ecological connectivity with the Lough Corrib SAC population is considered possible due to the proximity of the Black River part of the SAC (150 m), so mitigation measures must be applied:

- A pre-construction otter survey will be completed no more than 10-12 months prior to the commencement of works in areas where the GCR intersects the Black River and in the vicinity of other hydrologically connected watercourses extending from the proposed wind farm site to the Rooaunalaghta Stream. This will be completed in accordance with TII guidance (TII, 2008) and will cover a linear distance of 150 m upstream and downstream of the works area, in order to confirm the absence of holts or resting sites;
- If a holt or resting place is identified during the pre-construction survey, appropriate protection, exclusion or licensing requirements will be agreed with NPWS and implemented as required. Until such measures have been implemented, the following controls will apply to construction works:
    - No works will be undertaken within 150 m of otter holts with breeding females or cubs.
    - No wheeled or tracked vehicles will be used within 20 m of active, non-breeding otter holts.
    - No light works will be undertaken within 15 m of active, non-breeding holts.
- Artificial lighting associated with construction activities will be of a design that limits light spill beyond the working areas. Construction works will be largely restricted to daylight hours; however, where limited night-time works are required, lighting will be kept to the minimum necessary for safety purposes, directed away from watercourses and riparian habitats, and positioned to avoid illumination of potential otter commuting or foraging areas. Warm spectrum lighting (≤2700 K) will be used where practicable, and the ECoW will advise on lighting design and placement in sensitive locations;
- A 10 m riparian buffer constitutes part of otter habitat (NPWS, 2025). In addition to protecting water quality, it will function as a buffer strip for otter, ensuring habitat connectivity is maintained;
- Any works involving stream crossings will maintain or improve connectivity upstream and downstream of the works area;

- Where possible, riparian vegetation will be retained or reinstated to provide cover and foraging opportunities post-construction.

8.1.2.5. Measures to Avoid the Spread of Invasive Alien Plant Species

During site visits it was confirmed that there are no invasive alien plant species in the wind farm site. However, invasive species were recorded at localised locations along the GCR and TDR, including cherry laurel (*Prunus laurocerasus*), rock cotoneaster (*Cotoneaster horizontalis*), winter heliotrope (*Petasites fragrans*) and butterfly bush (*Buddleja davidii*). Measures to prevent the introduction or spread of invasive species are set out within the HMP (**EIAR Chapter 6, Appendix 6-6**).

To avoid invasive plant species being introduced to the proposed project during the construction phase, material that cannot be retrieved from onsite borrow pits will require to be sourced from local, licenced quarries or approved suppliers. Materials imported onto the proposed wind farm site will be audited for invasive species to avoid or reduce the potential of their accidental introduction.

All footwear/waders and any equipment that will enter the hydrological environment will be treated to prevent foreign flora/fauna entering the water and after use to prevent spread to other catchments.

The Contractor's CEMP will include measures to prevent the introduction and spread of invasive plant species during construction, including procedures for equipment that may come into contact with watercourses, in accordance with the HMP (see **EIAR Chapter 6, Appendix 6-6**). Species-specific management measures include pre-construction verification of invasive species locations, avoidance where practicable, treatment and removal of affected stands where required, appropriate disposal of contaminated material, machinery biosecurity measures, and post-treatment monitoring to confirm successful management and prevent spread. Particular attention will be given to preventing the spread of invasive species *via* construction plant, soil movement and imported materials. Imported material from the adjacent quarry and waste recovery facility will be subject to inspection and ongoing monitoring during construction to ensure that invasive species are not introduced to the project site, or subsequently spread to nearby habitats, including Cloughmoyne SAC.

Management measures relating to invasive species will be guided by relevant best practice documents, including:

- TII (2020b). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance (TII Publication no. GE-ENV-01105);
- IFI (2010). Biosecurity Protocol for Field Survey Work;
- Brew, T. and Gilligan, N. (2019). Environmental Guidance: Drainage Maintenance and Construction. OPW, Ireland; and
- NPWS (2023). Ireland's invasive species soil and stone pathway action plan 2023-2027. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

8.1.3. Operational Phase Mitigation

8.1.3.1. Measures to Protect Water Quality and Aquatic Receptors (including Otter)

The operational phase drainage design incorporates embedded measures to control surface water quality and regulate flow prior to discharge. Mitigation will adhere to those described in the **EIAR Chapter 9**; operational activities will not result in any routine emissions or effluent discharges and will not give rise to any significant alteration to natural flow regimes. A site surface water management

system, as set out in the SWMP (**EIAR Chapter 9, Appendix 9-2**), will be implemented across all construction areas, including access tracks, turbine foundations, borrow pits, hardstands, storage areas and construction compounds. Runoff will be treated through attenuation and settlement prior to controlled discharge. Surface water generated within the proposed wind farm site will be managed through attenuation, settlement and controlled discharge *via* the site drainage system. This will include regular checks on silt fences/drainage swales. For more details on the above, see **EIAR Chapter 6, Section 6.7.1.1** and **EIAR Chapter 9**, particularly **Appendix 9-2**.

In addition to the embedded drainage design described above, standard operational procedures will be implemented to manage day-to-day activities and minimise the potential for effects on hydrologically connected designated sites. These include the appropriate handling and storage of fuels and chemicals, use of double-bunded refuelling equipment, management of foul water *via* contained systems, and disposal of wastes at appropriately licensed facilities

8.1.3.2. Measures to Avoid the Spread of Invasive Alien Plant Species

Management measures implemented for IAS during the Construction Phase will be continued throughout the Operational Phase.

Management measures relating to invasive species will be guided by relevant best practice documents, including:

- TII (2020b). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance (TII Publication no. GE-ENV-01105);
- IFI (2010). Biosecurity Protocol for Field Survey Work;
- Brew, T. and Gilligan, N. (2019). Environmental Guidance: Drainage Maintenance and Construction. OPW, Ireland; and.
- NPWS (2023). Ireland's invasive species soil and stone pathway action plan 2023-2027. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

The HMP of the accompanying EIAR (**EIAR Chapter 6, Appendix 6-6**) contains best practice standards that will be implemented throughout the proposed project. Measures will include rigorous monitoring of the imported material from the adjacent quarry.

8.1.4. Decommissioning Phase Mitigation

Mitigation measures described above in **Section 8.1.2** and which are relevant to decommissioning, updated to reflect good practice at the time, will be implemented for the decommissioning phase. A detailed decommissioning plan will be prepared prior to the commencement of works, taking account of the findings of this EIAR and the regulatory requirements in place at that time, and will be developed in consultation with the relevant authorities.

Decommissioning will be undertaken in a manner that minimises disturbance and environmental effects. The works areas will be kept to the minimum extent required, vegetation clearance will be limited, and appropriate measures will be implemented to protect water quality and any protected fauna. A pre-decommissioning walkover survey will be undertaken to identify any species or habitats of conservation importance, and works will be timed to avoid sensitive periods where necessary.

Access tracks will remain in situ for ongoing land management purposes, while turbine foundations and hardstanding areas will also remain in situ and be covered with soil to allow for natural re-vegetation. This approach minimises disturbance associated with removal works and facilitates

recovery of habitats. The site drainage system, including SuDS features, will remain in place to continue to manage surface water runoff and maintain existing drainage patterns during and following decommissioning.

Measures to control erosion and sediment will be implemented, including the reinstatement of silt protection measures similar to those applied during construction. Spoil and reinstated areas will be monitored, and where a risk of erosion is identified, additional stabilisation measures will be implemented.

8.2. Monitoring

Monitoring is an essential element of any major works program, during construction, habitat enhancement, and operation, as it is important to determine whether applied measures are successfully contributing to the achievement of objectives. Full details and a schedule table of proposed monitoring have been provided within the Habitat Management Plan (HMP) (**EIAR Chapter 6, Appendix 6-6**), with key elements summarised in the following sections.

8.2.1. Construction Phase Water Quality Monitoring

It is recommended that local surface water features at the proposed wind farm site are monitored pre-construction and during construction to take account of any variations in the quality and levels of the local surface water and groundwater environment as a result of activities related to the proposed wind farm site. During the construction phase the following monitoring measures will be implemented according to the schedule in the SWMP (see **EIAR Chapter 9, Appendix 9-2**) and will be implemented in accordance with best practice and agreed with MCC prior to commencement of works:

- Regular inspections will be undertaken by the main contractor or appointed delegate during excavations and groundworks to ensure that all water quality protection measures specified in this EIAR and the CEMP are correctly implemented and functioning.
- A suitably qualified ECoW will be appointed for the duration of the works. The ECoW will be present during works in proximity to watercourses, drains and crossing locations, undertaking routine upstream and downstream water quality checks to detect any deterioration and instigate corrective actions where required, in liaison with the Environmental Manager and other project specialists, including the Project Hydrogeologist where relevant.
- Silt control measures, including silt fences and settlement ponds, will be monitored to ensure that they remain functional throughout construction of the proposed project. Maintenance will be undertaken as required to ensure their continued effectiveness.
- The main contractor, in consultation with the ECoW, will provide and implement a monitoring schedule for water quality monitoring throughout the construction phase of the proposed project This will be agreed with Mayo County Council (MCC) and Galway County Council (GCC) (location, frequency and reporting requirement). Inspection records and summary reports from site supervision by the ECoW will be made available to MCC and GCC upon request. Should any deviation from the proposed mitigation or exceedance of the agreed quality “trigger” limits be noted, this will be reported to MCC and GCC and corrective measures will be agreed. Water quality monitoring to include:
    - Baseline sampling will occur at least twice, coinciding with both low flow and high flow stream conditions. The high flow sampling event will take place following sustained rainfall, while the low flow event will take place after a dry period.

- Regular (monthly) sample analysis will examine relevant parameters and regulatory limits, including Environmental Quality Standards. Samples will be taken from each watercourse/ land drain draining from the construction site.
- Daily field monitoring, in addition to turbidity monitoring, will include monitoring of pH, electrical conductivity (µs/cm) and visual assessment (colour, clarity) upstream and downstream of active works areas, and where required, at settlement pond outlets. Where settlement pond discharge fails to meet required standards, water will be recirculated to the pond inlet to allow further settlement. A penstock or similar valve will be installed to control pond discharge. Works will cease until the cause of any deviation is identified and rectified.

- Surface water outfalls and drainage controls will be routinely inspected, including checks on erosion protection, outlet structures and energy dissipation devices.
- Routine monitoring and inspections will be undertaken by the main contractor or appointed delegate during refuelling, concrete works and other activities presenting an elevated pollution risk to ensure compliance with the avoidance, mitigation and remedial measures set out in the EIAR and CEMP.

Specifically in relation to groundwater and dewatering, **EIAR Chapter 9** concludes that the proposed borrow pit will extend to approximately 5.5 m below grade level (bgl) and turbine foundations to approximately 4 m bgl. Localised dewatering may therefore be required; however, based on monitored groundwater levels and groundwater elevations recorded within the adjacent quarry, inflows are expected to be limited and temporary. Any groundwater encountered will be managed and treated in accordance with the measures set out in Chapter 9, including the use of silt bags, settlement tanks and settlement ponds prior to discharge.

- Groundwater monitoring will be undertaken during construction in accordance with **EIAR Chapter 9** and the CEMP (**Chapter 2, Appendix 2-3**), including monitoring of groundwater levels and any active dewatering operations where required.

8.2.2. Operational Phase Water Quality Monitoring

Ongoing regular operational monitoring and maintenance of the surface water drainage system will be undertaken throughout the lifetime of the proposed project in accordance with **EIAR Chapter 9** and **EIAR Appendix 2-2 and 2-6** and any requirements agreed with MCC and GCC. Appropriate corrective actions will be implemented where monitoring identifies any deterioration in water quality or drainage performance.

9. RESIDUAL EFFECTS

Residual effects are those likely to occur following the implementation of mitigation measures. **Table 6** summarises residual effects occurring within the proposed project on QIs and SCIs of the Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525), as assessed in this section.

9.1. Construction Phase

Mitigation measures set out in **Section 8**, together with those detailed in the CEMP (**EIAR Chapter 2, Appendix 2-3),** will protect the conservation objectives of Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) and Shrule Turlough SAC (000525), designated sites that are

ecologically or hydrologically connected, *via* surface water and/or groundwater pathways, to the proposed project. Mitigation will substantially reduce the likelihood and extent of sedimentation, accidental pollution and nutrient inputs to receiving waters during construction. Any effects on aquatic/wetland habitats and species would therefore be localised, short-term and reversible, with no lasting alteration to habitat quality or ecological function.

Cloughmoyne SAC occurs directly adjacent to the proposed project boundary and is designated for the habitat Limestone pavements [8240]. Potential construction phase effects in this context relate primarily to alterations to working areas and dust deposition affecting sensitive habitats. The SAC is approximately 2.06 km from the borrow pit, which in itself affords protection. T3 and T4 are approximately 60 m and 80 m respectively from the SAC. Stringent dust mitigation measures described in **Section 8.1.2.3** and in **EIAR Chapter 6, Section 6.7.1.1** (Mitigation Measures to Prevent Dust Deposition on Adjacent Designated Sites) under headings Construction Works Area Management, Earthworks Activities and Construction Activities, and in **EIAR Chapter 14, Section 14.5** (Mitigation Measures), will ensure protection of this QI.

For otter, a QI of the Lough Corrib SAC, the implementation of watercourse protection and surface runoff control measures will maintain water quality and prey availability, such that no indirect effects on foraging habitat will occur. Other potential effects on otter are those associated with disturbance from machinery, human activity, vegetation clearance, and temporary artificial lighting, which have the potential to result in short term displacement of individuals. These effects will be avoided or reduced through adherence to best practice construction protocols, implementation of species-specific mitigation measures (including pre-construction otter surveys, exclusion buffers and lighting controls), and appropriate timing of works where required. However, given the availability of suitable and connected habitats within the wider landscape, QI otters are expected to relocate temporarily and resume normal activity following construction. No barriers to otter movement are anticipated, as site access and haul routes will, where feasible, utilise existing tracks and areas of previous disturbance.

Regarding SCIs of Lough Corrib SPA, adverse effects from any water quality deterioration are mitigated through the standard mitigations and those measures described in **Section 8**. No displacement effects were found to be present due to the species' capacity to use suitable replacement habitats that are widespread in the landscape between the SPA and the proposed project.

Overall, while the implementation of mitigation measures during the construction phase will reduce and alleviate adverse effects, some temporary residual effects may occur that cannot be fully avoided. These include temporary habitat loss (e.g., hedgerows and areas of grassland) to accommodate proposed site infrastructure (e.g., turbine foundations, hardstands and the control station). This also includes temporary habitat loss for some QI/SCI species until temporary construction compounds are decommissioned. However, these effects are limited in extent and duration, and suitable alternative habitat remains available within the surrounding landscape during the construction period. Affected habitats will be reinstated and/or appropriately managed following completion of works. In summary, residual effects on the conservation objectives of European sites during the construction phase are expected to be minor, short-term, reversible. Following implementation of the mitigation measures described herein, no adverse effects on the integrity of any European Site are predicted.

9.2. Operational Phase

During the operational phase, residual effects across ecological receptors are limited following the implementation of embedded design measures and operational mitigation.

For the proposed project overall, residual effects are limited to the unlikely occurrence of an accidental release of fuels, oils or chemicals associated with routine maintenance activities. The principal potential pathways for such effects are *via* surface runoff and groundwater infiltration, with embedded design measures (i.e., the operational drainage system) and additional operational mitigation in place to reduce the likelihood of such events (refer to **Section 8.1.3** and **8.2.2**). Embedded operational measures, including the operational drainage system, fuel and chemical handling controls, and the management of foul water from welfare facilities, substantially reduce the likelihood of contaminants entering receiving waters. On this basis, no adverse residual effects on the integrity of any European Site are predicted during operation.

9.3. Decommissioning Phase

Following implementation of the mitigation measures described herein, no adverse residual effects on the integrity of Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) or Shrule Turlough SAC (000525) are predicted during the decommissioning phase.

Table 6: Summary of potential effects, mitigation measures, and residual effects

European Site	Project Phase	Potential Effect	Significance of Effect	Proposed mitigation	Significance of Residual Effect
Cloughmoyne SAC	Construction	Indirect effects on limestone habitats including dust deposition affecting exposed limestone surfaces and fissures, accidental contamination *via* overland flow, localised changes to soils and near-surface hydrology, and the spread of invasive alien species affecting QI habitat.	Adverse, medium-term, minor to moderate magnitude	Water quality protection, pollution prevention, dust control, invasive species prevention and working-area management.	No adverse residual effect.
	Operation	Spread of invasive alien species affecting QI habitat. Indirect effects *via* surface runoff or groundwater pathways during operation.	Adverse but low probability	Invasive species prevention measures.	No adverse residual effect
	Decommissioning	Indirect effects on limestone pavement *via* surface runoff, sediment mobilisation and dust deposition, of lower magnitude than during construction due to minimal ground disturbance, no excavation works, and limited material use.	Adverse, short-term, minor to moderate magnitude	Decommissioning water quality controls.	No adverse residual effect.
Lough Corrib SAC	Construction	Indirect effects *via* surface runoff, groundwater contamination and sediment mobilisation, together with direct and indirect effects on otter through disturbance of commuting and foraging habitat, deterioration in water quality, and disturbance associated with construction activities.	Adverse, short-term, minor to moderate magnitude	Water quality protection, pollution prevention, dust control, working-area management, pre-construction otter surveys and controls on artificial lighting.	No adverse residual effect.
	Operation	Indirect effects *via* surface runoff and/or groundwater infiltration in the unlikely event of accidental spillage or welfare facility failure.	Adverse, short-term, minor to moderate magnitude	Operational drainage system, fuel and chemical controls, welfare facility management.	No adverse residual effect.
	Decommissioning	Indirect effects *via* surface runoff or groundwater contamination, reduced in magnitude due to limited disturbance.	Adverse, short-term, minor to moderate magnitude	Decommissioning water quality controls.	No adverse residual effect.

European Site	Project Phase	Potential Effect	Significance of Effect	Proposed mitigation	Significance of Residual Effect
Lough Corrib SPA	Construction	Indirect effects *via* surface runoff, groundwater contamination and sediment mobilisation.	Adverse, short-term, minor to moderate magnitude	Water quality protection, pollution prevention, dust control and working-area management.	No adverse residual effect.
	Operation	Indirect effects *via* surface runoff and/or groundwater infiltration in the unlikely event of accidental spillage or welfare facility failure.	Adverse, short-term, minor to moderate magnitude	Operational drainage system, fuel and chemical controls, welfare facility management.	No adverse residual effect.
	Decommissioning	Indirect effects *via* surface runoff or groundwater contamination, reduced in magnitude due to limited disturbance.	Adverse, short-term, minor to moderate magnitude	Decommissioning water quality controls.	No adverse residual effect.
Shrule Turlough SAC	Construction	Indirect effects *via* surface runoff, groundwater quantity and quality changes, contamination and sediment mobilisation.	Adverse, medium term, minor to moderate magnitude	Water quality and water levels protection, pollution prevention and working-area management.	No adverse residual effect.
	Operation	Indirect effects *via* surface runoff and/or groundwater infiltration in the unlikely event of accidental spillage or welfare facility failure.	Adverse, short-term, minor to moderate magnitude	Operational drainage system, fuel and chemical controls, welfare facility management.	No adverse residual effect.
	Decommissioning	Indirect effects *via* surface runoff or groundwater contamination, reduced in magnitude due to limited disturbance.	Adverse, short-term, minor to moderate magnitude	Decommissioning water quality controls.	No adverse residual effect.

10. CONCLUSION

The Screening for AA concluded that LSEs could not be excluded for Cloughmoyne SAC (000479), Lough Corrib SAC (000297), Lough Corrib SPA (004042) or Shrule Turlough SAC (000525). This NIS therefore examined, in view of best scientific knowledge and applying the precautionary principle, whether the proposed project, either individually or in combination with other plans or projects, would adversely effect the integrity of the screened-in European Sites, having regard to their conservation objectives.

This NIS found that, while a number of potential effects on these European Sites pertaining to water quality and water levels, dust deposition, and spread of invasive species were identified, no significant effects are anticipated to occur after the implementation of mitigation measures.

Therefore, in view of best scientific knowledge, applying the precautionary principle, and having regard to the conservation objectives of Cloughmoyne SAC, Lough Corrib SAC, Lough Corrib SPA and Shrule Turlough SAC, it can be concluded that the proposed project, either alone or in-combination with other plans or projects, will not adversely affect the integrity of any European Site. This conclusion has been reached beyond reasonable scientific doubt following implementation of the mitigation measures set out in this NIS.

11. REFERENCES

APEM Group Woodrow (2026). Rooaunalaghta Wind Farm AA Screening. https://rooaunalaghtagreenenergyplanning.ie/.

Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Winchester: CIEEM. Available at: https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/

Chartered Institute of Ecology and Environmental Management (CIEEM) (2021) *Good Practice Guidance for Habitats and Species*. Version 3. Winchester: CIEEM. Available at: https://cieem.net/resource/good-practice-guidance-for-habitats-and-species/Cutts, N., Phelps, A. and Burdon, D. (2009). Construction and waterfowl: defining sensitivity, response, impacts and guidance. Report to Humber INCA. Institute of Estuarine and Coastal Studies, University of Hull.

Department of Environment, Heritage and Local Government (2010) *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.*

European Commission (1992). Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, as amended by Council Directive 97/62/EC. Available at: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [Accessed August 2024].

European Commission (2021). Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission notice.

Fossit, J. (2000). A Guide to Habitats in Ireland. An Chomhairle Oidhreachta/ The Heritage Council 2000

Galway County Council (2022). Galway Development Plan 2022-2028. Available at: https://www.galway.ie/en/planning-building/plans-and-strategies/galway-county-development-plan-2022-2028 [Accessed April 2026].

Galway County Council (2026). Galway County Council Planning Portal. Available at: https://www.galway.ie/en/planning-building/development-management/planning-applications [Accessed April 2026].

Goodwillie, R.N. (1992). Turloughs over 10ha - Vegetation survey and evaluation. Unpublished report to NPWS.

Inland Fisheries Ireland (IFI) (2016). *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*. Dublin: Inland Fisheries Ireland. Available at: https://www.fisheriesireland.ie/media/guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters

Kennedy. J., Burke., B. Fitzgerald, N., Kelly, S.B.A., Walsh, A.J. and Lewis, L.J. (2022). Irish wetland bird survey: I-WeBS national and site trends report 1994/95 – 2019/20. Birdwatch Ireland.

Mayo County Council (2025). Mayo Development Plan 2022-2028. Available at: https://www.mayo.ie/en-ie/your-council/services/planning/development-plans-and-

strategies/county-development-plans/proposed-mayo-county-development-plan-2022-2028 [Accessed April 2026].

Mayo County Council (2026). Mayo County Council Planning Portal Available at: https://www.mayo.ie/en-ie/your-council/services/planning/planning-applications [Accessed April 2026].

McGreal, E. (2011). Census of inland breeding gulls in Counties Galway and Mayo. Irish birds 9: 173-180.

NatureScot (2024) Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms. https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms [accessed September 2026].

NPWS (2010). Second draft Owenriff freshwater pearl mussel sub-basin management plan (2009-2015). March 2010. Unpublished report to Dept. of the Environment and Local Government.

NPWS (2013). Cloughmoyne SAC (000479) Site Synopsis. v.26/08/2013. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2013). Shrule Turlough SAC (000525). Site Synopsis. v. 27/08/2013. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2014). Lough Corrib SPA (004042) Site Synopsis. v. 7/7/2014. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.NPWS (2017). Conservation Objectives: Lough Corrib SAC (000297). Version 1. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2019). Conservation Objectives: Cloughmoyne SAC (000479). Version 1. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2019). Lutra lutra (1355) Conservation Status Assessment Report. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland. Available at: https://www.npws.ie/sites/default/files/general/otter-conservation-status-report.pdf [Accessed September 2025].

NPWS (2021). Conservation Objectives: Shrule Turlough SAC (000525). Version 1. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2022). Lough Corrib SAC (000297) Site Synopsis. v.07/03/2022. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2022a). Conservation Objectives supporting document: breeding hen harrier. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2023). Conservation Objectives: Lough Corrib SPA (004042). Version 1. National Parks and Wildlife Service, Dept of Culture, Heritage and the Gaeltacht.

NPWS (2025). The status of EU protected habitats and species in Ireland. Vols 1-3. Eds. Finch, D., Delaney, A., O'Neill, F. and Lynn, D. National Parks and Wildlife Service, Dept. of Culture, Heritage and the Gaeltacht.

Ó Néill L. (2008). Population dynamics of the Eurasian otter in Ireland. Integrating density and demography into conservation planning. PhD thesis. Trinity College, Dublin.

O'Donoghue, B.G. (2021). Hen harrier Circus cyaneus ecology and conservation during the non-breeding season in Ireland. Bird Study, DOI: 10.1080/00063657.2021.1874871

O'Neill, F.H., Martin, J.R., Devaney, F.M. and Perrin, P.M. (2013). The Irish semi-natural grasslands survey 2007-2012. Irish Wildlife Manuals, No. 78. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

OPR (2021). OPR Practice Note PN01: Appropriate Assessment Screening for Development Management. Office of the Planning Regulator.

Reid, N., Hayden, B., Lundy, M.G., Pietravalle, S., McDonald, R.A. & Montgomery, W.I. (2013). National Otter Survey of Ireland 2010/12. Irish Wildlife Manuals No. 76. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

TOBIN – An AtkinsRéalis Company (2026). Rooaunalaghta Green Energy Ltd. Environmental Impact Assessment Report **(EIAR)** https://rooaunalaghtagreenenergyplanning.ie/

TII (2008). Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes. Transport Infrastructure Ireland (formerly National Roads Authority), Ireland.

Wilson, H. J., Norriss, D. W., Walsh, A., Fox, A. D. and Stroud, D. A. (1991). Winter site fidelity in Greenland White-fronted Geese A*nser albifrons flavirostris,* implications for conservation and management. Ardea, 79(2), 287-294.3

Wilson, S. and Fernández, F. (2013). National survey of limestone pavement and associated habitats in Ireland. Irish Wildlife Manuals, No. 73. NPWS, Department of Arts, Heritage and the Gaeltacht, Ireland.

Appendix 1: Statement of Authority

APEM Group Woodrow, trading as Woodrow Sustainable Solution Limited, (henceforth referred to as Woodrow) is an established and accomplished environmental consultancy committed to delivering robust ecological assessment services for clients in the private and public sectors. Woodrow provides an in-house team of ecologists and environmental professionals whose primary specialisms include botany, habitats, birds, bats, mammals, invertebrates and aquatic ecology. Woodrow's investment in high-technology field equipment and software, and the development of our own field-data collection app (Eco-Log), ensures reliability and confidence in our work. Woodrow staff are fully conversant with wildlife legislation in both Ireland and the UK, and work to exacting standards, according to established guidelines issued by the Chartered Institute of Ecology and Environmental Management (CIEEM).

This Report was prepared by Susan Iremonger in association with James O'Connor.

Susan is a Principal Ecologist with APEM Group Woodrow. She is a full member of CIEEM and holds a PhD in Botany/Ecology, MSc in GIS and Remote Sensing and a BSc in Science (Botany). She has worked in/with consultancies, NGOs, government departments, academic institutions and agencies of the EU and United Nations both in Ireland and abroad. She has published books, papers and interactive media. Her main interests are Habitats, Forest Conservation and Management, Biodiversity, GIS/Remote Sensing, Coastal Systems and Climate Change. She has expertise in forest, agricultural and semi-natural areas including many different habitats from woodlands to grasslands, wetlands and peatlands. She is experienced with Appropriate Assessment in Ireland for both consultancy clients and the Government Dept of Agriculture. She designs courses and delivers training for ecologists, foresters and others, both desk-based and in the field. She has contributed to the preparation of EIAR and AA reports for renewable energy developments in Ireland. She has contributed to successful tender applications for both short-term and long-term projects and has extensive experience in report writing and reviewing.

James O'Connor is a Senior Ecologist with APEM Group Woodrow. He holds a BSc (Hons) Agriculture and Environmental Management and MSc Applied Environmental Science, as well as a PhD in aquatic sciences with a primary technical specialism in freshwater ecology. He has considerable aquatic field experience, particularly in electrofishing, crayfish and freshwater pearl mussel surveying as well as water quality biological assessments employing benthic macroinvertebrate fauna (e.g., Q-value, SSRS). James has prior experience monitoring wild bird populations with BirdWatch Ireland (BWI) and is heavily involved in ornithological work as part of his role with APEM Group Woodrow. Here, he regularly undertakes vantage point (VP), breeding bird, wetland bird (I-WeBS), and species-specific surveys (e.g., hen harrier). His terrestrial expertise extends to mammal surveys, particularly for otter and badger, which also includes mitigation and monitoring. As a project manager, James manages projects of varying scales and works closely with clients, providing regular consultation and guidance. His reporting experience includes contributions to EIARs, particularly for onshore wind energy developments, as well as the production of AA Screening and NIS reports and various technical reports. He is the first author of five academic peer-reviewed published research papers and has contributed to reports disseminating key research findings to state agencies such as the Irish EPA and Irish county councils.

This was report was reviewed and approved by Róisín NigFhloinn. She is an Associate Director with Woodrow. She has more than 15 years' practice working as an ecological consultant in the UK and Ireland with experience in environmental and ecological impact assessment and mitigation design for

development projects including national road schemes, national trails, overhead power lines, grid connection, other infrastructure projects and smaller scale commercial and residential developments. She is also an experienced Ecological Clerk of Works. Róisín is a project director, project manager, line manager and field ecologist. She carries out multidisciplinary surveys as well as specialising in habitat and botanical identification, in addition to protected species surveys for mammals, amphibians and reptiles. She is competent in the compilation of Ecological and Environmental reports, including Ecological Impact Assessment (EcIA), 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).

Grisel Calcagno also assisted in the review and formatting of this report. Grisel is a Senior Environmental Consultant with 4 years' experience in preparing environmental assessments and reports for a wide range of public and private sector projects in Ireland at different stages of development. She has extensive experience preparing EIARs, EIA Screening and Scoping reports, Options Identification and Appraisal reports, preparation and review of CEMPs, Resource and Waste Management Plans (RWMPs), Environmental Constraints and Feasibility reports, and Stakeholder Consultation. She has been involved in various infrastructure projects including high-profile schemes such as greenways, solar farms, flood relief schemes, gas-fired power plants, data centres, and airports, in addition to Active Travel and other road schemes, public realm developments, commercial developments, and underground powerlines, amongst others. Grisel holds a BSc Environmental Science (Universidad Catolica Argentina), a MSc (1st class Honours) Environmental Science (University College Dublin), and an Advanced Diploma in Planning and Environmental Law (King's Inn). She is a Graduate member of ISEP.