



Callagheen Windfarm Repowering

Environmental Impact Assessment Scoping
Report

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Abbreviations

AIL	Abnormal Indivisible Loads
AM	Amplitude Modulation
ASSIs	Area of Special Scientific Interest
AoHSV	Area of High Scenic Value
BCT	Bat Conservation Trust
Birds Directive	Council Directive 2009/147/EC on the Conservation of Wild Birds
BGS	British Geological Survey
CEDaR	Centre for Environmental Data and Recording
CDMS	Construction and Decommissioning Method Statement
CEMP	Construction and Environmental Management Plan
CIEEM	Chartered Institute for Ecology and Environmental Management
CMS	Construction Method Statement
CNO	The Control of Noise (Codes of Practice for Construction and Open Sites) (England) Order 2002.
CNS	Communications, navigation and surveillance
CRM	Collision Risk Model
CRTN	Calculation of Road Traffic Noise
DEFRA	Department for Environment, Food and Rural Affairs
Dfi	Department for Infrastructure
DfE	Department for the Economy
DMRB	Design Manual for Roads and Bridges
EclA	Ecological Impact Assessment
ECOW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
ES	Environmental Statement
F&ODC	Fermanagh and Omagh District Council
GLVIA3	Guidelines for Landscape and Visual Impact Assessment
GWDE	Ground Water Dependant Terrestrial Ecosystems
Habitats Directive	Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Appraisal
Habitats Regulations	The Conservation (Natural Habitats &c.) Regulations 1994 as amended
ha	Hectares
IOA GPG	Institute of Acoustics Good Practice Guide
IEMA	Institute of Environmental Management and Assessment
ISEP	Institute of Sustainability and Environment Professionals
km	Kilometre
LCA	Landscape Character Area
LCT	Landscape Character Type
LDP	Local Development Plan
LDP-PS	Local Development Plan- Plan Strategy
LVIA	Landscape and Visual Impact Assessment

LWS	Local Wildlife Sites
LWES	Landscape Wind Energy Strategy
m	metre
MW	Megawatt
MWh	Megawatt Hour
NBN	National Biodiversity Network
NEIA	Northern Ireland Environment Agency
NI	Northern Ireland (NI)
NISMR	Northern Ireland Sites and Monuments Record
NSRs	Noise Sensitive Receptors
NTS	Non-Technical Summary
NPWS	National Parks and Wildlife Service
NVC	National Vegetation Classification
OS	Ordnance Survey
PSNI	Police Service of Northern Ireland
PSR	Primary Surveillance Radar
PRONI	Public Records Office Northern Ireland
RoI	Republic of Ireland
RDS 2035	Regional Development Strategy 2035
RVAA	Residential Visual Amenity Assessment
SAC	Special Areas of Conservation
SLA	Special Landscape Areas
SONI	System Operator for Northern Ireland
SPA	Special Protection Area
SPR	ScottishPower Renewables (UK) Limited
SPPS	Strategic Planning Policy Statement
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Urban Drainage Systems
The EIA Regs	The Town and Country Planning (Environmental Impact Assessment) (Northern Ireland) Regulations 2017
VP	Vantage Point
Water Framework Directive	Council Directive 2000 /60/EC of the European Parliament and of the Council; establishing a framework for the Community action in the field of water policy
WHS	World Heritage Site
ZTV	Zone of Theoretical Visibility

1. Introduction

1.1. Overview

ScottishPower Renewables (UK) Limited (hereafter referred to as ‘SPR’ or ‘the Applicant’) intends to submit a planning application to repower their currently operational Callagheen Windfarm, located in County Fermanagh, within the functional area of Fermanagh & Omagh District Council (F&ODC), in Northern Ireland (**Figure 1.1**).

The repowering of a windfarm involves the removal of existing wind turbines from a site and replacing these with new, often fewer, and more efficient turbines. Callagheen Windfarm currently produces up to 17 megawatts (MW) of green energy from 13 turbines (**Figure 1.2**). The Applicant’s proposed repowering would involve replacing the 13 existing turbines with up to nine new turbines, with a maximum height of 180m from ground to tip, and an installed capacity of up to 54MW, hereafter referred to as the ‘proposed Development’.

Based on the potential repower installed capacity and what is currently known about the onsite environmental and technical constraints, an application for planning permission will be required under the provisions of The Planning Act (Northern Ireland) 2011. The proposed Development exceeds the thresholds set out in paragraph 3(j) of Schedule 2 of the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 (‘the EIA Regulations’). It is therefore Schedule 2 development within the meaning of the Environmental Impact Assessment (EIA) Regulations. The Applicant accepts that EIA of the proposed Development is required and intends to prepare an Environmental Statement (ES) to accompany its application for planning permission.

This document sets out the details of initial scoping of the EIA process undertaken by the Applicant. It marks an early stage in the EIA and development process, aimed at ensuring that environmental considerations are fully embedded within the design and decision-making for the proposed Development. In addition, the Applicant seeks to use this Scoping Report to initiate formal engagement with the Planning Authority and statutory consultees, and to request a Scoping Opinion in accordance with Regulation 8 of the EIA Regulations.

The Scoping Report has been prepared by Natural Power with specialist input from JUNO Planning and Environmental (policy); APEM (ornithology); Hoare Lea (acoustics); Gahan and Long (archaeology and cultural heritage); and BiGGAR Economics (socio-economics and tourism). This Scoping Report has been informed by the operational Windfarm’s ES (B9 Energy, RES, December 2001), as well as a Feasibility Report prepared by ERM (February 2025), alongside completed surveys and assessments.

The scoping assessment considers the potential effects of the proposed Development during the following phases:

- Decommissioning of the currently operational Callagheen Windfarm;
- Construction of the proposed Development;
- Operation of the proposed Development; and
- Future decommissioning of the proposed Development.

In doing so, each technical chapter (chapters 5-12) evaluates the environmental implications of the repowering process as a whole, considering effects across all phases of the Proposed Development.

1.2. The Applicant

The Applicant is part of the ScottishPower group of companies operating in the UK under the Iberdrola Group, one of the world’s largest integrated utility companies and a world leader in wind energy. ScottishPower now produces 100% green electricity – focusing on wind energy, smart grids and driving the change to a cleaner, electric future and are investing over £18 million every working day to make this happen. SPR is committed to speeding up the transition to cleaner electric transport and improving air quality to deliver a better future, quicker for everyone. SPR is at the forefront of the development of the renewables industry through pioneering ideas, forward thinking and outstanding innovation, and already has over 40 operational wind farms managed from its world-leading Control Centre at Whitelee Windfarm, near Glasgow – where Iberdrola’s Saint Brieuc Windfarm in France and Wikinger Windfarm in Germany are also monitored from.

SPR stands as a distinguished innovator, industry leader, and environmental investor. As one of the largest privately funded peatland restoration entities in the UK, SPR has successfully restored over 1,000 hectares (ha) of peatland, with the capacity to sequester approximately 3.6 million tonnes of carbon dioxide. Additionally, SPR has pioneered two groundbreaking peatland restoration techniques, 'ground smoothing' and 'wave damming,' which have now become industry standards.

SPR is on the cusp of full circle moments as some of its oldest wind farms approach the end of their operational lifespan. The legacy those projects have left goes way beyond the power they’ve generated over the years and SPR has the opportunity to do so much more with them through life extension or repowering. Repowering in particular not only allows SPR to take advantage of new technologies and therefore increased efficiency, it also enables increased electricity generation and therefore increased security of supply. It can create jobs and supply chain opportunities, unlocks more community benefit funding and further investment in ecology and the local environment. Old assets can also become sustainable resources for research and training, recycling and restoration.

1.3. The Existing Operational Windfarm

The operational Callagheen Windfarm is located in County Fermanagh, Northern Ireland, approximately 6 km north-west of Garrison. Constructed in 2006, the Site comprises 13 Siemens wind turbines with a total generating capacity of up to 17 MW which have been operational for approximately 20 years. Since 2007, the Applicant, through the existing wind farm, has contributed over £325,000 in community benefit fund to deliver a range of local projects.

The boundary for the Callagheen Windfarm is shown on **Figure 1.2**. Associated infrastructure for operations includes the turbines and associated transformers, a permanent anemometer mast, access tracks and gates, underground electrical cabling, a site control building, substation and ancillary infrastructure. The substation is positioned to the south of the site, near the main entrance and adjacent to the access track between turbines 1 and 2, optimising the connection of underground cables from the turbines to the grid.

Table 1.1: Callagheen Windfarm – Turbine Details

Turbine Number and type	Tip Height (metres) (m)	Hub Height (m)	Rotor Diameter (m)	Megawatts (MW)
13 turbines: Siemens SWT-1.3-62	93	62	62	17 (1.3 per turbine)

1.4. Scoping Report Structure

This report has been structured to align with the following aims of the EIA scoping process (see also Table 1.2):

- Describe the context of the proposed Development;
- Identify the likely significant environmental effects to be further assessed during the EIA;
- Set out the proposed methodologies for assessing these effects;
- Highlight any topics proposed to be scoped in or out of further assessment; and
- Invite feedback from statutory bodies and stakeholders to inform the EIA process.

Table 1.2: Scoping Report Chapter Content Summary

Chapter	Content Summary
1: Introduction	Background context to the proposed Development, the Applicant, the existing operational windfarm and this Scoping Report.
2: Proposed Development	Outline of the proposed Development details considered in scoping.
3: Approach to EIA	Summary of the EIA process.
4: Legislative and Policy Context	Overview of the legislation and policy pertinent to the layout design and EIA of the proposed Development.
5 – 11: Scoping Assessments	Scoping of environmental topics (ecology, ornithology, geology, hydrology and hydrogeology, landscape and visual amenity, archaeology and cultural heritage, noise and material assets). For each topic, the baseline and key sensitivities are outlined; potential effects identified and either scoped in or out for further assessment depending on likely significance; proposed methodology for further assessment during the EIA; a summary; and questions for consultees to consider.
12: Other Considerations	Consideration of other key aspects and technical studies, such as shadow flicker, typically required to inform layout design and EIA.
13: Environmental Statement Structure	Outline of the Environmental Statement (ES) table of contents.
14: Summary	-

2. Proposed Development

2.1. Overview

The entirety of ‘the Site’ boundary as shown on **Figure 1.1** is c. 272.34 ha. The proposed Development would be located within the existing windfarm area with a boundary encompassing c.209.76 ha – hereafter referred to as ‘the developable area’. An additional area of land c. 62.54 ha to the south of the

developable area and Cornahaltie Road is also included in the Site boundary; this area is for potential future habitat management and is not proposed to include any infrastructure.

The Site is situated along a ridgeline at elevations between 190 m and 270 m within a prominent upland landscape overlooking Lower Lough Erne to the north and Lough Melvin to the south-west. Lough Navar Forest borders the Site to the east, with rough upland grassland to the north and west, and a minor road forming the southern boundary. The terrain is generally gently sloping, except at the northern edge where it falls away more steeply. Vegetation is dominated by degraded blanket bog, and the land has been used for grazing sheep and cattle, resulting in areas of overgrazing.

The proposed Development would continue to produce clean, renewable electricity on the Site. This would involve removing the existing 13 wind turbines and replacing them with up to nine modern turbines, each reaching a maximum blade tip height of up to 180 m. The total installed capacity of the repowered site would be up to 54MW, increasing the renewable energy output compared to the existing configuration.

Key elements of the proposed Development include:

- Decommissioning the 13 existing turbines;
- Installation of up to nine new wind turbines (including foundations, crane pad and underground cabling);
- Construction of upgraded or new onsite access tracks;
- Potential turbine delivery route and site entrance upgrade works (subject to abnormal indivisible load / swept path analysis; stakeholder consultation; and entrance design);
- Provision of a temporary construction compound for use during the decommissioning and construction phases;
- Upgrade to the onsite substation;
- Habitat Management Area; and
- Implementation of site reinstatement and restoration works following the decommissioning and construction activities.

2.2. Grid Connection

The EIA Scoping does not include for connection to the grid.

A grid connection has not been secured at this time; therefore, the form of the connection (i.e., whether via overhead or underground cables) and the route of the connection remain unknown and cannot be included as part of the EIA. In line with SONI guidance, it is not necessary to have secured the relevant consent at the application stage; however, the process for obtaining such consent should be at an advanced stage when submitting a connection application, with a relevant reference number (e.g. a planning reference from the Northern Ireland planning portal) provided within the Connection Application Form. Once the application becomes effective, consent must be secured within 180 days (approximately six months).

The environmental impact of the grid connection will therefore be considered under a separate application. Any forthcoming planning application for the grid connection would be subject to the EIA Regulations. If deemed EIA development, the project will be assessed in line with the EIA Regulations.

The Applicant will however endeavour to determine the grid connection details in advance of preparing the EIA for the proposed Development and, where possible, will consider the impacts of the connection and provide indicative details of likely routes and the anticipated method of connection (overhead or underground).

Should new guidance on the requirements for assessing the impacts of the proposed Development cumulatively with those of the grid connection become available in the meantime, the Applicant would seek to meet the requirements of this within the EIA application submission.

2.3. Indicative Layout Design

2.3.1. Wind Turbines

As an initial step, a repowering feasibility study was undertaken by the Applicant in 2025 (ERM, February 2025). This feasibility study identified initial constraints for consideration in the development on an indicative repower layout. The resultant indicative turbine locations are shown in **Figure 2.1** and summary details provided in **Table 2.1**. The selection of these turbine locations was also guided by a range of preliminary environmental and technical considerations identified, including:

- **Ecology and Ornithology:** Need for detailed surveys and avoidance of sensitive habitats and protected species.
- **Peat:** Requirement to avoid deep and active peat, minimise disturbance, and consider appropriate construction methods.
- **Landscape and Visual:** Consideration of turbine height and associated visual impacts, particularly on nearby receptors and in relation to landscape policy.
- **Noise:** Potential need for layout optimisation and turbine selection to mitigate operational and cumulative noise impacts.
- **Cultural Heritage:** Avoidance of known heritage assets and implementation of buffers where necessary.
- **Traffic and Transport:** Constraints relating to turbine delivery routes, including road capacity, infrastructure upgrades, and abnormal load access.

Table 2.1: Summary of proposed Development Turbines

Number of Turbines	Up to nine
Micrositing Allowance	50 m
Height of Turbines to Blade Tip	Up to 180 m
Type of Turbine	Three bladed, horizontal axis
Total Wind Farm Generation Capacity	Up to 54MW

Siting of the new turbines and the associated infrastructure layout for the proposed Development will be further refined through the EIA process to minimise environmental effects, taking account of detailed baseline studies, consultee feedback, and ongoing design development. The final design will then be assessed and reported within the ES that will accompany the planning application for the proposed Development.

2.3.2. Access and Access Tracks

The turbines would be delivered to a nearby port facility with appropriate handling facilities. The EIA will assess the suitability of the selected port and will also consider the potential environmental effects associated with turbine delivery, including increased traffic volumes. It will furthermore include an abnormal load route assessment to identify any constraints along the transport corridor.

Onsite access tracks would be required to provide access from the public road and between turbines, the temporary construction compound, operation building and substation. Where possible and to minimise environmental effects, the existing access tracks within the Site would be reused and upgraded as appropriate. New access tracks, where required, would be constructed of a graded stone and width of c.5 m, with increase at bends / corners or as appropriate for the ground conditions.

Further detailed assessment (abnormal indivisible load) and proposed Development layout design in conjunction with stakeholder consultation will be undertaken during the EIA to avoid potentially significant environmental effects (further details provided in **Chapter 11**).

2.3.3. Substation and Grid Connection

Underground cabling, laid where possible alongside the access tracks, would link the turbine transformers to the existing control building and substation area. Each turbine transformer would be located either within the turbine nacelle, within the base of the tower or in a small enclosure at the base of the turbine.

An upgraded substation would be required as part of the proposed Development and would potentially be sited in the same location as the existing substation and designed to the standard required by System Operator for Northern Ireland (SONI) for the accommodation of substation equipment, however as stated in section 2.2, a grid connection has not been secured at this time.

2.4. Decommissioning and Construction Activities

Decommissioning of the existing Callagheen Windfarm would be, where appropriate, in accordance with the approved Construction and Decommissioning Method Statement (CDMS) dated 21 December 2004.

The CDMS requires that following removal of the turbines, the concrete foundation will be chopped back to 500mm below existing ground level and the steel foundation insert will also be cut back and treated with a proprietary corrosion system, then the foundation will be backfilled with material generated local to the foundation, and topsoiled. It requires additional information to be supplied after construction of the wind farm and kept in a health and safety file; this would later be formalised within the document as the 'decommissioning scheme' for the project and will be carried forward until the end of the wind farm's working life or further legislation is produced such that the document becomes non-compliant. At this point the decommissioning scheme would be amended accordingly.

Decommissioning and construction of the proposed Development would involve:

- Clearance of vegetation around existing tracks and crane hardstanding;
- Upgrade of existing tracks and the Site entrance for use by decommissioning and construction vehicles, where required;
- Construction of a temporary construction compound;
- Decommissioning and dismantling of the existing turbines and substations;
- Removal of the turbine components from the Site by heavy goods vehicles (HGV) or possibly abnormal loads if required for resale;

- Cutting and removal of turbine and transformer bases to c.1 m below the surface and backfilling with suitable topsoil, generated from construction activities elsewhere on the Site;
- Retention of hardstanding and access track areas not required for reuse, in order to avoid potential environmental impacts associated with their removal;
- Responsible disposal of decommissioning waste, in full compliance with the applicable waste management regulations in force at the time;
- New access track construction;
- Excavation and construction of turbine foundations and hardstanding;
- New substation construction;
- Cable installation and electrical works;
- Turbine delivery and erection;
- Turbine commissioning; and
- Site restoration.

2.4.1. Indicative Programme

It is expected that the construction phase will run in parallel with the decommissioning of the existing wind farm and the overall programme would be c.24 months.

In the event that a grid connection cannot be achieved in the necessary timescale to allow concurrent development, it may become necessary to decommission the operational Callagheen Windfarm and restore the Site, in advance of the construction phase for the proposed Development.

The Applicant is cognisant of the benefits of decommissioning and construction taking place concurrently in terms of minimising disruption to the receiving environment. To facilitate this, the Applicant would welcome the opportunity to engage with the Council to agree a revised CDMS, which is sensitive to the timelines of the proposed repowering.

Alternatively, it may be considered an appropriate approach to extend the operational life of the existing Callagheen Windfarm via an application under Section 54 of the Planning Act (Northern Ireland) 2011, to vary Planning Condition no 10 from planning consent; Planning Appeals Commission Ref No.2003/A208 and Planning Ref. No. L/2001/1514/F, in order to facilitate concurrent decommissioning and construction of the proposed Development.

2.5. Future Decommissioning of the proposed Development

The life expectancy of the repowered wind farm would be 40 years. Future decommissioning would therefore be undertaken and would be broadly similar to that outlined in **Section 2.4**.

3. Approach to EIA

EIA is a statutory procedure which draws together, in a systematic way, an assessment of the likely significant environmental effects arising from a development. In the case of the proposed Development, it is a requirement under The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 (as amended).

As the process has numerous steps (outlined further below), it allows for the opportunity to 'design out' or avoid significant adverse environmental effects through the design evolution of the proposed Development.

An iterative design approach is already being undertaken for the proposed Development and will continue to be adopted throughout the EIA process. The iterative design approach allows for a design that would work well for both the local environment and environmental resources within the area, as well as being an economically viable repower.

The Applicant will utilise previous data collected from the existing operational Callagheen Windfarm, together with studies completed to date and those planned for the proposed Development, to supplement updated surveys where appropriate and inform the EIA. The Applicant has a comprehensive understanding of the Site and the local vicinity from existing operations and has completed a feasibility study, preliminary environmental constraints analysis, ornithology, bat, peat probing and National Vegetation Classification surveys. This has allowed for the design identified within the Scoping Report to have 'designed out' some potential impacts to the environment already. The Operational Windfarm ES (B9 Energy, RES, 2001) and Feasibility Report (ERM, 2025) has been referenced and used to inform the Scoping Report alongside completed surveys and assessment.

Consultees are requested to respond where possible, to scope in those features and topics that are likely to experience a significant impact and allowing others to be scoped out. In doing so the EIA will be focused on key effects.

The EIA will determine what the effect, either directly or indirectly, would be from the proposed Development by comparing the baseline conditions with the conditions that would prevail should the proposed Development be constructed and operated. The environmental effects of the proposed Development will be predicted in relation to environmental receptors (e.g. people, built resources and natural resources).

A distinction will be made in the assessments between impacts and effects, where:

- Impacts are defined as the predicted change to the baseline environment attributable to the Proposed Development; and
- Effects are the consequence of impacts on environmental resources or receptors.

3.1. What Will the EIA Assess?

The EIA will assess the decommissioning of the existing Callagheen Windfarm, and the construction, operation and future decommissioning of the Callagheen Windfarm Repowering.

Impacts from decommissioning are typically similar to the construction phase effects of a wind farm development. In the case of the proposed Development, decommissioning of the existing operational wind farm will overlap, at least in part, with the construction of the proposed Development. Furthermore, this decommissioning would involve removal of 13 existing turbines, while any future decommissioning of the Callagheen Windfarm Repowering in c.40 years would be of fewer (up to nine) turbines. Such an overlap is considered to represent a reasonable worst-case scenario in terms of potential environmental impact and therefore provides a more conservative basis for assessment.

The geographical coverage of the EIA will take account of the following:

- The physical extent of the proposed works;
- The nature of the baseline environment and the manner in which effects are propagated; and

- National and Local planning and policy context for the proposed Development.

In accordance with the EIA Regulations, the EIA will also consider whether the proposed Development could give rise to significant effects on the environment in another state (i.e. transboundary effects). Given the Site location in proximity to the border with the Republic of Ireland (RoI), the EIA will take account of potential pathways for effects to extend beyond Northern Ireland, for example via hydrological connections to cross-border catchments and designated sites, and through impacts that could affect receptors which move across the border (such as mobile species). Where any potential for significant transboundary effects is identified, this will be reported within the ES and, where relevant, addressed through topic-specific assessment (including Habitats Regulations Assessment for cross-border European sites).

3.2. Baseline

As the existing Callagheen Windfarm has been in operation for approximately 20 years, the baseline scenario for the EIA is not that of an undisturbed greenfield site.

The current baseline includes the land use conditions at the current time. This incorporates all existing site infrastructure, access tracks, hardstanding, cables, substations, as well as the existing 13 wind turbines and foundations. The assessments therefore use a “with windfarm” scenario as the current, comparative land use baseline.

As it is possible that the wind farms will not be decommissioned and constructed concurrently, it is appropriate to also consider a baseline scenario where the existing wind farm is decommissioned and not repowered (condition 10 of the permission for the existing Callagheen Windfarm requires decommissioning and restoration on expiry of the permission, which is 25 years from the connection of electricity from the project to the grid). This means there would be two baselines for assessment purposes:

- The **comparative baseline** - where the existing wind farm is in place (the “with wind farm” scenario); and
- The **reparative baseline** – a future baseline where the existing wind farm has been decommissioned and the Site restored, as required by condition 10 of the operational wind farm’s consent.

Schedule 4 of the EIA Regulations contains a list of information which must be included in an ES (as per Regulation 11(2)). Paragraph 3 of Sch 4 requires the following to be included:

“A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of availability of environmental information and scientific knowledge.”

The reparative baseline represents a likely evolution of the baseline scenario without implementation of the proposed Development, given the permission for the existing wind farm contains decommissioning and restoration obligations, in other words it is a legal requirement. However, as noted at paragraph 2.4.1 above, the Applicant would welcome the opportunity to agree a revised CDMS with the Council with a view to minimising disruption to the receiving environment, in circumstances where disruption may be amplified by the requirement to decommission the existing windfarm and restore the site before commencing works on the repowered wind farm at a later date.

Collection of environmental baseline data for this proposed Development is ongoing, and the EIA team will ensure that sufficient data is obtained to enable a robust assessment, appropriate to the nature and scale of the proposed Development. The extent of the baseline assessment will be determined using both

professional judgement and industry best practice and guidance. It will consist of desk-based studies, consultation, field survey and monitoring.

The sensitivity of the baseline conditions will then be assessed in line with best practice guidance, legislation, statutory designations and/or professional judgement. Each EIA discipline will specify their own appropriate sensitivity criteria that will be applied during the EIA. In general, the criteria tend to define sensitivities from very high to negligible for further consideration during determination of significance.

To determine the future comparative baseline scenario, the likely environmental conditions of the Site in the absence of the proposed Development, including following decommissioning and restoration, must be predicted.

3.3. Prediction of Impacts and Evaluation of Effects

The prediction of impacts examines the change to the baseline environment that could result from the decommissioning of the operational Windfarm, and the construction and operation of the proposed Development. To guide the evaluation of effects, the effects will be classified into one or more of the following:

- Positive effects that have a beneficial influence, negative effects that have an adverse influence;
- Temporary effects that persist for a limited period only, for example, due to particular construction activities;
- Permanent effects that result from an irreversible change to the baseline environment or which persist for the foreseeable future;
- Direct effects that arise from activities that form an integral part of the proposed Development;
- Indirect effects that arise from activities not explicitly forming part of the proposed Development;
- Secondary effects that arise as a result of an initial effect of the proposed Development; and
- Cumulative effects that arise from the combination of different impacts at a specific location, the recurrence of impacts of the same type at different locations, the interaction of different impacts over time, or the interaction of impacts arising from the proposed Development in conjunction with other development projects.

General criteria for assessing the magnitude of an effect are presented in **Table 3.1**. Each EIA discipline will apply their own appropriate magnitude of effects criteria during the EIA, with the details documented in the ES.

Table 3.1: General Criteria for Determining Magnitude of Effect

Magnitude	Definition
High	Total loss or major alteration to key elements/features of the baseline conditions
Medium	Partial loss or alteration to one or more key elements/features of the baseline conditions.
Low	Minor shift away from the baseline conditions.
Negligible	Barely discernible change from baseline conditions.

3.2.3. Significance

The sensitivity of the receptor and the magnitude of the predicted effect will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects. **Table 3.2** outlines general criteria used for determining significance. Effects predicted to be of major or moderate significance (as highlighted in **Table 3.2**) are considered to be significant in the context of the EIA Regulations.

Table 3.2 – General Criteria for Determining Significance of Effect

Magnitude of Effect	Sensitivity of Receptor				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

3.3.1. Mitigation of Environmental Effects

Where the EIA identifies likely significant adverse environmental effects, mitigation measures will be proposed in order to “avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment” (EIA Regulations). The mitigation measures may be embedded in the design, involve adoption of certain construction practices and monitoring processes, or may be compensatory. In addition, enhancement measures may be incorporated into design of the proposed Development to maximise environmental benefits.

3.2.2. Residual Effects

The significance of residual effects will then be determined by correlating the magnitude of the change (or impact) arising from the proposed Development with the sensitivity of the particular attribute under consideration, in combination with the compensatory (and enhancement) mitigation measures.

3.4. Consultation

The Applicant considers consultation with statutory, non-statutory consultees and local communities as an integral part of the iterative EIA process and recognises the benefits in carrying out early consultation with all relevant parties. Consultation with statutory and non-statutory consultees is underway and will progress with the circulation of this Scoping Report and will continue for the duration of the EIA process in accordance with the requirements of the Planning Authority.

Additionally, the Applicant is keen to engage with local communities close to the proposed Development to gather their views, so these can, where possible, inform the design process and comply with the requirements of the Planning Act (Northern Ireland) 2011, and meet best practice as encouraged by the Strategic Planning Policy Statement Edition 2 (SPPS2). The Applicant endeavours to seek the views of local communities throughout the EIA process and there will be other opportunities for key stakeholders and community members to share their views on the proposed Development as it progresses throughout the EIA and consenting process.

It is proposed to hold Public Information Days (PIDs) prior to submission of an application for the proposed Development, at locations yet to be determined, in the vicinity of the site. The location of the PIDs will be discussed and agreed with Fermanagh & Omagh District Council, and it is expected that a PID will be held in ROI.

3.5. Key Questions for Consultees

- Do the Planning Authority and Statutory Consultees agree that a PID should be held in a location within ROI as well as NI?
- Do the Planning Authority and Statutory Consultees agree with the approach to baseline?

4. Legislative and Policy Context

This section outlines the key legislation and policy documents of relevance to the proposed Development that will be considered throughout the EIA.

4.1. Legislative Context

4.1.1. Statutory Requirements for EIA

The EIA process will be undertaken in accordance with the requirements of:

- **The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 (as amended).**

These regulations transpose the EIA Directive (2011/92/EU as amended by 2014/52/EU) into Northern Ireland law. They require the competent authority to undertake an EIA of certain public and private projects likely to have significant environmental effects on the environment, including wind farms exceeding certain thresholds or located in sensitive areas.

The proposed Development is classified as a 'Schedule 2 development' under these regulations. The Applicant accepts that EIA is required.

- **The Planning Act (Northern Ireland) 2011.**

This Act governs the planning system in Northern Ireland and outlines the framework for the preparation, submission, and determination of planning applications, including those requiring EIA.

4.1.2. Nature Conservation and Biodiversity

The key legislation for protecting ecological features includes:

- **The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)**

Implements the EU Habitats Directive and Birds Directive. Developments likely to affect Natura 2000 sites (Special Areas of Conservation (SAC) and Special Protected Areas (SPA) require a Habitats Regulations Appraisal (HRA).

- **Wildlife (Northern Ireland) Order 1985 (as amended)**

Provides protection for wildlife and their habitats, including species that may be affected by the proposed Development.

- **The Environment (Northern Ireland) Order 2002**

Establishes a framework for environmental protection, including regulation of emissions and waste.

4.1.3. Water and Land

Key legislation for protecting hydrology and geology includes:

- **Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017**

Ensures the protection and sustainable use of water bodies potentially affected by the proposed Development.

- **Groundwater Regulations (Northern Ireland) 2009**

Controls activities that could lead to groundwater pollution, e.g. from turbine foundation works or drainage construction.

4.1.4. Cultural Heritage and Landscape

Key legislation for protecting cultural heritage and landscape includes:

- **The Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995**

Provides for the protection of archaeological and historic sites, which must be considered in site selection and turbine layout.

- **The Planning (Listed Buildings and Conservation Areas) Regulations (Northern Ireland) 2015**

Regulates developments near listed buildings and within conservation areas.

4.1.5. Other Relevant Legislation

- **Noise Act 1996 and Environmental Noise Regulations (Northern Ireland) 2006**

Relevant to assessing and mitigating noise impacts during decommissioning the existing operational wind farms and the construction and operation of the repower wind farm.

- **Air Quality Standards Regulations (Northern Ireland) 2010**

Ensures that the proposed Development does not compromise air quality standards.

- **Northern Ireland Climate Change Act 2022**

Supports low-carbon energy development and sets legally binding emissions targets which a development may contribute to.

4.2. Policy Context

Section 45 of the Planning Act 2011 states:

“45.-(1) Subject to this Part and section 91(2), where an application is made for planning permission, the council or, as the case may be, the Department, in dealing with the application, must have regard to the local development plan, so far as material to the application, and to any other material considerations.....”

As per section 6(4) of the Planning Act (NI) 2011, planning decisions must be made in accordance the local development plan unless material considerations indicate otherwise. Therefore, all decisions must be taken in accordance with the policy provisions of the relevant Local Development Plan (“LDP”), unless

material considerations indicate otherwise. In this legislative context, regard must be had to the Fermanagh & Omagh District Council Local Development Plan- Plan Strategy (LDP- PS). The LDP’s strategic approach to renewable energy development is detailed in the document’s renewable energy policy aim, which is as follows:

“To facilitate renewable energy development in appropriate locations within our borough, whilst balancing the recognised benefits against any potential environmental or social impacts.”

4.2.1. Northern Ireland Local Development Plan Policy Context

Table 4.1 – LDP-PS Planning Policy

LDP Topic Area	Relevant Planning Policy
Vision and Strategic Objectives	<ul style="list-style-type: none"> • Strategic Policy SP01 - Furthering Sustainable Development
Development and Design	<ul style="list-style-type: none"> • Policy DE01– General Amenity Requirements • Policy DE04- Integration and Design of Development in the Countryside • Policy DE05 – Rural Character
Tourism	<ul style="list-style-type: none"> • Policy TOU01 - Protection of Tourism Assets and Tourism Development
Natural Environment	<ul style="list-style-type: none"> • Policy NE01- Nature Conservations • Policy NE02- Protected Species and their Habitats • Policy NE03- Other Habitats, Species or Features of Natural Heritage Importance
Historic Environment	<ul style="list-style-type: none"> • Policy HE01- Archaeology • Policy HE02– Listed Buildings and their Settings
Renewable Energy	<ul style="list-style-type: none"> • Policy RE01- Renewable and Low Carbon Energy Generation • Appendix 6: The Landscape Wind Energy Strategy for Fermanagh and Omagh District Council
Flood Risk Management	<ul style="list-style-type: none"> • Policy FLD01 - Development in Floodplains • Policy FLD02 - Development affected by Surface Water Flooding outside Floodplains • Policy FLD03 - Sustainable Drainage Systems (SuDS) • Policy FLD04 - Protection of Flood Defences and Drainage Infrastructure • Policy FLD05 - Artificial Modification of Watercourses
Transportation	<ul style="list-style-type: none"> • Policy TR01- Land Use and Transport
Public Utilities	<ul style="list-style-type: none"> • Policy PU01 - Telecommunications

4.2.2. F&ODC – LDP PS Appendix 6- The Landscape Wind Energy Strategy

Policy RE01 details that in addition to the renewable and low carbon energy planning policy provisions that *“all proposals for wind energy development including single turbines and wind farms, extensions and repowering will be required to comply with the Fermanagh and Omagh Landscape Wind Energy Strategy.”*

The Wind Energy Capacity Study was published in 2018 in order to provide *“technical assessment on landscape, visual and cumulative development matters for Fermanagh and Omagh District Council in relation to wind energy, providing detailed guidance on the capacity of the landscape within the Local Authority area to accommodate wind turbine developments and associated infrastructure of varying scale, to inform the policies of the Fermanagh and Omagh Local Development Plan 2030.”*

“The key requirements of the study as described by the Local Authority are as follows:

- *To identify those areas where due to the sensitivity of the landscape and their special scenic qualities, wind turbines of any size or related infrastructure would not be acceptable;*
- *To identify where there is capacity remaining within the different landscape character areas to accommodate further wind farm developments;*
- *Consider the landscape and visual issues related to the potential extension and repowering of existing windfarms within the Fermanagh and Omagh area; and*
- *Provide guidance within those areas identified as capable of accommodating further wind farms or repowering of existing as to the number and height of turbines and scale of related infrastructure that would be appropriate, in landscape and visual terms.”*

The existing Callagheen Windfarm sits at the north-eastern part of Area 6: Loch Navar and Ballintempo Uplands and is designated as an Area of Highest Underlying Capacity.

The existing Callagheen Windfarm is within the Fermanagh Caveland Landscape Character Area (LCA) and with a Landscape Character Type of Limestone Uplands. All wind energy developments in this LCA “*should be perceived as discrete wind farm developments.*”

Specifically referencing potential expansion of Callagheen Windfarm, the study notes “*there may be some capacity some expansion of wind energy along the south-western edge of LCA 4 The Lough Navar and Ballintempo Uplands, where ‘large’ typology turbines are likely to be acceptable at the current location of the Callagheen Windfarm, albeit the windfarm not greatly extended in size.*”

Section 2.8.8 of the study provides guidance in respect of repowering:

“Repowering of existing windfarms that currently have relatively small turbines is becoming a more relevant consideration as the oldest windfarms approach their consented operational lifetime. It is likely that some of these sites will propose to be repowered with turbines of 150m or greater height. In this case, all the generic considerations of scale, lighting and size contrast covered by existing published guidance, the LCS 2016 guidance and this guidance would apply. However, it is worth considering specific situations which may arise where the effects, adverse or beneficial, of repowering with significantly larger turbines can be notable:

- *Replacing many small turbines with fewer, larger turbines can present a simpler, less cluttered appearance*
- *Large turbine blades rotate more slowly than smaller turbine blades, presenting a less busy, less cluttered appearance*
- *Spacing between larger turbines is greater than between smaller turbines, which also reduces clutter but may mean more area is required to accommodate a windfarm*
- *Larger turbines will have a wider visibility and will, for most visibility conditions, be more prominent when seen at distance*
- *Aviation lighting will be required, leading to effects in low light Larger turbines require larger scale infrastructure, including access/ delivery roads and crane platforms, leading to direct and permanent effects of a greater magnitude. This is particularly the case where steeper ground which would require larger cuttings and embankments to maintain appropriate road gradients and geometry.”*

4.2.3. Material Planning Consideration- Regional Development Strategy for Northern Ireland 2035 (RDS 2035)

The Regional Development Strategy 2035 (RDS 2035) strategic guidance actively promotes the shift to a lower carbon economy, the adaptation to climate change and the delivery of a secure and sustainable energy supply. One of the eight key aims of the RDS 2035 is to:

“Take action to reduce our carbon footprint and facilitate adaption to climate change.”

The RDS 2035 regional guidance for the economy prioritises a secure energy supply stating:

“RG5: Deliver a sustainable and secure energy supply.”

Supplementary guidance within the RDS 2035 seeks to:

- *“Increase the contribution that renewable energy can make to the overall energy mix*
- *Strengthen the grid.*
- *Provide new gas infrastructure.*
- *Work with neighbour’s.*
- *Develop “Smart Grid” Initiatives.”*

Regional guidance for the environment at policy RG9 prioritises the need to reduce NI’s carbon footprint and the adaption of the region to climate change:

“RG9: Reduce our carbon footprint and facilitate mitigation and adaptation to climate change whilst improving air quality.”

The RDS 2035 notes that climate change is *“increasingly seen as one of the most serious problems facing the world”* and outlines that *“consideration needs to be given on how to reduce energy consumption and the move to more sustainable methods of energy production.”* The RDS 2035 identifies climate change mitigations measures which include those to:

- *“Increase the use of renewable energies;*
- *Utilise local production of heat and/or electricity from low or zero carbon energy sources.”*

The RDS 2035 outlines key climate change adaption measures including:

- *“Re-use land, buildings and materials;*
- *Minimise development in areas at risk from flooding from rivers, the sea and surface water run-off;*
- *Protect soils;*
- *Protect and extend the ecosystems and habitats that can reduce or buffer the effects of climate change.”*

Given the rural location of the Development, policy SFG13 is also pertinent.

“SFG13: Sustain rural communities living in smaller settlements and the open countryside.”

Section 3.98 states:

“The distinctive settlement pattern of main and small towns, villages and dwellings in the open countryside is unique within these islands. Many people working on the land are conscious of continuing a cultural

tradition. They have a strong interest in sustaining that tradition, the land itself and the living that it provides. It is important that development is sensitive to these issues. The rural community is the custodian of our exceptional natural and built environment. In rural areas, the aim is to sustain the overall strength of the rural community living in small towns, villages, small rural settlements and the open countryside."

4.2.4. Material Planning Considerations- Strategic Planning Policy Statement, Edition 2 (2025)

The Strategic Planning Policy Statement (SPPS) is the regional planning policy document for Northern Ireland. It contains a suite of planning policy and is a material planning consideration in the assessment of all planning applications in NI. SPPS Edition 2 was published in December 2025. The SPPS has been updated in respect of the provisions of the renewable and low carbon planning policy to reflect the requirements of the Climate Change Act (Northern Ireland) 2022.

Section 2.1 of the SPPS Edition 2 outlines that the planning system should positively and proactively facilitate development in Northern Ireland, as detailed below.

"The objective of the planning system, consistent with Part 1, Section 1 of the Planning Act (Northern Ireland) 2011 (hereafter referred to as the 2011 Act), is to secure the orderly and consistent development of land whilst furthering sustainable development and improving well-being. This means the planning system should positively and proactively facilitate development that contributes to a more socially economically and environmentally sustainable Northern Ireland. Planning authorities should therefore simultaneously pursue social and economic priorities alongside the careful management of our built and natural environments for the overall benefit of our society."

Section 2.3 notes that *"the planning system operates in the public interest of local communities and the region as a whole, and encompasses the present as well as future needs of society. It does not exist to protect the private interests of one person against the activities of another, although private interests may coincide with the public interest in some cases. It can be difficult to distinguish between public and private interests, but this may be necessary on occasion."*

Section 3.3 of the SPPS Edition 2 states that *"planning authorities should deliver on all three pillars of sustainable development in formulating policies and plans."* In terms of the environment, this is stated as:

"Protecting and enhancing the built and natural environment (including our heritage assets, landscape and seascape character); seeking to ensure the planning contributes to a reduction in energy and water usage, helping to reduce greenhouse gas emissions by continuing to support growth in renewable energy sources....."

Furthermore, section 3.4 states:

"The SPPS does not seek to promote any one of the three pillars of sustainable development over the other. In practice, the relevance of, and weight to be given to social, economic and environmental considerations is a matter of planning judgement in any given case. Therefore, in summary, furthering sustainable development means balancing social, economic and environmental objectives, all of which are considerations in the planning for and management of development."

Section 3.7 further expounds that *"furthering sustainable development also means ensuring the planning system plays its part in supporting the Executive and wider government policy and strategies in efforts to address any existing or potential barriers to sustainable development. This includes strategies, proposals and future investment programmes for key transportation, water and sewerage, telecommunications and energy infrastructure (including the electricity network)."*

In terms of the planning application decision making process, section 3.8 provides clear guidance on the policy interpretation of the SPPS.

“Under the SPPS, the guiding principle for planning authorities in determining planning applications is that sustainable development should be permitted, having regard to the development plan and all other material considerations, unless the proposed development will cause demonstrable harm to interests of acknowledged importance. In practice this means that development that accords with an up-to-date development plan should be approved and proposed development that conflicts with an up-to-date development plan should be refused, unless other material considerations indicate otherwise.”

Section 3.13 indicates that the planning system should help to mitigate and adapt to climate change by measures which include:

- *“shaping new and existing developments in ways that reduce greenhouse gas emissions and positively build community resilience to problems such as extreme heat or flood risk;*
- *promoting sustainable patterns of development, including the sustainable reuse of historic buildings where appropriate, which reduces the need for motorised transport, encourages active travel, and facilitates travel by public transport in preference to the private car;*
- *avoiding development in areas with increased vulnerability to the effects of climate change, particularly areas at significant risk from flooding, landslip and coastal erosion and highly exposed sites at significant risk from impacts of storms;*
- *considering the energy and heat requirements of new developments when designating land for new residential, commercial and industrial development and making use of opportunities for energy and power sharing, or for decentralised or low carbon sources of heat and power wherever possible;*
- *promoting the use of energy efficient, micro-generating and decentralised renewable energy systems.”*

Section 6.214 highlights that NI has significant renewable energy resources and a vibrant renewable energy industry while Section 6.217 states that:

“... renewable and low carbon energy development here reduces our dependence on imported fossil fuels and brings diversity and security of supply to our energy infrastructure”.

Section 6.219 (Edition 2) outlines that *“The aim of the SPPS for this subject policy is to maximise sustainable renewable and low carbon energy from wide range of technologies, at various scales, in appropriate locations within the built and natural environment, without compromising other environmental assets of acknowledged importance.”*

Paragraph 6.218 of SPPS Edition 1 had stated; *“The aim of the SPPS in relation to renewable energy is to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment in order to achieve Northern Ireland’s renewable energy targets and to realise the benefits of renewable energy without compromising other environmental assets of acknowledged importance.”*

This is a clear progression in emphasis on the role that decision-makers play, with the specific wording important; maximising, rather than facilitating. This is in line with the statutory and policy targets, including those outlined within the Climate Change (Northern Ireland) Act 2022.

This is again reaffirmed within SPPS Edition 2, at paragraph 6.220, outlining the regional strategic objectives, which notes the objective to *“ensure that sustainable renewable and low carbon energy*

development is facilitated at appropriate locations in order to increase the contribution to the transition to a net zero carbon economy, in accordance with the Climate Change Act.”

SPPS Edition 1, at paragraph 6.225, outlined; *“The wider environmental, economic and social benefits of all proposals for renewable energy projects are material considerations that will be given appropriate weight in determining whether planning permission should be granted.”*

SPPS Edition 2, at paragraph 6.221, states; *“In plan-making and decision-taking, planning authorities must give appropriate weight to climate considerations (including the target to generate 80% of electricity consumption from renewable sources by 2030) and to supporting efforts to protect and enhance biodiversity. Planning authorities must help facilitate delivery of the necessary increase in appropriate renewable and low carbon energy developments (electricity and heat) so that the contribution of this sector to the transition to a net zero energy is optimised. This requires careful balancing of the local impacts with the wider environmental, economic, and social benefits.”* (JUNO Planning and Environmental emphasis added)

SPPS Edition 2 again notes that the wider environmental, economic, and social benefits are material considerations, to be balanced against local impacts. However, it is emphasised that climate considerations (including the statutory and policy targets) and efforts to protect and enhance biodiversity must be given appropriate weight. This is a clear direction that decision-makers must give appropriate weight to the energy targets in decision-making. Furthermore, the policy reference to the appropriate weight to be afforded to enhancing biodiversity is also a notable policy development, which infers that potential biodiversity enhancement measures should be afforded appropriate weight in the wider planning judgement.

Furthermore, paragraph 6.237 of the SPPS Edition 2 states; *“Active peatland, for example, is of particular importance for its biodiversity, water, carbon capture and storage qualities which will be important material considerations which should be given significant weight. Degraded peatlands can also have natural heritage and potential carbon capture and storage value, and their protection and restoration potential can, therefore, also be a material consideration in the determination of planning applications on a case-by-case basis.”*

This is a policy departure from SPPS Edition 1 which stated; *“Active peatland is of particular importance to Northern Ireland for its biodiversity, water and carbon storage qualities. Any renewable energy development on active peatland will not be permitted unless there are imperative reasons of overriding public interest as defined under The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 as amended.”*

It also differs from F&ODC LDP-PS which, similar to SPPS Edition 1, states under Policy RE01 that *“any renewable energy development on active peatland will not be permitted unless there are imperative reasons of overriding public interest...”*

In addition, the SPPS Edition 2, at paragraph 6.230, states; *“Whilst advancements and changes in technology may mean schemes are not like for like, life extension and re-powering of existing development has the potential to maintain or enhance installed renewable energy generation, where appropriate. Significant weight will be given to the benefits of re-powering, expanding, and extending the life of existing solar and wind farms unless the impacts identified (including cumulative impacts) are unacceptable and cannot otherwise be made acceptable.”*

While Policy RE01 of the F&ODC LDP-PS does refer to repowering, and the potential benefits of such, the SPPS Edition 2 is clear on the significant weight to be afforded to the benefits of repowering proposals.

In respect of separation distances, Section 6.227 of the SPPS Edition 2 states; *“separation distances will be assessed on a case-by-case basis with a minimum separation distance to occupied property not less*

than 500m, generally applying.” This is a change from the previous edition, which espoused the requirement for a separation of 10 times rotor diameter to an occupied property (including temporarily unoccupied or approved properties) with a minimum distance of not less than 500m between would generally apply to wind farms. It is also a change from policy REO1 of the LDP-PS which was consistent with the provisions of EPPS Edition 1.

4.2.5. Northern Ireland Climate Change Act

Northern Ireland's first law to tackle climate change, the Climate Change Act (Northern Ireland) 2022 (the Climate Change Act), received Royal Assent on 6 June 2022. The Climate Change Act aims to have Northern Ireland play its part in the global and UK effort to tackle climate change by creating a framework that will establish a pathway to achieving emission reduction targets. This will help to ensure that Northern Ireland develops a greener, low carbon circular economy in which the environment can prosper and be protected.

The Climate Change Act includes a target of at least a 100% reduction in emissions from the baseline level by 2050 as well as a set of interim targets for 2030 (48% reduction from the baseline level) and 2040 (77% reduction from the baseline level) for reducing greenhouse gas emissions in Northern Ireland. Importantly, section 15 of the Climate Change Act specifies that *“The Department for the Economy must ensure that at least 80% of electricity consumption is from renewable sources by 2030.”*

In addition, section 52 provides that each Northern Ireland department must *“exercise its own functions, so far as is possible to do so, in a manner that is consistent”* with the objective to ensure that emissions targets are met.

4.2.6. Energy Strategy for Northern Ireland 2022- The Path to Net Zero

In December 2021, the Department for the Economy published the ‘Northern Ireland Energy Strategy- The Path to Net Zero’, which detailed Northern Ireland's energy future over the next ten years and set the renewable electricity targets for 2030- identifying that 70% of electrical energy needed to be sourced from renewables by 2030, with flexibility to increase this target. Please note that this target has been superseded by the target of 80% by 2030 through the Climate Change Act, as outlined in Section 4.2.5.

In April 2025, the Department for the Economy published the ‘Electricity Consumption and Renewable Generation in Northern Ireland: Year ending December 2024, which highlighted that for the 12-month period January 2024 to December 2024, 43.5% of total electricity consumption in Northern Ireland was generated from renewable sources. This represents a decrease of 2.3 percentage points on the previous 12-month period (January 2023 to December 2023). Of all renewable electricity generated within Northern Ireland over the 12-month period, 82.4% was generated from wind.

4.3. Key Questions for Consultees

- Do the Planning Authority and Statutory Consultees agree with the key LDP-PS policies listed in Table 4.1 against which the planning and environmental effects of the proposed Development will be assessed?
- Are there any other areas of policy guidance and/or planning considerations the Planning Authority and Statutory Consultees would recommend is considered during the EIA and included within the ES?
- The LDP-PS was adopted before the publication of the SPPS Edition 2. Furthermore, it is noted that the LDP-PS was first published in October 2022 (the Draft Plan Strategy version), while the Climate Change Act (NI) 2022 was enacted in June 2022. The LDP-PS does not make provision for the Climate Change Act (NI) 2022. Does the Planning Authority agree with our position that SPPS Edition 2 should be afforded greater material weight in the decision-making process where it introduces a planning

policy that is different from the provisions of the LDP-PS? We consider that this is in line with Section 6(4) and Section 45 (1) of the 2011 Act.

- Without prejudice to the wider planning determination process, has the Planning Authority a position in respect of the principle of granting planning permission with a ten-year duration period planning condition? We note that this is consistent with the legislative provisions of section 61(1)(b) of the Planning (NI) Act 2011.

5. Ecology

5.1. Introduction

This chapter outlines the potential effects of the proposed Development on terrestrial and freshwater ecological receptors (excluding ornithology, included in **Chapter 6**) and sets out the methodology to be undertaken to further assess the likely significant effects during the EIA.

5.2. Baseline and Key Sensitivities

5.2.1. Desk Study

To inform this Scoping Report, a web-based search was undertaken to identify and provide information on statutory sites with an international, national or local designation for ecological interests, located within proximity to the Site boundary. Additionally, a search was undertaken for records available in the public domain of relevant priority and protected species from within 5 km of the Site's developable area in the last ten years (2015 to 2025). The online GIS tool Northern Ireland Environment Agency (NIEA) Natural Environment Map Viewer¹, the online GIS tool National Parks and Wildlife Service (NPWS) Designations Viewer² and the National Biodiversity Network (NBN) Atlas³ were used. Data were sought for the following (with search areas defined):

- Special Areas of Conservation (SACs) – within 10 km of the developable area;
- Area of Special Scientific Interest (ASSIs) – within 5 km of the developable area;
- Local and National Nature Reserves (including Royal Society for the Protection of Birds (RSPB) and Wildlife Trust Reserves) – within 5 km of the developable area;
- Locally designated sites such as Local Wildlife Sites (LWS) – within 2 km of the developable area; and
- Northern Ireland Priority species⁴ and species protected under Wildlife (Northern Ireland) Order Schedules 5 (animals which are protected at all times), 6 (animals which may not be killed or taken by certain methods), 6A (animals which may not be killed or taken by trapping or snaring) and 7 (animals which may not be sold alive or dead at any times) – within 5 km of the developable area.

Before the ES is submitted, further records of relevant ecological data shall be requested from the Centre for Environmental Data and Recording (CEDaR), to obtain any records they hold for the developable area and a 5 km buffer. It is not considered necessary to contact the National Biodiversity Data Centre (Republic

¹<https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=bb721449cb8949e7a4f90c722bd2d80b>

²<https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba>

³<https://nbnatlas.org/>

⁴NIEA (2023) List of Northern Ireland priority species 2023. URL: <https://www.daera-ni.gov.uk/publications/list-northern-ireland-priority-species-2023>

of Ireland environmental data centre) as only a small portion of the 5 km buffer of the developable area is within the RoI (see **Figure 5.1**).

5.2.2. Desk Study Results

Results obtained for protected areas within the vicinity of the proposed Development are shown in **Table 5.1** and **Figure 5.1**. There are eight SACs within 10 km of the developable area and 14 ASSIs within 5 km of the developable area. The closest designated site to the proposed Development is Lough Navar Scarps and Lakes ASSI, which is adjacent to the developable area. Five SACs are located within Northern Ireland (NI) and three are within the RoI. Lough Melvin SAC lies within both Northern Ireland and the RoI and has been listed here as two sites as some features are included on the conservation objectives for only one of the countries.

Additionally, there are two Nature Reserves within 5 km of the developable area and three LWSs within 2 km of the developable area. No information could be found on the designation criteria or habitats/species present within the LWSs or Nature Reserves. Further information on these designated sites will be sought from CEDaR as part of the EIA. Lough Naman Bog LWS and Magho Cliffs LWS both have associated ASSIs and therefore information can be obtained from these designations.

Records were found for 13 priority species within 5 km of the developable area from the last ten years (see Table 5.2). Records include six plant species (all NI Priority Species only), one reptile, one invertebrate and five mammals.

Table 5.1: Designated Sites within Relevant Search Distances

Site	Designation	Distance from proposed Development (km)	Designation features
Lough Melvin	SAC (NI)	5.03	<ul style="list-style-type: none"> • Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorellatea uniflorae</i> and/or of the <i>Isoeto-Nanojunceta</i> • <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles • Atlantic salmon (<i>Salmo salar</i>)
Loch Melvin	SAC (RoI)	5.97	<ul style="list-style-type: none"> • Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorellatea uniflorae</i> and/or of the <i>Isoeto-Nanojunceta</i> • <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) • Atlantic salmon • Otter (<i>Lutra lutra</i>)
Pettigoe Plateau	SAC (NI)	5.55	<ul style="list-style-type: none"> • Blanket bog • European dry heaths • Natural dystrophic lakes and ponds • Northern Atlantic wet heaths with <i>Erica tetralix</i> • Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorellatea</i>

Site	Designation	Distance from proposed Development (km)	Designation features
			<i>uniflorae</i> and/or of the <i>Isoeto-Nanojunceta</i>
Largalunny	SAC (NI)	5.75	<ul style="list-style-type: none"> • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles
Lough Golagh and Breesy Hill	SAC (RoI)	5.80	<ul style="list-style-type: none"> • Blanket bog
West Fermanagh Scarplands	SAC (NI)	7.15	<ul style="list-style-type: none"> • Blanket bog • Limestone pavement • Petrifying springs with tufa formation • <i>Tilio-Acerion</i> forests of slopes, screes and ravines • Alkaline fens • <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils • Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i>-type vegetation • Northern Atlantic wet heaths with <i>Erica tetralix</i> • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>)
Monawilkin	SAC (NI)	7.84	<ul style="list-style-type: none"> • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles
Tamur Bog	SAC (RoI)	9.0	<ul style="list-style-type: none"> • Northern Atlantic wet heaths with <i>Erica tetralix</i> • Blanket bog • Depressions on peat substrates of the <i>Rhynchosporion</i>
Lough Navar Scarps and Lakes	ASSI	Adjacent	<ul style="list-style-type: none"> • Scarps, heathland, blanket bog, grassland, lake and upland fen • Freshwater white-clawed crayfish (<i>Austropotamobius pallipes</i>) • Rare snails (<i>Spermodea lamellata</i>, <i>Succinea oblonga</i>, <i>Vertigo antivertigo</i> and <i>V. lilljeborgi</i>) • Rare bryophytes
Lergan	ASSI	1.11	<ul style="list-style-type: none"> • Wide range of grassland types • An abundance of orchids: lesser butterfly orchid (<i>Platanthera bifolia</i>), heath spotted orchid (<i>Dactylorhiza maculata</i>) and common twayblade (<i>Neottia ovata</i>)
The Cliffs of Magho	ASSI	1.31	Woodland flora and fauna
Glennasheevar	ASSI	1.61	Peatland flora (blanket bog) and associated fauna

Site	Designation	Distance from proposed Development (km)	Designation features
Lough Naman Bog and Lake	ASSI	2.52	Intact blanket bog and oligotrophic lake and associated flora and fauna
Big Dog Scarps and Lakes	ASSI	3.12	Range of upland habitats and associated flora and fauna, including white-clawed crayfish
Ground Bridge	ASSI	3.77	Limestone cave with common cave spider (<i>Meta menardi</i>)
Lough Scolban	ASSI	3.95	Mid-altitude lake supporting aquatic plants indicative of unenriched and unpolluted oligo-mesotrophic waterbodies
Glen East	ASSI	4.02	Species rich wet grassland
Tullysrana-deega	ASSI	4.28	<ul style="list-style-type: none"> Lowland species rich grassland Melancholy thistle (<i>Cirsium heterophyllum</i>)
Moneendogue	ASSI	4.60	Species rich grassland
Drumlisaleen	ASSI	4.60	Range of grassland types including species rich hay meadows
Tower More	ASSI	4.60	<ul style="list-style-type: none"> Species rich wet grassland Wet heath Marsh fritillary butterfly (<i>Euphydryas aurinia</i>)
Lough Aleater	ASSI	4.82	Aquatic flora and fauna: mid-altitude lake surrounded by steep slopes.
Lough Naman Bog	Nature Reserve	2.52	Not available
Castlecald-well Forest	Nature Reserve	4.23	Not available. Site is RSPB nature reserve
Magho Cliffs	LWS	0.94	Not available
Ardgart	LWS	1.03	Not available
Rosscor House	LWS	1.78	Not available

Table 5.2: Record of Protected and Priority Species within 5 km of the Site

Common Name	No of records	Most recent record	Legal protection/ conservation status
Blue-eyed-grass	1	2023	NI Priority Species ⁵
Common lizard (<i>Zootoca vivipara</i>)	2	2021	Wildlife (NI) Order Schedule 5, 6 and 7; NI Priority Species

⁵ Priority species as designated under the Wildlife and Natural Environment Act (Northern Ireland) 2011. URL: <https://www.legislation.gov.uk/nia/2011/15/contents>

Deergrass (<i>Trichophorum cespitosum</i>)	1	2023	NI Priority Species
Eyebright (<i>Euphrasia agg.</i>)	2	2025	NI Priority Species
Green spleenwort (<i>Asplenium viride</i>)	2	2025	NI Priority Species
Heath bumblebee (<i>Bombus jonellus</i>)	4	2020	NI Priority Species
Holly fern (<i>Polystichum lonchitis</i>)	1	2025	NI Priority Species
Irish stoat (<i>Mustela erminea</i> subsp. <i>hibernica</i>)	2	2024	Wildlife (NI) Order Schedule 6A; NI Priority Species
Irish hare (<i>Lepus timidus</i> subsp. <i>hibernicus</i>)	3	2022	Wildlife (NI) Order Schedule 6; NI Priority Species
Otter (<i>Lutra lutra</i>)	1	2016	Wildlife (NI) Order Schedule 6 and 6A; NI Priority Species
Pine marten (<i>Martes martes</i>)	10	2022	Wildlife (NI) Order Schedule 5, 6, 6A and 7; NI Priority Species
Red squirrel (<i>Sciurus vulgaris</i>)	32	2025	Wildlife (NI) Order Schedule 5, 6 and 7; NI Priority Species
Tunbridge filmy-fern (<i>Hymenophyllum tunbrigense</i>)	1	2024	NI Priority Species

5.3. Habitats

National Vegetation Classification (NVC) surveys were undertaken in June 2025 within the developable area following standard methodology^{6,7}. Surveys mapped NVC habitat polygons in the field, which were identified to sub-community level where possible. A minimum polygon size of 25 m² was used and any areas of habitat smaller than this were recorded as target notes or mosaics - whichever was most appropriate. Where mosaics were recorded, target notes include a description which indicates the percentage of each community/sub-community across the polygon. Target notes were taken for any other notable observations e.g. habitat patches that are considered to be botanically rich and presence of protected or invasive plant species.

5.3.1. NVC Results

Habitat communities recorded during the NVC survey are shown on **Figure 5.2**. A list of NVC communities/sub-communities recorded on site is presented in **Table 5.3**, which includes an assessment of the likely Phase 1 habitat for each NVC community. Target notes are shown in **Table 5.4**.

The predominant NVC community recorded was M19 blanket mire, particularly in the north of the developable area. Areas in the south of the developable area were generally considered to be degraded

⁶ Rodwell, J.S. (2006) *NVC Users' Handbook*, JNCC, Peterborough, ISBN 978 1 86107 574 1.

⁷ Rodwell, J.S. (1998) *British Plant Communities Volume 2: Mires and Heaths*. Cambridge University Press, Cambridge, ISBN 978 0 52162 720 7.

bog or non-bog communities, with M15 wet heath and M25 mire communities dominating. There is also an area of pastureland to the north of the currently operational turbines.

Table 5.3: NVC Communities Recorded at the Proposed Development

NVC community	NVC sub-communities recorded	Likely Phase 1 Habitat
M3 <i>Eriophorum angustifolium</i> bog pool community*	NA	E4 Bare peat
M5 <i>Carex rostrata</i>–<i>Sphagnum squarrosum</i> mire	NA	E2.1 Acid/neutral flush
M6 <i>Carex echinata</i>–<i>Sphagnum recurvum/auriculatum</i> mire	M6a <i>Carex echinata</i> sub-community M6b <i>Carex nigra</i> – <i>Nardus stricta</i> sub-community M6c <i>Juncus effusus</i> sub-community M6d <i>Juncus acutiflorus</i> sub-community	E2.1 Acid/neutral flush
M9 <i>Carex rostrata</i>–<i>Calliergon cuspidatum/giganteum</i> mire	M9a <i>Campylium stellatum</i> – <i>Scorpidium scorpioides</i> sub-community	B5 Marshy grassland
M10 <i>Carex dioica</i>–<i>Pinguicula vulgaris</i> mire	M10a <i>Carex demissa</i> – <i>Juncus bulbosus/kochii</i> sub-community	E2.2 Basic flush
M15 <i>Scirpus cespitosus</i>–<i>Erica tetralix</i> wet heath	M15b Typical sub-community	D2 Wet heath (where peat is <0.5m), or E1.7 Wet modified bog (where peat is >0.5m)
M17 <i>Scirpus cespitosus</i>–<i>Eriophorum vaginatum</i> blanket mire	M17a <i>Drosera rotundifolia</i> – <i>Sphagnum spp.</i> sub-community M17b <i>Cladonia spp.</i> sub-community M17c <i>Juncus squarrosus</i> – <i>Rhytidiadelphus loreus</i> sub-community	E1.6.1 Blanket bog, or E1.7 Wet modified bog, or E1.8 Dry modified bog
M19 <i>Calluna vulgaris</i>–<i>Eriophorum vaginatum</i> blanket mire	M19a <i>Erica tetralix</i> sub-community	E1.6.1 Blanket bog, or E1.8 Dry modified bog
M19-M15 transitional habitat between <i>Calluna vulgaris</i>–<i>Eriophorum vaginatum</i> blanket mire and <i>Scirpus cespitosus</i>–<i>Erica tetralix</i> wet heath	NA	E1.7 Wet modified bog, or E1.8 Dry modified bog
M20 <i>Eriophorum vaginatum</i> blanket & raised mire	M20a <i>Calluna vulgaris</i> – <i>Cladonia spp.</i> sub-community M20b Species poor sub-community	E1.8 Dry modified bog
M23 <i>Juncus effusus/ acutiflorus</i>–<i>Galium palustre</i> rush-pasture	M23a <i>Juncus acutiflorus</i> sub-community M23b <i>Juncus effusus</i> sub-community	B5 Marshy grassland

NVC community	NVC sub-communities recorded	Likely Phase 1 Habitat
M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	M25a <i>Erica tetralix</i> sub-community	B5 Marshy grassland (where peat is <0.5m), or E1.7 Wet modified bog (where peat is >0.5m)
H12 <i>Calluna vulgaris</i> – <i>Vaccinium myrtillus</i> heath	H12a <i>Calluna vulgaris</i> sub-community H12c <i>Galium saxatile</i> – <i>Festuca ovina</i> sub-community	D1 Dry heath
U4 <i>Festuca ovina</i> – <i>Agrostis capillaris</i> – <i>Galium saxatile</i> grassland	None recorded	B1 Acid grassland
U5 <i>Nardus stricta</i> – <i>Galium saxatile</i> grassland	None recorded	B1 Acid grassland
W23 <i>Ulex europaeus</i> – <i>Rubus fruticosus</i> scrub	None recorded	A2 Scrub

*M3 can also relate to areas of bare peat with *E. angustifolium* hummocks⁷. The unit of M3 recorded on site is an area of such bare peat.

*Taxonomy of *Scirpus cespitosus* has changed since publication of the NVC descriptions⁷ and is now *Trichophorum cespitosum* (Deergrass)

Table 5.4: NVC target notes

Target note number	Grid reference		Target note
	X	Y	
1	599321	854737	Sphagnum soakway running downhill.
2	599433	854685	Sphagnum in-filled drain with <i>Calluna vulgaris</i> , <i>Molinia caerulea</i> , <i>Trichophorum cespitosum</i> , <i>Erica tetralix</i> , <i>Potentilla erecta</i> and some <i>Eriophorum vaginatum</i> encroaching. <i>Drosera rotundifolia</i> present in places.
3	598863	854997	Sphagnum in-filled bog pool.
4	598818	855658	Rhododendron bushes.
5	598697	854551	Patch of <i>Schoenus nigricans</i> tussocks.

5.3.2. Protected Species

During the feasibility study conducted in 2024- 2025, suitable habitat (Blanket Bog) was identified within the developable area, this particular habitat is known to support many protected and/or priority species such as reptiles, bats and birds such as hen harrier. The habitat within the developable area is not considered to be suitable for red squirrel and pine marten due to the lack of woodland. However, the coniferous plantation adjacent to the eastern edge of the developable area could provide suitable habitat for these species.

The habitat within the developable area was assessed as having moderate suitability for commuting and foraging bats, based on the Bat Conservation Trust (BCT) guidelines (2023). A bat roost suitability survey was undertaken in March 2025 following BCT guidelines (2023) to determine if any potential roost features are present within the vicinity of the new turbine locations. It was noted, roosting opportunities

within the developable area were limited to the existing windfarm control building and small disused farm shed in the northwest of the Site.

5.3.3. Key Sensitivities

The proposed Development will result in direct habitat loss, some of which is likely to be bog habitat. The proposed Development will aim to avoid impacts on active peatlands, in line with NIEA guidance⁸ which states that *'there should be no development within active peatland unless there are imperative reasons of overriding public interest'*. Furthermore, layout design will aim to minimise impacts on inactive bog and other peatland habitats where possible.

Some species of bat are known to be of high risk to turbine collision. Therefore, there is the potential for bats to be impacted during the operational phase of the proposed Development.

5.4. Potential Effects Assessment

Potential effects on ecological features posed by the proposed Development are expected to be similar for the existing comparative baseline, and the reparative baseline. Therefore, it is considered appropriate to scope in/out the following effects for both baseline scenarios.

5.5. Scoped in Effects

5.5.1. Lough Melvin SAC

Lough Melvin SAC sits across the border of Northern Ireland and the RoI. It is designated for aquatic and terrestrial habitats and Atlantic salmon (and otter in the RoI only). Two of the watercourses within the developable area (in the south of the site) flow into Lough Melvin and there is therefore potential for the proposed Development to impact the SAC. HRA will be undertaken for the SAC.

5.5.2. Lough Navar Scarps and Lakes ASSI

Lough Navar Scarps and Lakes ASSI is adjacent to the developable area. It is designated for a variety of upland habitats as well as white-clawed crayfish and a selection of molluscs included on the Northern Ireland priority species list, which could also be present within the developable area. There is therefore potential for species and habitats connected to the ASSI to be impacted by the proposed Development.

5.5.3. Habitats

The proposed Development will result in habitat loss during the construction phase and may result in habitat loss during the decommissioning phase. Additionally, some of the areas in the developable area are on peatland. As such, an assessment will be required to ascertain the status of the peatland habitats (i.e. active, inactive, potential to become active) within the footprint of the proposed Development in line with NIEA guidance⁷ (active peat assessment) The proposed Development will be designed in such a way to avoid, where possible, impacts on active peat, in line with NIEA guidance⁷ and the provisions of the SPPS Edition 2, based on the results of the active peat assessment. Furthermore, site design will aim to minimise impacts on inactive bog and other peatland habitats were possible.

⁸ NIEA (2012) NIEA, *Natural Heritage, Development Management Team Advice Note Active Peatland and PPS18*. URL: <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/natural-guidance-NIEA-natural-heritage-development-management-team-advice-note-2012.pdf>

5.5.4. Protected Species

There is suitable habitat within the developable area and a 250 m buffer for protected mammals (otter, badger, pine marten and red squirrel). If any resting places (e.g. otter holt or badger sett) are recorded within 250 m of the currently operational wind farm and proposed Development, then there is the potential for decommissioning and construction phase activities to disturb or displace these protected species.

5.5.5. Bats

Some bat species are considered to be at high risk of collision with wind turbines, meaning that the proposed Development has potential to impact bats through collisions during the operational phase.

The majority of habitat within the Site boundary is considered to be unsuitable for supporting bat roosts. A roosting suitability survey conducted March 2025 identified the control building or a small dilapidated farm shed in the northwest of the Site as potential opportunity for roosts. If any bat roosting features are recorded within close proximity to the currently operational wind farm or the proposed Development, then there could be potential for the decommissioning and construction phases to impact bats through disturbance.

5.5.6. Fish

Lough Melvin SAC is designated for Atlantic salmon, which is included on Annex II of the Habitat Regulations and is a Northern Ireland priority species. Two of the watercourses within the developable area (in the south of the site) flow into Lough Melvin and it is therefore possible that this species could be present within the developable area and that it could be impacted by the proposed Development. Fish habitat surveys will be undertaken as part of the baseline surveys to inform the ES.

5.5.7. Protected Invertebrates

Lough Navar Scarps and Lakes ASSI is designated for rare molluscs that are included on the Northern Ireland priority species list (*Spermodea lamellata*, *Succinea oblonga*, *Vertigo antivertigo* and *V. lilljeborgi*), as well as white-clawed crayfish, which is protected at all times through inclusion on Schedule 5 of the Wildlife (Northern Ireland) Order. It is therefore possible that these species could be present within the developable area and that they could be impacted by the proposed Development. Surveys for molluscs and habitat suitability survey for white-clawed crayfish will be undertaken as part of the baseline surveys to inform the ES.

5.6. Scoped Out Effects

5.6.1. Designated Sites

It is proposed that all designated sites other than Lough Melvin SAC and Lough Navar Scarps and Lakes ASSI are scoped out of assessment. All of these other sites are over 1 km from the developable area and are designated for habitats. These Sites are not considered to be connected to the developable area due lack of hydrological connectivity and the distance from the Site boundary. All sites are therefore considered to be outside of the zone of influence (Zoi) for pollution related impacts and no route to impact will be present. Some of the ASSIs are also designated for animal species; however these species are not very mobile and/or do not have a possible connectivity route with the proposed Development. See Table 5.5 for site specific reasoning for scoping out ASSIs.

It is also proposed that LWSs and Nature Reserves are scoped out of assessment as none of the sites are hydrologically connected to the developable area and are outside of the zone of influence for pollution related impacts.

Table 5.5: ASSIs scoped out with reasoning

Site	Distance (km)	Designation features	Reason for scoping out
Lergan	1.11	<ul style="list-style-type: none"> • Wide range of grassland types • An abundance of orchids: lesser butterfly orchid, heath spotted orchid and common twayblade 	Outside of Zol for pollution.
The Cliffs of Magho	1.31	Woodland flora and fauna	Outside of Zol for pollution.
Glennasheever	1.61	Peatland flora (blanket bog) and associated fauna	Upstream of Proposed Development. Outside of Zol for pollution.
Lough Naman Bog and Lake	2.52	Intact blanket bog and oligotrophic lake and associated flora and fauna	Not hydrologically connected- in different river catchment. Outside of Zol for pollution.
Big Dog Scarps and Lakes	3.12	Range of upland habitats and associated flora and fauna, including white-clawed crayfish	Not hydrologically connected - in different river catchment: no connectivity for white-clawed crayfish. Outside of Zol for pollution.
Ground Bridge	3.77	Limestone cave with common cave spider (<i>Meta menardi</i>)	Not hydrologically connected- in different river catchment. Common cave spider habitat restricted to caves. Outside of Zol for pollution.
Lough Scolban	3.95	Mid-altitude lake supporting aquatic plants indicative of unenriched and unpolluted oligo-mesotrophic waterbodies	Not hydrologically connected - in different river catchment. Outside of Zol for pollution.
Glen East	4.02	Species rich wet grassland	Not hydrologically connected- in different river catchment. Outside of Zol for pollution.
Tullysradeega	4.28	<ul style="list-style-type: none"> • Lowland species rich grassland • Melancholy thistle 	Not hydrologically connected- in different river catchment. Outside of Zol for pollution.
Moneendogue	4.60	Species rich grassland	Outside of Zol for pollution.
Drumlisleen	4.60	Range of grassland types including species rich hay meadows	Outside of Zol for pollution.
Tower More	4.60	<ul style="list-style-type: none"> • Species rich wet grassland • Wet heath • Marsh fritillary butterfly 	Not hydrologically connected- in different river catchment.

Site	Distance (km)	Designation features	Reason for scoping out
			No habitat connectivity for marsh fritillary. Outside of ZoI for pollution.
Lough Aleater	4.82	Aquatic flora and fauna: mid-altitude lake surrounded by steep slopes.	Not hydrologically connected- in different river catchment. Outside of ZoI for pollution.

5.6.2. Irish Hare

Irish hare is protected from certain types of killing, through inclusion on Schedule 6 of the Wildlife (Northern Ireland) Order. There is suitable habitat within the developable area for Irish hare, and there were three records of Irish hare within 5 km of the developable area in the desk study. It is therefore assumed that the species will be present within the developable area. Decommissioning and construction phase embedded mitigation will include species protection plans and presence of an Environmental Clerk of Works (ECoW), which will minimise direct impacts on Irish hare during these development phases. The proposed Development will result in a small amount of habitat loss, with a large amount of suitable habitat remaining within the Site and the surrounding area. Therefore, it is unlikely that the proposed Development will have a significant displacement effect on Irish hare. Irish hare may be disturbed during the decommissioning or construction phase of the proposed Development but this is considered to be short term and temporary. It is therefore considered unlikely that Irish hare will be significantly impacted by the proposed Development and it is proposed that the species is scoped out of further assessment.

5.6.3. Common Lizard and Common Newt

Common lizard and common newt (*Lissotriton vulgaris*) are both fully protected at all times, through inclusion on Schedule 5 of the Wildlife (Northern Ireland) Order. It is likely that there is suitable habitat within the developable area for both species. There were two records of common lizard within 5 km of the developable area in the desk study and it is therefore assumed that common lizard is likely to be present at the proposed Development. Additionally, the Site is within 500 m of one lake (Carricknagower Lough), which may be suitable for common newt. It is therefore possible that common newt is present within the developable area.

The proposed Development will result in only a small amount of habitat loss, with a large amount of suitable habitat remaining within the developable area and the surrounding area. Therefore, it is unlikely that the proposed Development will have a significant displacement effect on common lizard or common newt. Both species may be disturbed during the decommissioning or construction phase of the proposed Development but this is considered to be short term and temporary. Both species are mobile species, meaning that individuals are likely to move out of the way of decommissioning and construction activities. However, embedded mitigation, including a species protection plan and presence of an ECoW, will ensure that no offence is committed under the Wildlife (Northern Ireland) Order. It is therefore considered unlikely that common lizard or common newt will be significantly impacted by the Proposed Development, and it is proposed that both species is scoped out of further assessment.

5.7. Operational Effects

There will be minimal activity during the operational period, and therefore there are unlikely to be any significant disturbance effects during this period. Furthermore, embedded mitigation will include an Operational Environmental Management Plan (OEMP) to include measures to protect habitats and species (such as pollution prevention and site speed limits). Therefore, operational effects for the

following features are considered unlikely to be significant and it is proposed that they are scoped out of further assessment:

- Designated sites;
- Habitats;
- Otter;
- Badger;
- Pine marten;
- Red squirrel;
- Fish;
- Protected molluscs; and
- White-clawed crayfish.

5.8. Cumulative Effects

An assessment of the cumulative effects on Important Ecological Features (IEFs) will be undertaken as part of the EIA. This assessment will include all EIA projects within the 10 km buffer of the developable area.

5.9. Transboundary Effects

Transboundary effects arise when impacts from a development are predicted to have effects upon the environment in a European Economic Area (EEA) state. As there is potential for the proposed Development to have an impact on Lough Melvin SAC, which lies on the border of Northern Ireland and the RoI, there is the potential for transboundary effects as a result of the Proposed Development. Transboundary effects will be assessed within the Shadow HRA for Lough Melvin SAC.

5.10. Proposed Methodology for Further Assessment

Further assessment of likely significant effects during the EIA will involve undertaking a further data search for protected species and a suite of field surveys to ascertain the baseline ecological status within the developable area. The EIA assessment will consider environmental effects arising from the proposed Development against both the comparative (current) baseline and the reparative baseline, as far as information is available.

5.10.1. Desktop Studies

As part of the EIA, a data request will be sent to CEDaR to search for species of known conservation status (i.e. species protected under the Wildlife (Northern Ireland) Order Schedule 5, 6, 6A and 7) within 5 km of the developable area and for further information regarding LWS within 2 km of the developable area.

Detailed NVC habitat surveys were undertaken in 2025, but Phase 1 habitat mapping was not undertaken. It is proposed that a desk-based approach is taken to assess the Phase 1 habitat type, whereby NVC and peat probing data are combined to assess the Phase 1 habitat type for each NVC polygon.

5.10.2. Field Surveys

The following field surveys are proposed to be undertaken to inform the comparative baseline for the ecological impact assessment:

- Extended Phase 1⁹ and NVC⁶ survey within the 250 m buffer of proposed infrastructure (access permitting) where this does not already exist from previous survey data, following standard guidance;
- Further active peat assessment in areas of proposed infrastructure, following NIEA guidance¹⁰;
- Protected mammal surveys within the developable area and a 250 m buffer (access permitting). Surveys will focus on otter¹¹, badger¹², pine marten¹³ and red squirrel¹³. Potential bat roosting features will also be recorded during this survey. The survey will follow standard guidance for relevant species;
- River habitat surveys to assess suitability for fish and crayfish;
- Protected mollusc survey; and
- Habitat survey of the potential future habitat management area to map existing baseline habitats. In areas of peat, surveys will also contain peat depth surveys including a high-level peatland condition assessment¹⁰ to verify suitability for potential peatland restoration.

5.10.3. Effects Assessment

The approach to the Ecological Impact Assessment (EclA) adopted within this assessment follows the Chartered Institute for Ecology and Environmental Management (CIEEM) guidelines¹⁴. It should be noted that these criteria are intended as a guide and are not definitive; professional judgement will also be applied in determining the value level for IEFs. IEFs will be determined based on these guidelines and with consideration of effects that are potentially significant as set out under Schedule 3 of the EIA Regulations. The guidelines set out the EclA process, through the following stages:

- Identification of IEFs through field survey and/or research;
- Determination of the importance of each identified IEF;
- Assessment of impacts affecting those IEFs and or resources, using a defined importance threshold with reference to ecological processes and functions as deemed appropriate;
- Determining the extent, magnitude, duration, timing and frequency of the impacts following the application of standard best practice working methods and embedded mitigation;
- Assessing the potential for impact reversibility;
- Determining the level of confidence in the above impact predictions;
- Identification of likely significant impacts in the absence of mitigation; and
- The identification of residual impacts following implementation of mitigation.

⁹ JNCC, 2010. *Handbook for Phase 1 habitat survey: a technique for environmental audit*. JNCC, Peterborough.

¹⁰ NIEA (2012) NIEA, *Natural Heritage, Development Management Team Advice Note Active Peatland and PPS18*.

¹¹ Chanin, P. (2003). *Monitoring the Otter Lutra lutra*. *Conserving Natura 2000 Rivers: Monitoring Series No. 10*. English Nature, Peterborough

¹² Harris, S. Cresswell, P & Jefferies, D. (1989) *Surveying Badgers*. The Mammal Society, London.

¹³ Cresswell, W. J., Birks, J. D. S., Dean, M., Pacheco, M., Trehella, W. J., Wells, D. & Wray, S. (eds) (2012) *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation*. Mammal Society, Southampton.

¹⁴ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland*

5.10.4. Bat Activity Assessment

A programme of extensive bat surveys and dog-assisted carcass searches was undertaken across the existing Callagheen Windfarm and the area of the proposed Development by WSP UK Ltd (WSP) in 2025 in line with NIEA guidance, including:

- A desk study whereby the NBN Atlas were contacted for records of bats relevant to the Site;
- A remote assessment of foraging, commuting and roosting suitability using aerial mapping;
- A programme of automated detector surveys, whereby detectors were deployed for a minimum of 30 nights of data collection per active bat season (Spring, Summer and Autumn) (as per SPR guidelines). Data was collected from ten static detectors deployed across the Site, covering existing and proposed turbine locations; and
- Carcass search surveys undertaken by Conservation Detection Dogs Northern Ireland (CDDNI) underneath the existing turbines.

The results of the desk study identified no records of bats recorded on NBA Atlas within the last five years within 5 km of the Site. The Site was assessed as having moderate suitability due to the presence of woodland to the east. The Site holds connectivity to further suitable habitat for foraging and commuting bats including Carricknagower Lough to the southwest. The Site was assessed as having no suitable habitat for roosting beyond the existing Callagheen Windfarm control room building and a small disused farm shed in the northwest of the Site.

The bat activity surveys identified at least seven species (or genera) of bats across the Site: soprano pipistrelle, common pipistrelle, Nathusius' pipistrelle, Pipistrellus species, noctule bat, Leisler's bat, brown long-eared bat and Myotis species.

The trends of bat activity were generally 'Low' for the geographical location of the Site for soprano pipistrelle, common pipistrelle and Leister's bats. Myotis species have a median activity level which were considered 'Low/Moderate'. Brown long-eared and Nathusius' pipistrelle bat median activity levels were generally considered typical for the region ("Moderate").

The collision risk of common pipistrelle was assessed as being 'Low' due to low median activity across the Site. Soprano pipistrelle also exhibited generally low activity, though a localised increase at one of the detectors indicates a 'Low/Medium' collision risk in areas close to the woodland edge. Leister's bats and Nathusius' pipistrelle median activity was assessed as 'Moderate', often increasing to 'Mod/High' or 'High' during periods of peak activity.

The assessment of recorded bat calls occurring prior to, or within, the typical emergence period identified it is possible that roosts for colonies or individual bats are within/proximal to the Site of soprano pipistrelle, common pipistrelle, Nathusius' pipistrelle, Leisler's bats, Myotis species and, brown long-eared bat. Peak calls recorded overlap S-SETs, indicating detectors may be located within proximity to a roost location, either within or outside the boundary of the Site.

5.11. Mitigation and Enhancement

5.11.1. Embedded Mitigation

This section outlines any embedded mitigation/good practice measures assumed to be in place prior to undertaking the assessment.

To ensure compliance with legislation, and to follow good practice guidance and consultation recommendations, a number of standard measures will be implemented should the application be consented. The standard measures which are relevant to avoiding and reducing impacts on IEFs include:

- A maximum of eight months prior to commencement of works, pre-construction ecology walkover surveys will be carried out, including surveys for potential bat roosts, badger setts, and squirrel dreys, and a check of all riparian habitat for signs of otter. This will enable any refinements to be made if necessary, to mitigation, micrositing and/or the construction programme to take account of any updated distribution or presence of protected species, with a suitable mitigation plan adopted on a case-by-case basis;
- No decommissioning shall take place until a Decommissioning Management and Restoration Plan (DMRP), incorporating a Decommissioning Method Statement (DMS), has been submitted to and approved in writing by the local planning authority. Additionally, no construction development shall take place (including demolition, ground works, vegetation clearance) until a Construction Environmental Management Plan (CEMP), incorporating a Construction Method Statement (CMS), has been submitted to and approved in writing by the local planning authority. The DEMP/CEMP shall include the following:
 - Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during decommissioning and construction (may be provided as a set of method statements), including a Pollution Prevention Plan outlining measures to control pollution and a Drainage Management Plan outlining measures for management of surface and groundwater;
 - The location and timing of sensitive works to avoid harm to ecological features;
 - The times during decommissioning and construction when specialist ecologists need to be present on site to oversee works;
 - Species Protection Plans (SPPs) outlining specific measures to avoid and reduce impacts on protected species;
 - Responsible persons and lines of communication; and
 - The role and responsibilities on site of an ECoW or similarly competent person.
- No development shall commence until the role and responsibilities and operations to be overseen by an appropriately competent ECoW have been submitted to and approved in writing by the local planning authority. The appointed person shall undertake all activities, and works shall be carried out, in accordance with the approved details. The ECoW will monitor and advise on potential effects on ecological features during decommissioning and construction in order that impacts are avoided or minimised through best practice. This includes maintaining water quality and minimising the potential for disturbance or risk of injury/death for protected species which may be using the site.

The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the local planning authority.

5.11.2. Habitat Restoration and Enhancement

Infrastructure for the currently operational Callagheen Windfarm that will not be required for the proposed Development will be decommissioned and the habitat in that area restored.

Habitat that is lost as a result of the construction of the proposed Development will be compensated for through creation and/or restoration of appropriate habitats. If any peatland habitats are lost as part of

the proposed Development, then this will be compensated for through peatland restoration. Additionally, a scheme of biodiversity enhancements will be proposed as part of the proposed Development. The compensation and enhancement strategy will be devised based on the results of the ecological surveys proposed above. However, the following measures may be appropriate within the Site boundary:

- Peatland restoration;
- Woodland and/or scrub creation;
- Grassland management; and
- Bird nest box installation.

5.12. Summary

In order to ensure that the EIA is compliant with the EIA Directive, and to ensure that the EclA is focussed on potentially significant effects only, we propose that only those features and impacts identified in Table 5.6, as being scoped in are carried forward for EclA within the relevant ES chapter.

Table 5.6 – Ecology Scoping Assessment Summary

Potential Effect	proposed Development Phase	Rationale	Further Assessment
Scoped In			
Lough Melvin SAC	Decommissioning, Construction	Hydrological connectivity with currently operational wind farm and proposed Development	HRA
Lough Navar Scarps and Lakes ASSI	Decommissioning, Construction	Hydrological connectivity with currently operational wind farm and proposed Development	EclA
Habitats	Decommissioning, Construction	Habitat loss, potential for pollution impacts, potential for impact on peatland	EclA
Otter	Decommissioning, Construction	Potential for disturbance to otter resting places if recorded during surveys	EclA
Badger	Decommissioning, Construction	Potential for disturbance to badger setts if recorded during surveys	EclA
Red squirrel	Decommissioning, Construction	Potential for disturbance to red squirrel dreys if recorded during surveys	EclA
Pine marten	Decommissioning, Construction	Potential for disturbance to pine marten dens if recorded during surveys	EclA
Bats	Decommissioning, Construction, Operation	Potential for disturbance to bat roosts if recorded during surveys. Potential for bat collisions during the operational phase	EclA
Fish	Decommissioning, Construction	Potential for pollution impacts	EclA
Protected molluscs	Decommissioning, Construction	Potential for loss of suitable habitat	EclA

Potential Effect	proposed Development Phase	Rationale	Further Assessment
White-clawed crayfish	Decommissioning, Construction	Potential for disturbance to habitat	EclA
Scoped Out			
Other SACs and ASSIs	Decommissioning, Construction, Operation	No hydrological connectivity and no connectivity for animal species features and therefore no route to impact.	N/A
LWS and Nature Reserves	Decommissioning, Construction, Operation	No hydrological connectivity and therefore no route to impact.	N/A
Habitat Loss	Operation	Limited disturbance due to minimal on-site activity during operation.	N/A
Irish hare	Decommissioning, Construction, Operation	The population size is small and there is sufficient suitable habitat in the surrounding area, meaning that there is unlikely to be a significant impact.	N/A
Common lizard and common newt	Decommissioning, Construction, Operation	Any potential decommissioning and construction impacts will be reduced to non-significant through implementation of embedded mitigation. Habitat loss will be small scale and there is sufficient suitable habitat in the surrounding area.	N/A
Protected species (excluding bats)	Operation	Limited disturbance due to minimal on-site activity during operation.	N/A

5.13. Questions for Consultees

- Do consultees agree that the survey programme proposed for the proposed Development is appropriate and proportionate to the potential risks posed to ecological features by the proposed Development?
- Do consultees agree that it is not necessary to contact the National Biodiversity Data Centre (Republic of Ireland environmental data centre) to obtain records they hold for parts of the 5 km buffer around the developable area that fall under the RoI?
- Do consultees agree that the assessment methodology proposed for the proposed Development is appropriate and proportionate to the potential risks posed to ecological features by the proposed Development?
- **Table 5.6** notes the receptors and potential impact proposed to be included within the EclA. Do consultees agree that this sufficiently covers the potential impacts on features from the proposed Development and what is proposed to be scoped out?

6. Ornithology

6.1. Introduction

This chapter outlines the potential effects of the proposed Development on ornithological receptors and sets out the methodology proposed to assess the likely significant effects during the EIA.

6.2. Study Area

The ornithology Study Area comprises the Site and a 20 km buffer within which designated sites have been reviewed to identify potential connectivity.

Ornithology field surveys undertaken have covered the Site and a surrounding 2 km survey area, consistent with NatureScot (2025) guidance. A survey area covering the Site and a 500 m buffer was used for Vantage Point (VP) Surveys and Moorland Breeding Bird Surveys (MBBS) and an extended 2km buffer for Breeding and Roosting Raptor Surveys reflecting the potential for raptors to capture foraging activity, territories and roosts beyond the Site boundary. Site survey areas are as shown in **Figure 6.1**.

Non-breeding season surveys undertaken in 2024/25 were based upon a slightly different site boundary. Following the conclusion of non-breeding surveys and prior to the commencement of 2025 breeding season surveys, the boundary was updated to reflect the current developable area, as shown in **Figure 6.1**, with all survey areas updated accordingly.

6.3. Baseline and Key Sensitivities

Aligned to the baseline scenarios presented in Chapter 3, assessment of ornithological effects will consider both a current comparative and future reparative baseline. This also aligns with NatureScot (2018) guidance on the scope of EIA applications for repowered onshore wind farms - the baseline for assessing the full effects of a repowering proposal is expected to consider the reparative (restored) state of the site, following removal of turbines. A decommissioning and restoration plan, typically secured through conditions attached to the original consent, is therefore important in establishing this baseline.

Although a repowering proposal may retain certain existing tracks or infrastructure, and the Site may not ultimately be restored exactly as originally envisaged, the assessment should nevertheless be undertaken against a baseline that assumes full restoration. Notwithstanding this proposed approach, the existing operation of the current site as a wind farm remains a material consideration, and it is therefore also useful to compare the effects of the proposed development with those of the existing scheme.

The assessment should also take account of, or confirm the absence of, any changes in the wider environmental context since the original development, such as adjacent development or changes in the distribution of sensitive habitats and species.

Accordingly, both a Comparative Baseline, considering impacts in relation to the existing operational wind farm, and a Reparative Baseline (as proposed in NatureScot (2018) guidance) are presented below.

As the surveys used to inform the original ES for Callagheen Windfarm were undertaken in 2001, and ecological conditions within the wider environmental context will have changed since that time, including changes in species distribution and sensitive habitats, updated baseline information has been collected to support the impact assessment.

6.3.1. Designated Sites

DAERA Protected areas and Natural Environment Map Viewer¹⁵ was used to search for statutory sites designated for ornithological features within the following search areas from the proposed Development site boundary:

- 20 km for statutory sites designated for wintering geese; and
- 10 km for statutory sites designated for other ornithological features.

During the desk-based study five statutory sites designated for their ornithological interest were identified. Details of these statutory sites are provided in **Table 6.1**.

Table 6.1: Nationally and Internationally Important Designated Sites Within 20 km of the Site

Site Name	Designation	Qualifying features	Distance from Site Boundary (at closest point)
Pettigoe Plateau (Fermanagh)	Special Protection Area (SPA)/Ramsar/Areas of Special Scientific Interest (ASSI)	<ul style="list-style-type: none"> • Golden plover (breeding) 	5.8 km north
Donegal Bay	SPA	<ul style="list-style-type: none"> • Great northern diver (non-breeding) • Light bellied brent goose (non-breeding) • Common scoter (non-breeding) • Sanderling (non-breeding) • Wetland and waterbirds 	12.4 km north-west
Sligo/Leitrim Uplands	SPA	<ul style="list-style-type: none"> • Chough (breeding) 	13.7 km west
Pettigoe Plateau (Donegal)	SPA/Ramsar	<ul style="list-style-type: none"> • Greenland white-fronted goose (non-breeding) 	17.6 km north
Lough Derg (Donegal)	SPA	<ul style="list-style-type: none"> • Lesser black-backed gull (breeding) • Herring gull (breeding) 	18.2 km north-east
<p>*Species with potential connectivity to the Site are in bold based on guidance relating to species core foraging ranges and professional judgement (NatureScot, 2016; Woodward <i>et al</i>, 2019).</p>			

¹⁵ <https://www.daera-ni.gov.uk/topics/protected-areas>

6.3.2. Comparative Baseline

The Comparative Baseline conditions are set out below. These are the conditions at the current operational site which have been determined through baseline ornithological surveys undertaken in line with NatureScot (2017) guidance to inform impact assessment of greenfield onshore wind developments.

6.4. Field Survey Methods

6.4.1. Vantage Point Surveys

Vantage Point (VP) Surveys are currently being undertaken from two Vantage Point locations to determine flight activity of 'target species' within the Site and a 500 m buffer in accordance with guidance (NatureScot, 2024). Surveys began December 2024 and are due to conclude in August 2026. The late commencement of 2024/25 non-breeding season is discussed further within **Limitations** section.

The VP survey area is provided within Figure 6.1 with viewsheds of each vantage point used within Figure 6.2.

For the initial 2024/25 non-breeding season three VPs were used to ensure coverage of the original site, plus 500 m, at the commencement of surveys. This VP was dropped from the beginning of the 2025 breeding season.

Target species recorded during surveys included the following:

- All wild swan, goose and duck species (except Canada goose (*Branta canadensis*) and mallard (*Anas platyrhynchos*));
- Red grouse (*Lagopus scotica*);
- All Schedule 1¹⁶ and Annex 1¹⁷ raptor and owl species (excluding sparrowhawk (*Accipiter nisus*) and buzzard (*Buteo buteo*)); and
- All wader species.

The flight lines of all target species observed during the VP Surveys were recorded on large scale maps in the field and categorised into the following height bands:

1. <10 m;
2. 10-20 m;
3. 21-200 m; and
4. >200 m.

A total of 72 hours of surveys per VP will be completed each year, with survey effort split equally between breeding (April to August) and non-breeding seasons (September to March).

6.4.2. Breeding Raptor Surveys

Breeding Raptor Surveys of the Site and surrounding 2 km buffer are in progress following survey methods described in Hardey *et al.* (2013). In accordance with guidance (NatureScot, 2024), monthly survey visits

¹⁶ The Wildlife (Northern Ireland) Order 1985

¹⁷ Directive 2009/147/EC on the conservation of wild birds (codified version of 79/409/EEC).

were conducted between mid-March and early August, for 2025 and are due to be undertaken for 2026. Target species were defined as Schedule 1 or Annex I raptor species, with other breeding raptors recorded as secondary species.

6.4.3. Moorland Breeding Bird Surveys

Moorland Breeding Bird Surveys (MBBS) of the Site and a surrounding 500 m buffer were undertaken between April and late July during 2025 and are due to be undertaken during 2026 to record breeding waders and other non-passerine species of conservation concern.

In line with NS guidance (NatureScot, 2025), the surveys followed an adapted Brown and Shepherd (1993) method (designed to census upland breeding waders), with four survey visits completed during each breeding season.

The MBBS survey area will be extended to 800m following the consultation response from NIEA-NED.

6.4.4. Winter Walkover Surveys

Winter Walkover Surveys were undertaken monthly during the 2024/25 (between December 2024 and March 2025) and 2025/26 non-breeding seasons (between September 2025 and March 2026) to determine the wintering bird community present within the Site and a 500 m buffer, following the 'look-see' methods outlined in Bibby *et al.* (2000). Target species consisted of any wader, raptor or wildfowl species of conservation concern present, with any other notable species recorded incidentally. The late commencement of 2024/25 non-breeding season is discussed further within **Section 6.4.6**.

6.4.5. Hen Harrier Roost Surveys

Hen Harrier Roost Surveys were undertaken between December 2024 and March 2025 and October 2025 and March 2026 to determine the presence of any roosts within the Site and a surrounding 2 km buffer according to NatureScot guidance (2025). All surveys were undertaken following the methods outlined in Hardey *et al.* (2013), commencing 90 minutes prior to sunset and terminating 30 minutes after sunset, or 30 minutes prior to sunrise and 90 minutes after. All hen harrier activity was recorded, including mapping of flight lines, to identify the location of any roosts. The late commencement of 2024/25 non-breeding season is discussed further within **Section 6.4.6**.

6.4.6. Limitations

It is noted that surveys commenced later than is recommended within the NatureScot guidance. APEM/the Applicant have been engaging in consultation with NIED-NED) to ensure they are in agreement that the data collected is representative of the Site and considered robust for assessment. This is further expanded within **Section 6.6**.

6.5. Field Survey Results

Please note that the ornithological surveys are ongoing, and data are still undergoing analysis. Preliminary results have been summarised for the purposes of this Scoping Report, and full analysis will be presented within the ES.

6.5.1. Vantage Point Surveys

VP Surveys have thus far been undertaken during the 2024/25 non-breeding season, 2025 breeding season and 2025/26 non-breeding season. 2026 breeding season VP surveys are due to begin in April 2026. A summary of species recorded during surveys to date is presented in **Table 6.2**.

Table 6.2. Summary of Target Species Recorded during VP Surveys to Date

Species	Scientific Name	Conservation Status*	Summary of Results
Red grouse	<i>Lagopus lagopus scotica</i>	Red (IE), Amber (UK); NI Priority	2: 24/45 NB Recorded infrequently
Golden plover	<i>Pluvialis apricaria</i>	Red (IE), Green (UK); NI Priority; Ann1	Red grouse was recorded infrequently during the non-breeding season with a single bird recorded during each flight
Curlew	<i>Numenius arquata</i>	Red (UK, IE); NI Priority	Curlew was recorded on a single occasion during the breeding season with a single bird
Snipe	<i>Gallinago gallinago</i>	Red (IE), Amber (UK)	Snipe was recorded infrequently with records during both the non-breeding and breeding seasons. All records were of a single bird
Lesser black-backed gull	<i>Larus fuscus</i>	Amber (UK*, IE)	Lesser black-backed gull was recorded regularly during the breeding season with flights of up to 5 individuals
Cormorant	<i>Phalacrocorax carbo</i>	Amber (IE), Green (UK)	Cormorant was recorded infrequently with records during the breeding season of birds commuting over the Site.
Osprey	<i>Pandion haliaetus</i>	Amber (UK); Sch1; Ann1	Osprey was recorded on a single occasion during the breeding season. This was likely a passage individual.
Hen harrier	<i>Circus cyaneus</i>	Amber (UK), Green (IE); Sch1	Hen harrier was recorded during both breeding and non-breeding season. All

Species	Scientific Name	Conservation Status*	Summary of Results
			flights were of a single bird
Kestrel	<i>Falco tinnunculus</i>	<i>Red (UK), Amber (IE); Sch1; NI Priority; Ann1</i>	2: 24/25 B 5: 25 B 2: 25/26 NB Kestrel was recorded during both breeding and non-breeding season with all records of a single bird
Merlin	<i>Falco columbarius</i>	<i>Red (IE), Amber (UK); Sch1</i>	Merlin was recorded infrequently with records of single birds during the non-breeding season.

Table note: Species names and order follow the List of Ireland's Birds maintained by BirdWatch Ireland.

Ann1 = listed on Annex 1 of the Bird's Directive; Sch1; = listed on Schedule 1 of the Wildlife Order (1985); (UK) BoCC5 Red List and (IE) BoCCI4 Red list: -Green= Green-listed species; Amber = Amber-listed species; Red = Red-listed species. NI Priority = Northern Ireland Priority Species

6.5.2. Breeding Raptor Surveys

During 2025 Breeding Raptor Surveys four target species were recorded; kestrel, hen harrier, osprey and peregrine. However, none of these species were recorded exhibiting any indicative breeding behaviour and therefore were determined not to be breeding within the Breeding Raptor Survey Area. These species are likely to forage within and commute through the Site and Breeding Raptor Survey Area.

Juvenile kestrels recorded in August indicated that the species likely breeds beyond the Breeding Raptor Survey Area. A hen harrier pair was recorded in April but displayed no indicative breeding behaviour. The pair were not observed again, indicating that the pair did not breed within the Site and likely breeds in the wider hinterland. 2026 Breeding Raptor Surveys are scheduled to commence in April 2026 and will be undertaken until July 2026.

6.5.3. Moorland Breeding Bird Surveys

During 2025 MBBS, overall levels of target species activity within the MBBS Survey Area were low. Breeding evidence of snipe was identified within the survey area with at least two pairs identified within suitable breeding habitat. A single red grouse territory was also identified with a pair observed within the survey area. MBBS are due to be undertaken April to July 2026 ensuring that annual variability is captured and that the breeding bird baseline is sufficiently robust to inform the EIA.

6.5.4. Winter Walkover Surveys

During the 2024/25 non-breeding season three target species were recorded within the Winter Walkover Survey Area. A single mallard was recorded on a single occasion commuting across the Site, while an individual woodcock was recorded commuting on a single occasion. Snipe was recorded on 25 occasions with 29 individuals observed. Records were spread across the Winter Walkover Survey Area with a higher density of snipe in the south.

During the 2025/26 non-breeding season snipe was the most commonly recorded target species, records of other target species was low, with golden plover noted.

6.5.5. Hen Harrier Roost Surveys

During 2024/25 Hen Harrier Roost Surveys, no hen harrier flights or roosts were recorded within the Hen Harrier Roost Survey Area. Two hen harrier roost sites were identified incidentally further than 3 km from the site, to the south and south-east respectively. Both were used regularly by individual birds.

During 2025/26 Hen Harrier Roost Surveys, a single hen harrier roost was identified within the Hen Harrier Roost Survey Area, outwith the Site. The roost site was occupied by a single bird during one survey. This is considered unlikely to be a key roost site due to its low occupancy.

6.5.6. Incidental Records

During 2024/25 Hen Harrier Roost Surveys a peregrine roost site was also identified during surveys. This was located within the Hen Harrier Roost Survey Area, on a pylon approximately 1.8km north-east of the Site boundary. The following notable species were also recorded incidentally during Hen Harrier Roost Surveys: whooper swan, red grouse, golden plover, woodcock, snipe, sparrowhawk and kestrel. The majority of records were outwith the Site boundary, with birds commuting other than whooper swan which were foraging.

6.5.7. Reparative Baseline

The Reparative Baseline represents the likely condition of the Site following decommissioning of the existing Callagheen Windfarm and restoration of the land in accordance with the original restoration commitments, thereby providing the baseline against which the effects of the repowered development would be assessed.

This approach is consistent with NatureScot (2018) guidance for repowering, which states that the assessment should consider the repowered scheme as a whole and that existing baseline information from the operational wind farm may not, in isolation, provide an adequate basis for assessment of the repowered proposal.

The Callagheen Windfarm restoration plan states that access tracks would be restored to their pre-construction condition, unless otherwise required by the landowner, and that turbine foundations would be removed to 500 mm below ground level and covered with topsoil. There is no detailed information on restoration of habitat within the site, and therefore it is assumed that the current habitat (open moorland) would be consistent with the Reparative Baseline.

As it is not possible to collect quantitative data which is truly representative of the Reparative Baseline, assumptions would need to be made about the flight activity and bird distribution at the restored site alongside survey data collected from the operational site (outlined previously) and desk-based information to inform an impact assessment.

6.5.8. Key Ornithological Receptors

For the purposes of the EIA, ornithological receptors will be scoped-in to the assessment based on their importance. Importance will be defined within the ES and will consider receptors importance in the context of a suitable geographic scale as outlined in CIEEM (2018) guidance. Importance will consider legal protection and conservation status in the context of the species abundance and utilisation of the Study Area recorded during baseline surveys.

This includes Schedule 1 species taken from The Wildlife (Northern Ireland) Order 1985¹⁸, any species listed under Annex I of Directive 2009/147/EC (the Birds Directive), species assigned Amber or Red conservation status in BoCC5 (Stanbury et al., 2021) and BoCCI4 (Gilbert *et al.*, 2021), and any species with potential functional connectivity to nearby European sites or other designated areas. These categories collectively ensure that the assessment captures species of high conservation concern, species sensitive to habitat change or disturbance, and species for which the Proposed Development may form part of a wider ecological network or ecological corridor.

6.6. Consultation

Upon completion of the 2024/25 non-breeding season surveys, a consultation letter was received by NIEA-NED on 03/06/2025 to request approval that the timing and methods of surveys completed were considered suitably robust and appropriate to inform the impact assessment. Secondly, the survey limitations (as noted in Section 6.3.3) were outlined, with a request for confirmation that the data collected during the 2024/45 non-breeding season will be accepted as a complete survey season, despite surveys commencing in December rather than the typical October start.

This request was based on the ornithological data gathered during the non-breeding season, which indicated limited activity in and around the Site by key species, and that the Site did not support large numbers of non-breeding birds. It was stated that to ensure robustness and coverage of the full non-breeding season, APEM and SPR intended to collect data across an additional non-breeding season data between October 2025 to March 2026.

Natural Environment Division's (NIEA-NED) responses received on 12/11/2025 were as follows:

- NIEA-NED acknowledged that they are content with survey work proposed;
- Suggestion that MBBS survey area should be extended 800m for curlew;
- NIEA-NED stated that due to the late start of non-breeding surveys, the October-November migration period isn't represented in the data set and they are unable to confirm whether they are content. Following the conclusion of the second non-breeding season surveys and receipt of survey data, NIEA-NED would make a decision on the validity of the data from the first non-breeding season.
- NIEA-NED stated that the final report should:
 - Calculate collision risk using NatureScot (2024) standard methods and appropriate avoidance rates; use the NatureScot CRM spreadsheet and provide raw data.
 - Map all bird records and note nests/territorial pairs (especially raptors and waders); provide raptor nest grid references confidentially to NIEA-NED.
 - Assess cumulative impacts on bird populations with consented and planned windfarms within 15 km.

¹⁸ <https://www.legislation.gov.uk/nisi/1985/171/contents>

In addition to this, APEM and SPR should:

- Share all survey data and results with the relevant recording database.
- Provide previous reports for the existing Callagheen Windfarm (if available) to support NIEA-NED's assessment.

In response to the consultation feedback, the MBBS area for the 2026 breeding season has been extended to include an 800 m buffer for Curlew. A further consultation letter has been issued in April following completion of the 2025/26 non-breeding season surveys to enable NIEA-NED to confirm whether the non-breeding survey coverage is adequate for assessment, and a response is awaited.

The additional requirements set out by NIEA-NED in relation to the ornithological impact assessment have been noted and will be addressed within the Ornithology Chapter of the ES and supporting appendices.

6.7. Potential Effects Assessment

6.7.1. Scoped In Effects and Receptors

Ornithological receptors scoped into the assessment will be determined based on pathways for impacts, relevant guidance (NatureScot, 2025), baseline data recorded during surveys and professional judgement. Considering the current baseline conditions, it is proposed that the following effects will be scoped in for assessment:

- Potential impacts to all IOFs during the breeding and non-breeding seasons due to habitat loss, disturbance and displacement effects;
- Potential collision risk effects on any IOF recorded during VP Surveys where there is sufficient flight activity for potential significant effects; and
- Potential barrier effects on an any IOF where the Proposed Development could act as a barrier of movement.

IOFs will be determined following the conclusion of all baseline surveys but are likely to include those included within **Section 6.4**.

6.7.2. Scoped Out Effects and Receptors

Considering the current baseline conditions and distance from the Site boundary, it is proposed that impacts on qualifying ornithological interests of the following statutory sites will be scoped out of assessment:

- Pettigo Plateau (Fermanagh) SPA, Ramsar and ASSI;
- Donegal Bay SPA;
- Sligo/Leitrim Uplands SPA; and
- Pettigo Plateau (Donegal) SPA and Ramsar.

Pettigo Plateau (Fermanagh) SPA, Ramsar and ASSI, designated for breeding golden plover, is scoped out of the assessment due to the proposed Development being outwith of the species core foraging range (NatureScot, 2016) and therefore there is no potential connectivity between the designated site and the proposed Development.

There is considered no connectivity between the proposed Development and Donegal Bay SPA, this is due to the proposed Development being beyond the core foraging range of each feature, or, in the case of

common scoter and great northern diver, both are marine species. No records of any designated feature has been recorded during surveys.

There is considered no connectivity between the proposed Development and Sligo/Leitrim Uplands SPA, designated for chough, due to the distance from the proposed Development and no choughs being recorded during baseline surveys.

Pettigo Plateau (Donegal) SPA and Ramsar, designated for Greenland white-fronted goose, is scoped out of the assessment due to the proposed Development being outwith the core foraging range, 5-8km, of Greenland white-fronted goose and therefore there is considered no connectivity between the proposed Development and the statutory site, along with no records of the designated feature during baseline surveys.

Moreover, all statutory sites designated for ornithological features beyond 20km of the proposed Development site boundary will also be scoped out as it is considered unlikely that there will be any connectivity between these sites and the proposed Development.

All passerine species will be scoped out of the assessment, as stated within NatureScot (2017) guidance as it is considered they are not significantly impacted by wind farms.

Decommissioning will be scoped out for assessment. Although it should be noted that impacts during this phase are considered to be similar to those during construction.

6.7.3. Transboundary Effects

Given the proximity of the proposed Development to the RoI border, impacts on designated sites within RoI will be considered, however based on results to date and connectivity guidance, it is considered that there is negligible potential for transboundary effects. The following sites will be considered:

- Internationally important – SPAs and Ramsar sites; and,
- Nationally important – NHAs.

6.8. Proposed Methodology for Further Assessment

6.8.1. Desktop Studies

A comprehensive desktop study will be undertaken to collate and evaluate all relevant ornithological information relevant to the proposed Development. This review will include an examination of statutory designations, published literature, national and regional datasets, and applicable legislation and guidance. The purpose of the desktop study will be to establish the ornithological context of the Site, identify species and designated sites with potential connectivity, and inform the impact assessment.

The desktop study will draw upon, but not be limited to, the following sources:

- Publicly available ornithological documentation for nearby wind farm developments and other relevant infrastructure projects.
- NatureScot guidance on Repowering Onshore Wind Farms: Bird Survey Requirements (SNH, 2014)
- NatureScot guidance on Assessing the Impact of Repowered Wind Farms on Nature (Consultation Draft) (SNH, 2018)
- NatureScot pre-application guidance for onshore wind farms (NatureScot, 2024b).

- NatureScot Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms (NatureScot/SNH, 2017; updated 2025 where applicable).
- NatureScot guidance on assessing the significance of impacts from onshore wind farms out with designated sites (SNH, 2018a).
- NatureScot guidance on assessing connectivity with Special Protection Areas (SNH, 2016).
- DAERA Protected areas and Natural Environment Map Viewer¹⁹
- NPWS Protected Sites mapping and relevant conservation objectives.
- BirdWatch Ireland's Bird Sensitivity Mapping to Wind Energy.
- National Biodiversity Data Centre (NBDC) records for the Site and surrounding 2 km buffer.
- Any additional datasets or records received from NIEA or other consultees during the scoping process.

This information will be used to identify key ornithological receptors, understand potential impact pathways, and ensure that the ES is informed by the most up-to-date and relevant evidence base.

6.8.2. Effects Assessment

The ornithological impact assessment will be conducted in accordance with the current guidance produced by the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). The ornithology baseline and results of the ornithological impact assessment will be detailed in the Ornithology Chapter of the EIA. As recommended by CIEEM, the EIA will collate baseline information. It is proposed that the baseline conditions for the assessment are based upon the survey data collected at the operational site and supplemented by qualitative data derived from a reparative baseline scenario. For the assessment, the following approach is proposed:

- The baseline habitat conditions when considering habitat loss effects will be the habitats recorded during habitat surveys, considering potential restoration of infrastructure as detailed in the restoration plan.
- Flight activity data collected during surveys at the existing site will be used to inform Collision Risk Modelling. Flight activity within the existing site is considered more representative of conditions at a future repowered site, as they reflect existing macro-avoidance behaviour and therefore provide an appropriate basis for the assessment of collision risk effects.
- Disturbance and displacement effects will be informed by survey data collected at the operational site, whilst also considering professional judgement and desk-based sources to characterise the likely community of species associated with the reparative site scenario and allow for assessment of effects in comparison to a restored site. For example, when undertaking an assessment of displacement, it would be considered whether the number of breeding pairs recorded during baseline surveys may be lower than on a restored site due to displacement effects of operational turbines.

In addition, survey data has been collected from within the Site, beyond the developable area, which will provide additional context and allow for a comparison of bird activity within and beyond the existing site. Historical ornithological data will also be reviewed where available, although it is recognised that bird populations have changed substantially since the existing wind farm was constructed.

¹⁹ <https://www.daera-ni.gov.uk/topics/protected-areas>

The EIA will additionally include the following information:

- Identification of Important Ornithological Features;
- Identification and characterisation of potential ornithological impacts, including collision, disturbance and displacement from the construction and operational phases of the proposed Development;
- A comprehensive assessment of the potential impacts during the different phases of the proposed Development on important ornithological features, and considering any embedded mitigation;
- Incorporation of mitigation measures to reduce identified impacts;
- Assessment of significance of residual impacts following mitigation;
- Identification of suitable compensation to offset any significant residual impacts; and
- Identification of further opportunities for ornithological enhancement.

Potential cumulative impacts on ornithological features arising from existing or proposed developments will also be considered as part of the EIA. In line with NS guidance (NatureScot, 2018), cumulative impacts will be assessed within 15 km, as requested by NED during consultation.

The Ornithology Chapter of the ES will be additionally supported by appendices containing complete details of the surveys, analysis methods and results. Any data related to sensitive ornithological features will be included in a separate Confidential Annex – which will not be available to the public.

6.8.3. Collision Risk Modelling (CRM) methods

CRM will be completed as part of the impact assessment, based on flight activity data collected during the two years of baseline surveys. The Band model (Band et al., 2024) will be used in accordance with NatureScot guidance. CRM will be undertaken for all target species with sufficient flight activity for potential significant collision effects. Full details of the CRM will be provided in the ES, with the results of the modelling used to inform the assessment of collision risk impacts on target species.

6.8.4. Assessment of Significance

In accordance with the latest CIEEM guidance, the approach used for the EIA will consider the importance and sensitivity of an ornithological feature and the characteristics and severity of the impact and apply professional judgement to conclude whether the integrity of the feature will be affected. In line with CIEEM guidance, rather than implementing a matrix approach to determine significance, the assessment will consider the importance and sensitivity of receptors, characteristics and magnitude of potential impacts, and applying professional judgement to determine whether the integrity of the receptor would be affected.

For the purpose of the EIA, an impact that negatively affects the integrity of an ornithological feature will be considered to be significant. The significance of impacts will be assessed in an appropriate geographic context in line with CIEEM (2018) guidance.

6.9. Summary

A summary of the scoping assessment findings is provided in **Table 6.3**.

Table 6.3 – Ornithology Scoping Assessment Summary

Elements Scoped into the Assessment	Elements Scoped out of the Assessment
Potential impacts to all IOFs for habitat loss, disturbance and displacement during the construction and operational phases	<i>Pettigoe Plateau</i> (Fermanagh) SPA, Ramsar, ASSI
Potential collision risk to any IOF during the operational phase	Donegal Bay SPA
Potential barrier effects to any IOF during the operational phase	Sligo/Leitrim Uplands SPA
Schedule 1 listed species	<i>Pettigoe Plateau</i> (Donegal) SPA and Ramsar
Annex I listed species	All passerine species
Any species listed as amber or red on BoCCI4 or BoCC5	BoCCI4 and BoCC5 green-listed species
Transboundary effects	

6.10. Questions for Consultees

- Do you agree with the proposed study areas?
- Do you consider the approach to defining the baseline appropriate, and that the survey data collected at the Site is suitable alongside desk-based information to inform the impact assessment?
- Do you consider the data sources identified for informing the EIA baseline characterisation to be appropriate?
- Do you consider the proposed surveys for informing the EIA baseline characterisation to be appropriate?
- Are there any receptors, assets, or resources not currently identified that you believe should be included in the EIA?
- Do you agree with the receptors and matters proposed to be scoped in and out of the EIA?
- Is there agreement upon the proposed methods for assessment?

7. Geology, Hydrology and Hydrogeology

7.1. Introduction

This chapter considers the potential effects of the proposed Development with respect to hydrology (including flood risk), hydrogeology, geology and peat and sets out the methodology to be undertaken to further assess the likely significant effects during the EIA. This chapter considers the developable area of the Site only. The future potential Habitat Management Area in the southern part of the Site will not contain any proposed Development infrastructure and therefore its assessment is not required.

7.2. Baseline and Key Sensitivities

7.2.1. Existing Land-use and Topography

The developable area is located within an open upland environment, described as moorland used historically for infrequent peat harvesting and sheep grazing. Existing land use includes the infrastructure associated with operation of the Callagheen Windfarm and an area of forestry immediately to the east of the site.

With reference to Ordnance Survey (OS) Northern Ireland mapping (OSNI)²⁰, elevations across the developable area range from approximately 180 m to 270 m Above Ordnance Datum (AOD), with higher ground located to the east of the developable area, rising to around 305 m AOD approximately 1 km beyond the Site boundary. Within the developable area, elevations are typically highest across the northern part. The developable area is characterised by typically gently undulating terrain for the most part, comprising broad slopes and shallow valleys that reflect local drainage patterns. Topography is steeper to the north of the developable area, where it slopes northwards and there is some steeper ground also in the northern part of the developable area where it slopes both northwards and southwards towards a mapped watercourse. The developable area broadly occupies a local ridge or watershed, with ground falling towards both the north, west and south. The mapped watercourses within and surrounding the developable area reflect this topography, following the natural gradients of the land.

7.2.2. Soil and Peat

With reference to the General Soil Map²¹ the developable area is mapped as predominantly peaty gleys with associated blanket peat (Teagasc soil unit 2). However, given the reconnaissance scale of the mapping, this classification is considered indicative only. Adjacent areas are mapped as gley soils (Teagasc soil unit 27), which are predominantly mineral soils with limited peat influence, in contrast to the peaty gley and blanket peat associations mapped within the developable area. Site-specific investigations (as discussed below) confirm that peat is widely distributed across the developable area.

The Northern Ireland Peatland map layer²² displays information from the Northern Ireland Peatland Survey (1988) which mapped peatland vegetation at 1:20,000 scale for the whole of Northern Ireland derived from the interpretation of 1970s and 1980s aerial photographs. This map layer indicates peatland

²⁰ Land and Property Services (LPS), n.d. Spatial NI Map Viewer (Ordnance Survey Northern Ireland). Available at: <https://osni-spatialni.hub.arcgis.com/apps/61a4d209f6854ab2b79437fad24a6e9d/explore> [Accessed: 18 March 2026].

²¹ Teagasc (1980) General Soil Map of Ireland. Available at: <https://teagasc.ie/wp-content/uploads/2025/05/General-Map.pdf> [Accessed: 18 March 2026].

²² DAERA, n.d. Priority Habitats – Peatland. Available at: <https://www.data.gov.uk/dataset/f32fc761-a9f7-4339-b517-e314df6d17fd/priority-habitats-peatland> [Accessed: 18 March 2026].

across the north, limited central parts and south-east of the developable area. The NIEA Natural Environment Viewer²³ does however report that peatland (a priority habitat) is present across much of the developable area, with notable coverage in the northern and southern areas. The 2001 Callagheen Windfarm Environment Statement²⁴ indicates that the developable area is dominated by degraded blanket bog, reflecting the effects of grazing and land management with peat cutting also understood to have occurred.

A Phase 1 peat probing survey was undertaken in April and May 2025 using a 100 m grid approach within the developable area. This initial peat assessment indicates that peat is likely to be a constraint for the proposed Development. Based on current understanding, the developable area comprises a mosaic of peat conditions, with areas of bog inferred to be primarily located in the central and northern parts of the developable area. Peat exceeds 1 m in depth across much of the developable area, and several pockets where peat is greater than 3 m in depth are distributed across the central, southern, and eastern parts of the developable area. Peat <1 m in depth is more limited and generally occurs in a band across the northern part of the developable area and in small, localised areas elsewhere. Furthermore, with reference to the Callagheen Repowering Feasibility Report (ERM, 2025) it is stated that trial pit investigations indicate that the developable area is characterised by a peat layer of up to 2.9 m depth, overlying sand and clay, clay with boulders, and sandstone and shale strata, underlain by bedrock. Peat depths are also reported to exceed 1.0 m across the majority of the developable area (site) within this report.

7.2.3. Superficial Geology and Mass Movement

With reference to Geological Survey of Northern Ireland (GSNI)²⁵ 1:10,000 scale mapping of superficial geology, peat is present across the majority of the developable area, with the exception of an area to the north of the existing turbines T8 to T13 and the associated access track, where Till (Diamicton) is mapped at the surface. Peat is, however, also mapped along parts of the northern developable area boundary north of here. Limited areas of alluvium are mapped adjacent to some watercourse stretches.

With reference to Geological Survey of Northern Ireland (GSNI) 1:10,000 scale mapping of mass movement, no features are mapped within the developable area. Landslide deposits are mapped approximately 350 m north of the north-eastern tip of the developable area.

7.2.4. Bedrock Geology and Linear Features

With reference to GSNI²⁵ 1:10,000 scale mapping of bedrock geology, the vast majority of the developable area is underlain by limestone of the Dartry Limestone Formation. At the northern extent of the developable area, the Glencar Limestone Formation is present, comprising limestone, argillaceous rocks and subordinate sandstone. At the southern extent, the Moneymore Formation is mapped, comprising sandstone with subordinate argillaceous rocks and limestone.

Several structural faults are mapped by the GSNI (1:10,000 scale mapping of linear features) in the area local to the developable area. Within the developable area, an inferred fault of unknown displacement is mapped in the southern area, with an east–west orientation. No landform features are mapped within the developable area with reference to the GSNI 1:10,000 scale mapping of landform features.

²³ Department of Agriculture, Environment and Rural Affairs (DAERA) (2026) DAERA Spatial Data Viewer. Available at: <https://gis.daera-ni.gov.uk/arcgis/apps/experiencebuilder/experience/?id=7ed27d1df5c3451da04b18057b6d48bf> [Accessed: 18 March 2026].

²⁴ B9 Energy Services Ltd and Renewable Energy Systems Ltd (RES) (2001) Proposed Wind Farm, Callagheen, Garrison, Co. Fermanagh: Environmental Statement.

²⁵ Geological Survey of Northern Ireland (GSNI), n.d. GSNI GeoIndex. Available at: https://mapapps2.bgs.ac.uk/GSNI_Geoindex/home.htm [Accessed: 18 March 2026].

7.2.5. Artificial Ground

With reference to GSNI²⁵ 1:10,000 scale mapping of artificial ground none is present within or in close proximity to the developable area.

7.2.6. Hydrology

The developable area of the Site is understood to be predominantly peatland, grassland and bog, of variable condition, with forestry blocks immediately to the east. With reference to OSNI mapping and the NIEA Catchment Data Map Viewer²⁶ the developable area drains to several Water Framework Directive (WFD) catchments.

The northern part of the developable area primarily drains to the Erne River (Belleek) WFD catchment, via a watercourse which flows generally westwards when within the developable area and in close proximity to the developable area, before turning north-north-eastwards approximately 2.5 km to the north-west of the developable area and ultimately discharging to the Erne River approximately 2.5 km north of the developable area. Marginal areas at the northern extent of the developable area are within the Blackslee Burn WFD catchment, with mapped watercourses draining northwards towards Lower Lough Erne, located approximately 3 km to the north-east.

The central part of the developable area drains into the Drowes River WFD catchment, via a network of mapped watercourses and minor tributaries. The Drowes River ultimately discharges to Lough Melvin approximately 6.5 km to the south-west of the developable area.

The southern part of the developable area lies within the Roogagh River WFD catchment, with local watercourses and drainage features conveying flows south-westwards. The Roogagh River also ultimately discharges to Lough Melvin, approximately 5.5 km to the south-west of the developable area.

A number of waterbodies and lakes are present to the east of the developable area; however, based on a review of local topography, watercourses drainage patterns, these are not considered to be in direct hydraulic connection with the developable area. The closest of these is the Carricknagower Lough, which is approximately 250 m to the east of the developable area, and from review of map sources and imagery drains westwards towards the developable area.

Small drainage channels, as also observed during an earlier hydrological walkover at the Site on (April into May 2025), are present with the developable area as is characteristic of marshy areas. They are considered to be potential drainage pathways. Artificial drainage channels, potentially naturalised, are also considered to be potential flow pathways.

The aforementioned WFD river catchment areas and their ecological status are summarised in **Table 7.1**.

Table 7.1 – Water Framework Directive River Waterbodies

Name	Location Relative to the developable area	River Waterbodies WFD Ecological Status – 2021
Blackslee Burn	Northern Edges	Good
Erne River (Belleek)	Northern Area	Moderate Ecological Potential (MEP)
Drowes River	Central Area	Good

²⁶ Department of Agriculture, Environment and Rural Affairs (DAERA) (n.d.). NIEA Catchment Data Map Viewer. Available at: <https://www.daera-ni.gov.uk/services/niea-catchment-data-map-viewer> [Accessed: 19 March 2026].

Name	Location Relative to the developable area	River Waterbodies WFD Ecological Status – 2021
Roogagh River	Southern Area	Moderate

7.2.7. Flood Risk

The area has an average annual rainfall of 1,299 mm, based on Met Office HadUK-Grid data (12 km resolution; Grid ID S-61; monthly precipitation observations for the period 1991–2020)²⁷. Flood Maps for Northern Ireland²⁸ indicates that fluvial (river) flood risk within the developable area is primarily limited to areas immediately adjacent to watercourses that are mapped in the northern, central and southern part of the developable area, with floodplain extents not affecting the majority of the developable area. Further fluvial floodplain areas present within the developable area are minor in extent and are associated with shallow depressions and drainage features. Surface water flood risk is similarly limited and localised along drainage features and localised areas of surface water ponding. Climate change scenarios indicate future flooding will also remain confined to watercourse corridors and existing areas of potential flooding within the developable area. No coastal flood risk or recorded historical flood events are identified within the developable area.

Based on site conditions, groundwater flooding is not considered likely within the developable area. Observed wet ground conditions are interpreted to reflect shallow, perched water tables within peat soils and localised seepage, rather than regionally controlled groundwater flooding. This interpretation is supported by the findings of the trial pits reported also in the feasibility report (ERM, 2025), which identified limited groundwater influence in trial pits, and also the elevated, hilltop setting.

A concise assessment will be undertaken as part of the EIA to consider how the proposed Development may influence surface water run-off and potential effects on off-site receptors, having regard to the objectives of the Northern Ireland Flood Risk Management Plan²⁹.

7.2.8. Hydrogeology

The superficial deposits underlying the developable area (Till – Diamicton and Peat) are not mapped by the GSNI to be a potential superficial aquifer³⁰. The areas defined are based upon a sub-set of superficial deposits as mapped by GSNI at 1:250,000 scale where the following mapped deposits are considered to have potentially significant permeability and storage properties: glacial sands and gravels, blown sand, raised beach deposits and alluvium. A regional, detailed assessment of the individual deposits in terms of their aquifer potential (aerial extent, thickness, saturated depth etc.) is not available.

Although the Dartry Limestone Formation has the potential to act as a regionally important aquifer of high potential productivity, its influence within the developable area is considered likely to be limited, with shallow groundwater movement likely dominated by peat soils and surface water processes. There are no mapped karst features presented on the relevant GSNI GeoIndex³⁰ hydrogeology map layer with the developable area or a 2 km buffer. The bedrock within the developable area is primarily given a 4c rating of groundwater vulnerability (low groundwater vulnerability), with one area in the northern part of the

²⁷ Met Office (2025) Monthly Precipitation Observations (1991–2020) – 12 km resolution. Available at: <https://climatedataportal.metoffice.gov.uk/datasets/TheMetOffice::monthly-precipitation-observations-1991-2020-12km/explore> [Accessed: 18 March 2026].
²⁸ ESRI, n.d. ArcGIS Experience Builder Web Application. Available at: <https://experience.arcgis.com/experience/7f7ea5db1579844b8b443fe88d0fed722> [Accessed: 18 March 2026].
²⁹ Department for Infrastructure (DfI) (2021). Second Cycle Northern Ireland Flood Risk Management Plan 2021–2027. Belfast: DfI.
³⁰ British Geological Survey (BGS) and Geological Survey of Northern Ireland (GSNI) (n.d.). GSNI GeoIndex. Available at: https://mapapps2.bgs.ac.uk/GSNI_Geoindex/home.html [Accessed: 18 March 2026].

developable area (which correlates to an area where peat coverage is limited or absent) given a groundwater vulnerability rating of 2 (moderate vulnerability).

The Feasibility Report (ERM, 2025) indicates that groundwater was not identified as a significant constraint in trial pits relevant to the developable area (targeting the 13 existing turbine locations), with conditions ranging from surface seepage to groundwater encountered above bedrock at depths of approximately 2.0 m to 3.25 m at a limited number of locations.

With reference to the Department of Agriculture, Environment and Rural Affairs (DAERA) via Open Data NI mapping³¹ the developable area is located within the Kilcoo Groundwater Body, with the Castlecaldwell Forest Groundwater Body located directly to the north and the Glen Bridge Groundwater Body to the south. The Kilcoo Groundwater Body has a WFD (2021) classification of Good for both chemical and quantitative status. The Castlecaldwell Forest and Glen Bridge Groundwater Bodies are similarly classified as Good for both chemical and quantitative status.

7.2.9. Groundwater Dependent Terrestrial Ecosystems (GWDTEs)

Noting the limited groundwater encountered during trial pitting (as per the Feasibility Report), it is considered that groundwater influence across the developable area may be constrained. However, given the presence of wet mineral-organic soils and bog habitats within the proposed Development, there remains potential for GWDTEs to occur. An assessment of groundwater dependency for potential GWDTEs will therefore be undertaken as part of the EIA, informed by National Vegetation Classification (NVC) survey data (see **Chapter 5: Ecology** for further details), and supported by an evaluation of hydrological and hydrogeological conditions including the presence of mapped or reported groundwater emergence features such as springs.

There are no GWDTEs within a 2 km radius of the developable area with reference to DAERA via Open Data NI mapping³².

7.2.10. Designated Conservation Sites

The DAERA Natural Environment Map viewer³³ has been consulted to identify designated conservation sites within 2 km of the developable area. Noting the scale and nature of the proposed Development, a 2 km study area is considered appropriate, as potential impacts, including sediment release, changes to surface water runoff, and mobilisation of peat-derived organic matter, are expected to be limited in spatial extent and subject to natural processes of dilution, dispersion and attenuation within the receiving water environment. In addition, standard good practice measures for peat and water management would further reduce the potential for effects to extend downstream.

The Cliffs of Magho Area of Special Scientific Interest (ASSI) is located approximately 1.25 km to the east-north-east of the developable area and is designated for geological, flora and fauna interests, including wetland features. Review of local topography and watercourses indicates that this ASSI is not in direct hydraulic connection with the developable area. Watercourses to the north of the developable area drain northwards, while the majority of the developable area lies within the Erne River (Belleek) WFD catchment, which drains westwards. Only limited areas at the northern extremity of the developable area may drain northwards. Rosscor House Local Wildlife Site is located approximately 2 km to the north of the

³¹ Department of Agriculture, Environment and Rural Affairs (DAERA) (2021). Northern Ireland Groundwater Bodies. Available at: <https://www.opendatani.gov.uk/@department-of-agriculture-environment-and-rural-affairs/northern-ireland-groundwater-bodies2> [Accessed: 19 March 2026].

³² Department of Agriculture, Environment and Rural Affairs (DAERA) (2021). Groundwater Dependent Terrestrial Ecosystems. Available at: <https://www.opendatani.gov.uk/@department-of-agriculture-environment-and-rural-affairs/groundwater-dependent-terrestrial-ecosystems1> [(Accessed: 19 March 2026)].

³³ Department of Agriculture, Environment and Rural Affairs (DAERA) (n.d.). NIEA Natural Environment Map Viewer. Available at: <https://www.daera-ni.gov.uk/services/natural-environment-map-viewer> [Accessed: 19 March 2026].

developable area; however, review of the local watercourse network indicates that there is no direct hydraulic connection via mapped watercourses. Furthermore, Local Wildlife Sites are not statutory designations within Northern Ireland.

Part of the Lough Navar Scarps and Lakes ASSI lies adjacent to the south-eastern boundary of the developable area. This ASSI is designated for ecological interests, including blanket bog, lakes and upland fen habitats, and this adjacent area lies within the Roogagh River WFD catchment. Carricknagower Lough, the closest of the lakes to the developable area within this ASSI, is located approximately 250 m to the east of the Site boundary. Based on a review of local topography and available mapping, there are no clearly defined direct hydraulic pathways between the developable area and this waterbody. While the proximity of the ASSI to the developable area is noted, it is considered unlikely that there would be any direct impacts on these habitats via hydrological pathways associated with the proposed Development. Furthermore, no other protected waterbodies or water-dependent features within the wider Lough Navar Scarps and Lakes ASSI are considered to be in hydraulic connection with the developable area.

Glennasheever ASSI is located approximately 1.7 km to the east of the developable area and includes water-dependent ecological features such as blanket bog and wet heath. Review of topography and drainage indicates that this ASSI is not in direct hydraulic connection with the developable area. The intervening hydrological regime and distance reduce the likelihood of any potential effects.

Legran ASSI is located approximately 1.3 km to the north of the developable area and is also unlikely to be in direct hydraulic connection. Local watercourses closer to the developable area drain away from this designation, and any potential overland or channelised flow would be subject to significant attenuation over distance.

There are no Special Areas of Conservation (SAC), Special Protection Areas (SPA), Nature Reserves, World Heritage Sites or Ramsar Sites within 2 km of the developable area.

Taking account of the nature of the proposed Development, no impacts on geological features within the Cliffs of Magho ASSI or elsewhere offsite are anticipated.

7.2.11. Abstractions and Drinking Water Protected Areas (DWPAs)

There are no properties located within the developable area; however, several properties are situated in close proximity and may be served by Private Water Supplies (PWS) that could be hydraulically connected to the developable area. The presence and location of any such PWS will be confirmed during the EIA through consultation with Fermanagh & Omagh District Council Environmental Health Department, and, where necessary, with individual PWS owners.

An initial review of abstraction licences available and mapped online³⁴ indicates that there are unlikely to be licenced water abstractions within a 2 km radius of the developable area, although further review during the EIA to confirm would be appropriate.

With reference to DAERA via Open Data NI mapping³⁵ and the NIEA *Supporting document for the River Basin Management Plan 2021–2027: Protected Areas*³⁶ northern parts of the developable area are located within the Lough Erne (Belleek) Surface Water DWPA.

³⁴ Department of Agriculture, Environment and Rural Affairs (DAERA), n.d. Abstraction Licensing Dataset. Available at: <https://opendata-daerani.hub.arcgis.com/datasets/DAERANI:abstraction-licensing/explore> [Accessed: 18 March 2026].

³⁵ Department of Agriculture, Environment and Rural Affairs (DAERA) (2021). *Surface Drinking Water Protected Areas*. Available at: <https://www.data.gov.uk/dataset/d2e930f1-60a0-4f47-a6bb-8a0090d1e7ce/surface-drinking-water-protected-areas31> [Accessed: 18 March 2026].

³⁶ Department of Agriculture, Environment and Rural Affairs (DAERA), 2021. *Supporting document for the River Basin Management Plan 2021–2027: Protected Areas*. Northern Ireland Environment Agency.

With reference to DAERA via Open Data NI mapping³⁷ and the NIEA *Supporting document for the River Basin Management Plan 2021–2027: Protected Areas*³⁶ the developable area is located within the Kilcoo Groundwater DWPA, with the Castlecaldwell Forest Groundwater DWPA located directly to the north and the Glen Bridge Groundwater DWPA directly south.

7.2.12. Future Climatic Condition

Given the nature of the terrain and distance from any major urban areas, any future land use change from its current rural nature is unlikely over the lifespan of the proposed Development. The potential impacts of other developments upon hydrology, hydrogeology, geology and peat would be considered in a cumulative assessment.

The conditions at the Site would be affected by the likely influence of climate change in the future, which could affect the amount and intensity of rainfall, and temperature and evapotranspiration. The UK Climate Projections 2018 (UKCP18)³⁸ produced by the Meteorological Office Hadley Centre provide information regarding the potential future climate in Northern Ireland. Representative Concentration Pathway (RCP) 8.5 reflects a high emissions scenario and is considered a possible, but conservative, emission scenario suitable for evaluating the climate resilience of long-lifetime projects. The central estimate (50th percentile) under the RCP8.5 scenario predicts an increase in annual mean temperature of 2.5°C by the end of the 2050s. The RCP8.5 scenario also has a central estimate of a between 10-20% decrease in summer precipitation, with an increase of 10% in winter precipitation, by the end of the 2050s. This could change the hydrological characteristics of the developable area and wider catchment areas over time.

7.2.13. Comparative and Reparative Baseline

Comparative Baseline

The comparative baseline comprises the existing operational Callagheen Windfarm, including the established turbine infrastructure, access tracks, hardstanding areas and associated drainage regime currently present across the developable area.

As the proposed Development would retain a similar developed land use baseline across much of the developable area, it is anticipated that, with the implementation of standard good practice and embedded mitigation measures to be considered as part of the EIA process, the proposed Development would not result in materially greater off-site impacts on geology, hydrology and hydrogeology receptors when compared to the comparative (continued operational use of the existing wind farm) baseline outside of any relevant buffer zones for new infrastructure or below ground works (such as for below ground works and GWTDEs if applicable). As further infrastructure, including turbine foundations and tracks within previously undeveloped areas, would be constructed as part of the proposed Development, there would be potential for some localised alterations to impacts on the water environment and peatland (including run-off, and alterations to water flow paths and recharge), which would be considered as part of the EIA process within the main assessment. Scoped in effects for the proposed Development within the developable area are provided in **Section 7.3.1**.

Reparative Baseline

The restoration of the existing Callagheen Windfarm, as outlined within the approved Construction and Decommissioning Method Statement (December 2004), would principally comprise the removal of above-

³⁷ Department of Agriculture, Environment and Rural Affairs (DAERA) (2021). *Groundwater Drinking Water Protected Areas (DWPA's)*. Available at: <https://www.opendatani.gov.uk/@department-of-agriculture-environment-and-rural-affairs/groundwater-drinking-water-protected-areas-dwpas1> [Accessed: 19 March 2026].

³⁸ Met Office, 2019. *UK Climate Projections (UKCP18) guidance and reports*. Exeter: Met Office. Available at: <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/guidance-reports> [Accessed: 18 March 2026].

ground infrastructure, reinstatement of disturbed areas, and treatment of infrastructure in-situ where appropriate. This includes turbine foundations being reduced to below ground level and covered with suitable backfill material, whilst existing access tracks may either be reinstated to pre-wind farm condition or retained and repurposed as part of any future redevelopment of the Site.

It is acknowledged that land use, soil and vegetation characteristics across the developable area may differ in the longer term should the existing wind farm be fully restored, compared to a concurrent repowering of the Site. Restoration would likely have a negligible or potentially beneficial influence in relation to surface water run-off characteristics. As existing concrete turbine foundations would, however, likely remain in-situ below ground level, existing sub-surface drainage characteristics and groundwater recharge rates would likely remain largely comparable to the comparative baseline of the operational windfarm.

As further new infrastructure including turbine foundations and tracks would be constructed as part of the proposed Development, there would be the potential for impacts to receptors on-site or within applicable buffers for construction, operational and below-ground works compared to the restoration of the existing wind farm, and this would be considered as part of the EIA. It is anticipated that, with the implementation of standard good practice and embedded mitigation measures to be considered as part of the EIA, the proposed Development would not result in materially greater off-site impacts on geology, hydrology and hydrogeology receptors outside of relevant buffers if applicable (such as for GWDEs if assessed as actually groundwater dependent) when compared to the reparative scenario.

Scoped in effects for the proposed Development are provided in **Section 7.3.1**.

7.2.14. Key Sensitivities

In summary, the following key sensitive receptors have been identified as requiring further assessment on the basis of their value/sensitivity and the magnitude of change to which they would be exposed to:

- the underlying bedrock aquifer and Groundwater DWPA's;
- natural surface and near-surface water drainage patterns feeding into several WFD river catchments, and downgradient surface water bodies and Surface Water DWPA's.
- localised conditions supporting areas of peatland/bog and potential GWDEs; and
- Potential PWS/abstractions in close proximity to the developable area.

7.3. Potential Effects Assessment

7.3.1. Scoped In Effects

Given the baseline conditions described above in **Section 7.2**, a range of potentially significant effects may arise from the proposed Development. These have been scoped into the EIA for more detailed assessment.

It is noted that the term "decommissioning" is used to refer both to the removal of the existing Callagheen Windfarm, and to the future decommissioning of the proposed Development. The latter is expected to follow a broadly similar approach to that outlined in **Section 2.3**. Effects on the water environment and peat are anticipated to be comparable to those arising from the decommissioning of the current Callagheen Windfarm and construction activities. Potentially significant effects are provided below:

- Alteration of surface water and overland flow regimes - there is the potential to alter in-channel or overland flow regimes through excavations, exposure of bare earth or rock, alteration to artificial drainage, construction of turbine foundations, and the construction of watercourse crossings (if

required) and areas of hardstanding and track. This potential effect includes concentrating and potentially diverting flows from one catchment to another;

- Alteration of the groundwater flow regime and reduced recharge - there is potential to permanently alter or disrupt shallow groundwater flow, in particular through the installation/subsequent removal of tracks and hardstanding, the implementation of drainage measures, and the excavation of turbine foundations and pouring of concrete. The temporary lowering of the water table from dewatering activities potentially associated with the decommissioning/construction phases of the proposed Development also has the potential to temporarily alter or disrupt groundwater flow. Interruption of groundwater flow could potentially reduce the supply of groundwater to any identified GWDTE thereby causing an alteration/change to its inherent quality or quantity and/or the physical or biological characteristics;
- Erosion and sediment transport - there is the potential to increase erosion and transport of sediment to watercourses as a result of vegetation and soil stripping, excavations, watercourse crossings and dewatering activities (if required). Potential effects include direct and indirect effects on aquatic ecology and fluvial morphology of vulnerable receptors;
- Water quality and contamination impacts - there is the potential to impact on receiving soils, groundwater and watercourse quality through the release of contaminated water and stored chemicals used on-site during construction works (including the pouring of concrete for turbine foundations). Potential effects include those on water quality and indirect effects on aquatic ecology of vulnerable receptors (including any identified GWDTE); and
- Degradation of soil and peatland - there is potential for the loss and/or degradation of carbon-rich soils and peat during the construction and decommissioning phases of the proposed Development. These impacts may arise from excavation, handling, storage, and transportation of peat, which could affect its structural integrity and function as a carbon store. There is also potential for indirect and localised effects, including drying and oxidation of peat resulting from alterations to shallow groundwater flow regimes, as well as from inappropriate or ineffective peat management and reinstatement practices. In addition, there is potential for peat instability, including peat slide events, associated with excavation, loading, and changes to slope and hydrological conditions.

Cumulative effects associated with developments within the study area will be assessed as part of the EIA, with primary consideration given to potential changes in flood risk to off-site receptors and impacts on water quality. A 2 km study area is considered appropriate, reflecting the localised nature of potential hydrological and peat-related effects and the influence of natural processes such as dilution, dispersion and attenuation.

The presence of any water supply abstractions will be confirmed in consultation with Fermanagh & Omagh District Council and relevant consultees, and further assessment (if required) of potential environmental effects undertaken during the EIA.

7.3.2. Scoped Out Effects

From the desktop review undertaken, it is proposed to scope out the following from further assessment during the EIA:

- A detailed Flood Risk Assessment - a detailed Flood Risk Assessment is not considered necessary. Review of Northern Ireland Flood Maps, together with the elevated topography of the developable area, indicates that the risk of flooding is low and unlikely to be materially increased as a result of the proposed Development, including any potential off-site effects. Flood risk and surface water

management will instead be addressed through a concise assessment within the EIA, which will consider potential changes to surface water run-off and any associated effects on off-site receptors;

- Designated Conservation Sites - there are no designated conservation sites within the proposed development area, or within a 2 km radius, that are considered to be in direct hydrological connection with or at significant risk of effects arising from all phases the proposed Development. On this basis, significant effects on such sites are not anticipated, and they can be scoped out of further detailed assessment. Furthermore, given the nature and scale of the proposed Development, and the separation distance to any off-site geological designations, no significant effects are predicted. As such, these receptors can be scoped out of further assessment;
- Contaminated Land - due to current land use within the developable area, the potential for encountering contaminated land is considered low, and a Phase 1 (Contaminated Land) Survey is not considered necessary as part of the EIA. Any unexpected contamination encountered during any phase of development would be appropriately managed through standard good practice measures and environmental management controls; and
- Transboundary Effects - significant transboundary effects are not anticipated in relation to hydrology and peat, given the separation distance between the developable area and the RoI (in excess of 4 km at the closest point). As per the above, potential effects arising from peat disturbance or changes to surface water run-off during construction and operation would be subject to natural processes of dilution, dispersion, and attenuation within the receiving water environment over distance. In addition, the localised nature of the proposed works and the implementation of standard good practice measures for peat and water management would further reduce the potential for effects to extend into the RoI. On this basis, significant transboundary effects in relation to the water environment and peat are considered unlikely and can be scoped out of further assessment.

7.4. Proposed Methodology for Further Assessment

7.4.1. Desktop Studies

As part of the EIA the following desktop studies are proposed:

- Obtaining details of PWS and public abstractions within a 2 km radius of the developable area via appropriate data requests. Similarly, relevant rainfall and hydrological datasets (where available) from the appropriate regulator/environmental body would be obtained;
- Review of collected NVC/habitat survey data (refer also to **Chapter 5**) in order to identify potential GWDTE habitats within 100 m of excavations shallower than 1 m, or within 250 m of excavations deeper than 1 m. Further assessment will be undertaken to determine the degree of groundwater dependency of identified habitats, informed by hydrological and hydrogeological conditions. In the absence of specific Northern Ireland guidance, relevant Scottish Environment Protection Agency (SEPA) guidance will be applied. This will ensure that the design and layout of the proposed Development take account of the most sensitive habitats, with a view to avoiding these areas where practicable or, where avoidance is not possible, implementing appropriate mitigation measures.
- a review of publicly available online data sources for further details on soils, geology and the hydrological environment within the developable area and a surrounding 2 km study area; and
- review of design layout and potential constraints in relation to the water environment and peat sensitivities during the EIA.

Noting the scale and type of the proposed Development a wider study area extending 2 km from the developable area for the identification of hydrological and hydrogeological receptors whose condition

may be impacted by the proposed Development (including cumulative effects) is considered appropriate. Potential impacts associated with the proposed Development, including sediment release, changes to surface water run-off, and mobilisation of peat-derived organic matter, would be limited in spatial extent and subject to natural processes of dilution, dispersion, and attenuation within the receiving water environment. In addition, standard good practice measures for peat and water management would further reduce the potential for effects to extend downstream.

The study area, in respect of potential direct impacts on peat and carbon-rich soils, will consider land within the developable area only.

Throughout the EIA process and following further survey work and feedback from the consultation process it may be that the proposed methodology presented further develops. Should any changes occur that are likely to have a significant impact on any particular receptors, these will be included within the EIA.

7.4.2. Field Surveys

Initial site investigations (including Phase 1 Probing using a 100 m gridded approach) and assessment indicates that peat is likely to be a constraint for the proposed Development. As peat is likely to be a constraint to development, a detailed Phase 2 Survey would be warranted to inform the design of the proposed Development and associated peat assessments.

New or altered watercourse crossings associated with the proposed Development will be minimised as far as practicable. A site walkover within the developable area would be completed to determine the width and depth of any watercourses that require crossing, in order to suitability inform any development/construction.

7.4.3. Effects Assessment

Following completion of the baseline studies appropriate guidelines will be followed to determine the significance of effects. This will involve:

- determination of the importance of each identified receptor;
- assessment of effects to the identified receptors and/or resources, using a defined importance threshold with reference to ecological processes and functions as deemed appropriate;
- determining the extent, magnitude, duration, timing and frequency of the impacts;
- assessing the potential for impact reversibility;
- determining the level of confidence in the above impact predictions;
- identification of likely significant impacts in the absence of mitigation; and
- the identification of cumulative and residual impacts following implementation of mitigation.

It is noted that professional judgement will be applied in determining the significance of any impacts.

It is anticipated that the preliminary Flood Risk Assessment and WFD Assessment would be within the main ES document produced as opposed to standalone assessments.

7.5. Summary

A summary of the scoping assessment findings is provided in **Table 7.2**.

Table 7.2 - Geology, Hydrology and Hydrogeology Scoping Assessment Summary

Potential Effect	Proposed Development Phase	Rationale	Further Assessment
Scoped In			
Chemical Pollution and Sedimentation	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	An appropriate level of assessment will be undertaken to understand the potential impacts of the proposed Development on water quality, including potential chemical and sediment pollution.	A desktop review of potential pollution pathways (with reference also to available baseline water quality) to identify potential receptors and inform appropriate mitigation measures.
Alteration of Surface Water Drainage Patterns	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	An appropriate level of assessment will be undertaken to understand the potential impacts of the proposed Development in relation to the alteration of existing drainage patterns, following confirmation of the site design.	A desktop review of the topographical and hydrological environment of the developable area will be undertaken to assess the likely impacts on any identified receptors and the requirement for mitigation. A site walkover will also be carried out to assess the location of any proposed watercourse crossings.
Groundwater Table and Flow Regime Changes, including Reduced Recharge	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	An assessment of the hydrogeological environment of the developable area is required to determine potential flow pathways for pollution and hydraulic connectivity of the proposed Development to any potential receptors, including GWDTEs (if identified).	A desktop review of the developable area's hydrogeological environment and potential receptors will be undertaken. Habitats classified as GWDTEs within 100 m of excavations less than 1 m deep, and within 250 m of excavations greater than 1 m deep, will be scoped into further assessment. Where temporary dewatering is required for site excavations, this will be undertaken in accordance with relevant guidance and any required activity permits.
Increased Run-off and Flood Risk	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	An appropriate level of assessment will be undertaken to understand the potential impacts of the proposed Development in relation to increased run-off (rates and volumes) and associated flood risk, following confirmation of the site design.	A qualitative flood risk assessment relative to on-site and downstream flood risk in relation to the developable area will be undertaken as part of the EIA.
Degradation of Public or Private Water Supplies	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	An appropriate level of assessment will be undertaken to understand the potential impacts of the proposed Development on water quality and source availability for any PWS identified within the study area. Further details of public and/or private water supplies will be required to confirm supply arrangements and any necessary mitigation measures.	Consultation with the local authority and residents (if required) will be undertaken to confirm the presence of any PWS within a 2 km radius of the developable area. A risk assessment will focus on any abstractions within 100 m of excavations less than 1 m deep, and within 250 m of excavations greater than 1 m deep. Should no public or private water supplies be identified within 2 km of the developable area, potential effects on public abstractions and PWS will be scoped out.
Impacts on GWDTEs arising	Decommissioning, Construction, and	An appropriate level of assessment will be	A review of NVC and habitat survey data, together with the hydrological

from hydrological changes	Operation of proposed new turbines and site infrastructure	undertaken to understand the potential impacts of the proposed Development on water quality and source availability for any GWDEs identified within the study area.	and hydrogeological context, will be undertaken to determine the presence of any GWDEs within the developable area.
Scoped Out			
Impacts on Designated Conservation Sites	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	There are no designated conservation sites within the proposed Development area, or within a 2 km radius, that are considered to be in direct hydrological connection with the developable area or at significant risk of effects arising from the proposed Development.	N/A
Impacts on Designated Geological Sites	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	It is considered that the proposed Development will not have an impact on any designated geological sites.	N/A
Detailed Flood Risk Assessment	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	With reference to available flood maps and the nature of the proposed Development, it is considered that a concise section within the EIA will sufficiently consider how the proposed Development will impact surface water run-off and any associated effects on potential off-site receptors.	Qualitative flood risk assessment to be produced as part of EIA, see above.
Transboundary Effects (Hydrology and Peat)	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	Significant transboundary effects are not anticipated due to the separation distance (> 4 km), the localised nature of potential impacts, and the influence of natural dilution, dispersion, and attenuation processes, together with standard peat and water management measures.	N/A
Potential Effects from Contaminated Land	Decommissioning, Construction, and Operation of proposed new turbines and site infrastructure	Significant effects are not anticipated due to the upland, rural nature of the developable area and the absence of historical contaminative land uses, with any minor risks during construction managed through standard good practice measures.	N/A (in the unlikely event that contamination is encountered, appropriate measures will be implemented in accordance with relevant guidance and regulatory requirements).

7.6. Questions for Consultees

- Do consultees agree with the proposed methodology and scope of the geology, hydrology and hydrogeology assessment (including peat) and the application of a 2 km study area?
- Do consultees agree that contaminated land can be scoped out of further assessment, and also that all designated conservations sites and transboundary effects can be scoped out of further assessment?
- Do consultees have any comment regarding the likely significant effects scoped in for further assessment during the EIA or the potential effects scoped out?
- Do consultees agree that both the WFD Assessment and preliminary Flood Risk Assessment can be contained within the main ES and standalone reports would not be required?
- Do consultees agree with the proposed hydrological field surveys which will include Phase 2 peat probing and a Watercourse Crossings assessment?
- Do consultees agree with the approach in relation to the assessment of potential GWDTes and the use of relevant SEPA guidance?
- We propose a 50 m buffer from OSNI 1: 50,000 scale watercourses. Do consultees agree with this as part of the mitigation approach in relation to protection of surface water receptors?
- Are there any developments or infrastructure schemes which should be taken into account when considering potential cumulative impacts and is there agreement on applying a 2 km hydrological study area for the cumulative impact assessment also?

8. Landscape and Visual Amenity

8.1. Introduction

This chapter outlines the potential effects of the proposed Development on landscape and visual receptors and sets out the methodology to be undertaken to further assess the likely significant effects during the EIA.

The LVIA will consider both the current operational site context as a comparative baseline and the likely future baseline in the absence of the proposed Development as a reparative baseline, including restoration in accordance with the approved restoration plan.

The purpose of the landscape and visual impact assessment (LVIA) is to identify and record the potential significant effects that the proposed Development may have on physical elements of the landscape; landscape character; landscape areas that have been designated for their scenic or landscape-related qualities; and views from various locations such as settlements, routes, hilltops and other sensitive locations. The potential cumulative effects that may arise from the removal of the 13 operational wind turbines, and the addition of the proposed Development to other existing and consented renewable energy developments are also considered.

8.2. Baseline and Key Sensitivities

The Landscape and Visual Impact Assessment (LVIA) will be undertaken with reference to both the current baseline condition of the Site and its likely future reparative baseline condition in the absence of the proposed Development.

The current baseline reflects the existing site context at the time of assessment and includes the operational Callagheen Windfarm, associated infrastructure and the influence of the existing turbines on landscape character and visual amenity. This is referred to as the comparative baseline.

In addition, a future baseline will be considered to reflect the likely evolution of the Site in the absence of the proposed Development. This assumes decommissioning of the operational wind farm and restoration of the Site in accordance with the approved restoration plan associated with the extant consent. This is referred to as the reparative baseline.

The inclusion of both baselines reflects:

- the Site is currently experienced as an operational wind farm landscape;
- the existing consent requires decommissioning and restoration at the end of its operational life; and
- the proposed Development is a repowering proposal, for which both the existing operational condition and the likely restored future condition are relevant to understanding landscape and visual effects.

8.2.1. The LVIA Study Area

We propose a landscape and visual assessment within a 30 km radius of the turbines as a Wider LVIA Study Area. It is anticipated that a Detailed LVIA Study Area would be identified within c.10 – 15 km radius, to focus on predicted significant landscape, visual and cumulative effects.

8.2.2. The Site and Immediate Surroundings

The Site, located in County Fermanagh, is approximately 5 km north-east of Garrison and 2 km south of Lower Lough Erne. It is also c.4 km north of the Northern Ireland and ROI international border.

The terrain is defined by a series of east-west ridgelines forming an upland plateau, with steep escarpments and cliffs above the lough. The landscape elements comprise of a mosaic of open moorland, extensive peatland, and large blocks of commercial forestry, particularly across the northern part of the plateau. To the north, the terrain transitions to lower hills and the coastline of County Donegal, while to the west, the land falls away towards Lough Melvin and its surrounding valleys. The eastern and south-eastern edges of the Site are bordered by uninhabited areas dominated by forestry, which provide substantial topographical and vegetative screening.

Residential properties are scattered within 2 kilometres of the Site, and the Ulster Way walking route passes close by, offering views westward over Lough Melvin. The Site sits adjacent to the Lower Lough Erne Area of High Scenic Value, with the wider landscape characterised by its upland features, scenic water bodies, and a blend of natural and managed habitat.

8.2.3. National and Local Landscape Designations

The Site is not located within any national, statutory, or locally designated landscape.

The Site lies directly adjacent to the eastern border of the Lower Lough Erne Area of High Scenic Value (AoHSV), which is a key local landscape designation. No turbines are sited within the AoHSV, but proximity increases landscape sensitivity..

8.2.4. Landscape Character

An appraisal of the baseline landscape character is considered at three levels:

- National / regional landscape character areas identified within the Northern Ireland Regional Landscape Character Assessment (NIEA, 2015);
- Regional landscape character types (LCTs) in relation to landscape character profiles identified within the NIEA Supplementary Planning Guidance (SPG) to accompany PPS 18 Wind Energy Development in Northern Ireland Landscapes (updated 2019);
- Regional landscape character areas (LCAs) referenced in the Fermanagh and Omagh District Council Landscape Wind Energy Strategy (LWES) (2018); and
- The landscape character of the Site and its immediate context, based on field observations.

Within the Wider LVIA Study Area of 30 km radius there are 12 LCTs. The LVIA undertaken during the EIA will consider the potential direct and indirect landscape effects of the proposed Development where there is predicted visibility and also landscape value, landscape sensitivities, landscape capacity and potential cumulative landscape effects.

Directly Affected LCAs (where turbines are proposed) are Lough Navar Ballintempo Upland LCAs (within the Limestone Uplands LCT) and Lower Lough Erne LCA (Lough Basin LCT).

Other LCAs within 30 km radius are:

- Killy Beg and Killy More Townlands LCA;
- Tappaghan LCA;
- Ora More LCA;
- Faughary LCA;
- Carrickeeny LCA;
- Acres LCA;
- Mulreavy LCA;
- Tullynamoyle LCA;
- Irvinestown LCA; and
- Shankill Road LCA.

8.2.5. Landscape Capacity

In addition to the assessment of landscape and visual effects undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment (GLVIA3), the LVIA will have regard to relevant strategic landscape capacity evidence. This will include reference to the Fermanagh and Omagh District Council Landscape Wind Energy Strategy (LWES), which provides a strategic-level assessment of the capacity of different landscape character areas to accommodate wind energy development, including extensions and repowering of existing wind farms.

The LWES identifies areas of differing underlying landscape capacity and provides guidance on the scale, height and extent of wind turbine development that may be appropriate within defined landscape character areas, having regard to landscape sensitivity and cumulative change. The strategy is intended to inform decision-making at a plan and policy level and does not replace the need for a detailed, site-specific LVIA.

The LVIA will therefore use the LWES as contextual baseline evidence, rather than as a determinative assessment. The site-specific LVIA will test the principles and guidance set out in the LWES through a detailed appraisal of the existing landscape character, the characteristics of the receiving landscape, and the nature and magnitude of change arising from the proposed repowering. This will include consideration of whether the proposed turbine scale, layout and design can be accommodated within the landscape without giving rise to significant adverse landscape or visual effects.

In particular, the LVIA will consider:

- the extent to which the proposed repowering accords with the broad capacity findings for the relevant landscape character areas identified in the LWES;
- whether the repowering represents an efficient use of an existing wind farm location, taking account of existing infrastructure and established wind energy character;
- the degree of change in turbine height, scale and spacing relative to the consented and operational baseline. Alongside the change to the turbines within the Site, there could be changes to onsite grid and substation infrastructure. The LVIA would consider these as part of the scheme design;
- landscape effects arising from the intensification, simplification or rationalisation of wind energy development; and
- cumulative landscape and visual effects in the context of existing and consented wind energy development, informed by the cumulative assessment principles set out in the LWES.

The assessment of landscape capacity will therefore be embedded within the LVIA process, informing professional judgement on landscape sensitivity, magnitude of change and the significance of effects, rather than being presented as a standalone capacity study. This approach ensures that strategic capacity guidance is applied in a proportionate and site-specific manner appropriate to this EIA scoping and subsequent detailed assessment.

8.2.6. Visual Receptors

The visual assessment will draw from a Zone of Theoretical Visibility (ZTV), site visits and viewpoint analysis and assesses the potential visual effects on views and visual amenity likely to be experienced by receptors (people) within the landscape as follows:

- Views from residential properties and settlements;
- Views from designated / valued landscapes;
- Views experienced while travelling through the landscape (recreational road users, walkers, horse riders, cyclists for example); and
- Views from tourist and recreational destinations.

Visual effects would be experienced by the people who live and work in the area, along with those enjoying recreational activities in this area or simply passing through. Whilst it is people who are the actual receptors of visual effects, it is the places they may occupy, and from which the proposed Development may be seen.

- **Residential Receptors**

The landscape of the Detailed LVIA Study Area of 10 – 15km radius is lightly settled. Particular attention will be dedicated to the proposed Development's impact on local residents because they would

experience the wind farm from different locations, at different times of the day, usually for longer periods of time, and in different seasons.

The visual assessment will include a Residential Visual Amenity Assessment (RVAA) from individual residential properties within 2 km of the proposed Development. Properties are assessed from publicly accessible areas only, and access along private driveways would be respected. In this instance, the assessment of potential visual effects on views from residential properties would be prepared using aerial photographs and views of the property from the wider landscape.

There are approximately 30 residential properties within 2 km of the proposed Development and an estimated 25 within 1.5 km of the proposed Development.

- **Settlements**

The closest settlement of Garrison is located ~5 km south-west of the turbines. All other settlements are either just outside the radius or have limited visibility due to natural screening. Rossinver is located ~5 km west / south-west, and Kiltyclogher is located ~5 km north-west of the proposed Development, and Belleek (the only town within 15km radius of the proposed Development) is located ~5.6km to the south-east.

- **Transport**

It is important to take account of how the proposed Development would be experienced from the surrounding road network. The visual assessment will consider the potential visual effects likely to be experienced by people travelling through the landscape on main roads and the local road network. Views will vary depending on proximity to the road, the mode of transport, the angle of view, and intervening landscape features.

Routes which pass within 15 km of the proposed Development include:

- Cornahaltie Road (south);
- Lough Shore Road (north);
- Glennasheever Road (south east);
- A46 2.5 – 5km north; and
- B52 5km west.

- **Recreational Routes**

Visual impacts on tourists, or those participating in recreation activities, may be brief in nature by passing through the area by road, on horse, foot, or bike, their sensitivity to landscape and visual change is high because their purpose/activity is to appreciate landscape and surroundings.

The visual assessment will consider views from recreational receptors within 30 km of the proposed Development and focusing on those within 10 - 15 km radius of the proposed Development within a Detailed LVIA Study Area.

Nearby recreational receptors promoted recreational routes within the Detailed LVIA Study Area include:

- Ulster Way Walking Route which is situated ~100m of the proposed Development;
- Hill top and visitor locations within the Lower Lough Erne Area of High Scenic Value (AoHSV) and surrounding LVIA Study Area; and

Scenic viewpoints (Viewpoints 1-3, and 2-4) identified in the Fermanagh and Omagh LEWS at the western shore of Lough Melvin.

8.2.7. Key Sensitivities

In summary, the following key sensitivities have been identified as requiring further assessment:

- Effects during decommissioning of the existing turbines would be similar to that of the construction phase. Potential construction impacts would be limited to the Site and immediate surrounding area for the duration of the construction phase. Visual effects may extend as construction nears completion where larger installation equipment, cranes, would be required, however these visual effects would be temporary.
- Operational effects will form the basis of the LVIA. Initial studies, analysis and receptor selection is undertaken in line with the operational phase of the proposed Development.
- Potential effects on local landscape character, including cumulative effects particularly on the host landscape character;
- Potential landscape capacity considerations with respect to the Fermanagh and Omagh District Council and proposed taller turbines of 180m blade tip height;
- Potential effects on the special qualities of the Lower Lough Erne Area of High Scenic Value (AoHSV);
- Views from key visual receptors including from key routes and settlements within 10 km radius and nearby residential properties within 2 km radius;
- Views from recreational routes / hill top locations; and
- Static and sequential cumulative effects on uses of the Cornahaltie Road, Glennasheever Road and A46 and B52 roads, and the local road network surrounding the proposed Development.

8.3. Potential Effects Assessment

8.3.1. Scoped In Effects

Based on baseline conditions described above, it is anticipated that the following potentially significant effects are scoped into the EIA for further detailed assessment:

- Landscape character and landscape designations within 30 km of the proposed Development. A preliminary assessment will accompany the LVIA to ascertain which landscape character receptors will be assessed in detail, based on a review of the ZTV and ground truthing in the field as part of the Site assessment to confirm where there is intervisibility of the existing and proposed turbines at the Site. Where there is no visibility within a landscape character area/ landscape designation, this will be scoped out of an LVIA;
- Visual effects on representative viewpoints selected to illustrate the view from recreational routes / locations / residential areas;
- Visual effects on views from properties (within a 2km radius of the proposed Development), and settlements within 10 -15km radius;
- Static and sequential visual effects on views from the local road and main road network;
- Visual effects associated with aviation warning lighting on the repower turbines; and

- Transboundary indirect landscape effects associated with landscape character, landscape designations and visual effects. Cumulative landscape and visual effects across the international border will also be considered. Where there is no visibility within a landscape character area/ landscape designation, this will be scoped out of an LVIA.

8.3.2. Scoped Out Effects

From the desktop review undertaken, it is proposed to scope out the following from further assessment during the EIA:

- Landscape Character and designations outwith 30 km of the proposed Development.;
- Those LCTs outwith the ZTV, and within 30 km of the proposed Development;
- Those landscape designations outwith the ZTV, and within 30 km of the proposed Development would be scoped out of the LVIA. Where the ZTV indicates limited / fragmented visibility of the proposed Development, those areas would be reviewed in the field, and where there would be no visibility the landscape designation would be scoped out of the LVIA;
- Those heritage assets outwith the ZTV and those reviewed in the field where there would be no visibility from the asset (in consultation with the Cultural Heritage assessors) would be scoped out the LVIA;
- Effects on visual receptors with limited or no visibility of the proposed Development. A preliminary assessment will accompany the LVIA to ascertain which visual receptors are assessed in detail; and
- Transboundary landscape effects across the international border will be scoped out where there is no visibility within a landscape character area/ landscape designation.

8.3.3. Transboundary Effects

The proposed onshore wind repowering development is located within Northern Ireland, at a distance of 5 km from the international boundary with the RoI. In accordance with the EIA Regulations and relevant guidance, the potential for significant transboundary landscape and visual effects has been considered at scoping stage.

Given the scale of the proposal, the existing presence of wind turbines within the receiving landscape, intervening landform, vegetation and built development, and the distance to the nearest areas of the RoI, significant transboundary landscape effects are not anticipated. However, there remains potential for limited long-distance visibility of turbine structures from elevated locations within the RoI, particularly in areas close to the border and from designated or promoted routes.

On this basis, the LVIA will include a proportionate consideration of potential transboundary visual effects, focused on the identification of any theoretical visibility, confirmation of likely receptor sensitivity, and an assessment of whether any effects could be significant in EIA terms. Detailed assessment of transboundary landscape character effects is scoped out.

This proportionate approach reflects the nature of the proposed Development, the separation distance to the international boundary, and the limited potential for significant effects, while ensuring that any potential transboundary visual effects are appropriately identified and considered.

8.4. Proposed Methodology for Further Assessment

Further assessment during the EIA will consider direct and indirect effects on the landscape resource / landscape elements, landscape character and any designated landscapes. It will examine the nature and

extent of effects on existing views experienced by the local population and visitors to the area. The LVIA will also consider cumulative effects i.e., the incremental effects of the proposed Development in combination with other renewable energy developments.

The LVIA will assess the proposed Development against:

- the comparative baseline, in which the existing turbines remain in place; and
- the reparative baseline, in which the existing wind farm has been removed and the Site restored in line with the approved restoration requirements.

This approach is intended to provide a transparent assessment of the degree of change arising from replacement of the existing operational windfarm, and the degree of change that would arise were the Site to be restored in the absence of the proposed Development.

This applies to both landscape effects and visual effects, and the differences in the conclusions drawn against the comparative and reparative baselines will be illustrated transparently.

8.4.1. Legislation, Policy and Guidance

The LVIA process will inform modifications and refinements to the layout design and will be undertaken following the approach set out in Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3). The assessment will also draw upon current good practice guidance published by NatureScot. It will also include a review of policies of relevance to the LVIA and will be informed by current guidance including:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA3), prepared by the Landscape Institute & IEMA (2013);
- Notes and Clarifications on aspects of the 3rd Edition Guidelines on Landscape and Visual Impact Assessment (GLVIA3) LITGN-2024-01 (August 2024);
- Visual Representation of Development Proposals, Technical Guidance Note, The Landscape Institute (2019);
- Guidance on Aviation Lighting Impact Assessment, NatureScot (2024);
- Residential Visual Amenity Assessment (RVAA), Technical Guidance Note 2/19, The Landscape Institute (2019);
- Pre-application guidance for onshore wind farms, NatureScot (2024);
- Guidance for Assessment of Effects on Special Landscape Qualities (AESLQ) (2020), NatureScot;
- Assessing landscape value outside national designations (2021) The Landscape Institute; Technical Guidance Note 02/21 (2021);
- Siting and Designing Windfarms in the Landscape, NatureScot (2017);
- Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments, NatureScot (2012);
- Visual Representation of Wind Farms, Version 2.2, NatureScot (2017);
- NatureScot and The Countryside Agency (2002) Landscape Character Assessment Guidance for Scotland and England;
- Nature Scot (2021) Assessing the Cumulative Impact of Onshore Wind Energy Developments;
- Northern Ireland Assembly Policy REI of PPS18 – Renewable Energy;
- SPSS and any subsequent publication / update of this policy published in 2025 – 2026;
- Northern Ireland Environment Agency (NIEA) Supplementary Planning Guidance to accompany PPS 18 Wind Energy Development in Northern Ireland Landscapes (Last updated 18th October 2019); and
- Fermanagh and Omagh District Council Landscape Wind Energy Strategy (LWES) (Ironsides Farrar, 2018).

Where certain guidance documents have been produced in relation to Scottish onshore wind farm projects, i.e. not strictly applicable to Northern Ireland wind farm projects, these will be reviewed as part of the EIA process and due consideration will be given to how this guidance is applied to the proposed Development LVIA.

8.4.2. Study Area

Paragraph 5.2 within the Guidelines for Landscape and Visual Impact Assessment – Third Edition (GLVIA3) states that *“The study area should include the site itself and the full extent of the wider landscape around it which the Project may influence in a significant manner”*.

A Wider LVIA Study Area would be identified and then refined to a Detailed LVIA Study Area to avoid a disproportionately large LVIA Study Area. Landscape character, designated areas and visual receptors would be reviewed in the field, and where there would be no visibility they would be scoped out of the LVIA. This will allow the LVIA to focus on those landscape and visual receptors which may experience significant effects by the proposed Development.

Reference will be made to NIEA Supplementary Planning Guidance to accompany PPS 18 Wind Energy Development in Northern Ireland Landscapes (2019) on the good practice requirements for LVIA (Table 6, page 52 – 55) which advises that the study area or ZTV for wind turbines is 30 km from the outer most wind turbine positions.

The following LVIA Study Areas are proposed:

- Wider LVIA Study Area – 30 km radius
- Detailed LVIA Study Area – 10 - 15 km radius; and
- Cumulative LVIA Study Area – 30 km radius.

The study area for the LVIA will be determined by a combination of professional judgement, using ZTV figures and site assessment work.

8.4.3. Data Sources

Table 8.1 summarises the key literature and data sources used to define the receiving environment and inform this LVIA EIA Scoping assessment.

Table 8.1 – Key Sources of Landscape and Visual Receptors Data

Source	Summary	Coverage
Fermanagh and Omagh District Council	Planning Policy Documents, and Local Plans. Landscape character assessment reports. Please refer to Section 4.1 for the list of planning policy documents.	Includes the Council administrative areas
Fermanagh and Omagh District Council	Lower Lough Erne Area of High Scenic Value (AoHSV) - Local Development Plan 2030 - Draft Plan Strategy - Addendum to Countryside Assessment (Fermanagh and Omagh District Council August 2020)	AoHSV administrative boundary
Walk NI	Home - WalkNI Online resource for promoted recreational routes with descriptions and mapping detail.	Northern Ireland
County Level Landscape Character Assessments,	Local county authorities (varies) with County Level Landscape Character Assessments, within respective County Development Plans	Ireland

within respective County Development Plans		
National Landscape Strategy for Ireland 2015 - 2025	Department of Housing, Local Government and Heritage. This is a high-level policy framework to achieve balance between the protection, management and planning of the landscape by way of supporting actions.	Ireland
Sport Ireland	Development and promotion of outdoor recreational routes / trails / sports in Ireland. Including national waymarked trails.	Ireland
Ordnance Survey Maps	1:50,000 and 1:25,000 and 1:10,000 scale mapping	Northern Ireland
Aerial photography and Google Earth imagery	Aerial imagery to identify landscape features, landscape setting and street view imagery where available	International

8.4.4. Desktop Studies

As part of the LVIA, desktop reviews will include the following sources:

- Existing baseline landscape character studies;
- Mapping and ZTVs to determine the visual receptors ahead of field assessment;
- Relevant landscape planning policy;
- Special qualities of the Lower Lough Erne Area of High Scenic Value (AoHSV);
- Promoted recreational routes and hill walking routes within the Wider and Detailed LVIA Study Areas;
- Recreational receptors and promoted visitor attractions in the Wider and Detailed LVIA Study Areas; and
- Aerial photography to assess residential properties where there is no permitted access from publicly accessible locations.

8.4.5. Viewpoint Selection

A preliminary viewpoint list for the LVIA of the proposed Development is shown in **Table 8.2** and locations illustrated on **Figure 8.1**. The final list will be established through fieldwork and the scoping process and in agreement with the planning authority and relevant statutory consultees.

The preliminary viewpoints were selected to represent sensitive visual receptors with the potential to undergo significant effects based on a feasibility study (ERM, February 2025) analysis and the original Callagheen Windfarm LVIA viewpoints (dated December 2001), and a review of the ZTV and those viewpoints selected for the existing and consented wind farm developments within the local landscape. They were also selected to represent landscape receptors and with consideration of the potential for cumulative effects to arise. This list will be reviewed and updated after field analysis and in receipt of any feedback to this Scoping Report.

Baseline landscape context photographs will be prepared in accordance with industry leading NatureScot & Landscape Institute guidance and presented at a 90-degree horizontal angle of view.

Table 8.2 – Preliminary Viewpoint Locations

Viewpoint No.	Viewpoint Name	Landscape & Visual Receptors
1	Corahaltie Road (south east)	A viewpoint selected to illustrate the views from the local road network near the residential properties in proximity to the operational Callagheen Windfarm.
2	Corahaltie Road (south west)	A viewpoint selected to illustrate the views from the local road network near the residential properties in proximity to the operational Callagheen Windfarm.
3	Corahaltie Road (west)	A viewpoint selected to illustrate the views near the residential properties in proximity to the operational Callagheen Windfarm.
4	Lergan Lane	A viewpoint selected to illustrate the views from residential properties north west and in proximity to the operational Callagheen Windfarm.
5	Lough Road / A46 (north east)	A viewpoint selected to illustrate the views from the local road network / A46 near Rosscor north east of the operational Callagheen Windfarm. The viewpoint is near to residential receptors along this road.
6	Lough Road / A46 (north west)	A viewpoint selected to illustrate the views from the local road network / A46 near Corraheel north east of the operational Callagheen Windfarm. The viewpoint is near to residential receptors along this road.
7	Corramore Road	A viewpoint selected to illustrate the views from residential properties south west and in proximity to the operational Callagheen Windfarm.
8	View over Lough Melvin, from the roadside of the R281.	A promoted scenic viewpoint within the Fermanagh and Omagh District Council Landscape Wind Energy Strategy (LWES) (VP1-3). This is a key transboundary view from the RoI.
9	Boa Island Road (A47)	A promoted scenic viewpoint within the Fermanagh and Omagh District Council Landscape Wind Energy Strategy (LWES) (VP2-4). This is representative of the views from the road network along the northern edge of Lower Lough Erne.
10	Magho Cliff Viewpoint	A promoted scenic viewpoint at Magho Cliff Viewpoint within the Lough Navar Forest Drive.
11	Little Dog	This is an elevated viewpoint, approximately 6km from the Site. This is a hill top location, on the Ulster Way route and representative of view for recreational receptors.
12	Tawnaghgorm Hill,	This is an elevated viewpoint north of Castlecaldwell, 6-7km from the Site.

8.4.6. Field Surveys

Field surveys will be carried out to assess potential landscape and visual effects within the 30 km study area. The key aims of baseline fieldwork are to:

- Augment and verify the published descriptions of landscape character with fieldwork observations;
- Undertake an assessment of the quality or condition of baseline landscape and visual resources;
- Identify any significant features and elements in the landscape such as vegetation or built form that would screen the proposed Development and thereby verify or refine the ZTV;

- Visit each viewpoint location identified during the desk study and this Scoping Report, and to microsite each viewpoint location in accordance with good practice guidance and obtain accurate coordinates;
- Undertake photography using a full frame digital single-lens reflex (SLR) camera at each viewpoint location; and
- Identify landscape features and elements that may be altered or removed as a result of the proposed Development.

Fieldwork during the assessment stage will include an assessment of effects on the following receptors:

- Landscape resources including seascape and landscape character, seascape and landscape sensitivity, landscape features and landscape elements;
- Residential receptors;
- Local roads; and
- Footpaths / recreational routes.

8.4.7. Visualisations

The visualisations will be prepared and will accord with the requirements of NatureScot (Visual Representation of Wind Farms Version 2.2, December 2017). The visualisation locations and types will be discussed and agreed with the relevant stakeholders. They will be produced for the viewpoint locations being adopted to inform the landscape and visual assessment. If required, specific wireline views will be created where baseline panorama could not be captured such as from individual properties for the RVAA.

In accordance with NatureScot's recent guidance on the assessment of aviation lighting, two to three of the viewpoints will be represented with 'night-time' views. These viewpoints will be identified following confirmation of the lighting strategy to be adopted for the repower turbines and identification of key night-time receptors.

8.4.8. Aviation Lighting

The LVIA will include consideration of the potential effects on the landscape, and the views and visual amenity of people resulting from visible aviation warning lighting (if visible lighting is adopted). A Night-time Aviation Lighting Assessment (NALA) would be undertaken in accordance with NatureScot's recently published guidance (Guidance on Aviation Lighting Impact Assessment, November 2024) and form part of the landscape and visual impact assessment. The scope to the NALA (including viewpoints to be assessed) will be agreed through consultation with LPA and statutory consultees.

8.4.9. Effects Assessment

The methodology for the effects assessment will be based on the following current best practice guidance:

- Institute of Environmental Management and Assessment (IEMA) Guidance (IEMA, *Environmental Impact Assessment Guide to Shaping Quality Development* 2015 and *Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice* 2017);
- Guidelines for Landscape and Visual Impact Assessment – Third Edition (GLVIA3); and
- NatureScot guidance on the Visual Representation of Wind Farms, Version 2.2 (2017).

The two components of the LVIA will be based on the following definitions:

- ‘Assessment of landscape effects: assessing effects on the landscape as a resource in its own right’ (Landscape Institute and IEMA, pp. 21, 2013); and
- ‘Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people’ (Landscape Institute and IEMA, pp. 21, 2013).

The proposed Development may have a direct (physical) effect on the landscape in which it is located as well as an indirect or perceived effect from landscape character areas surrounding it. The potential landscape effects, occurring during the construction and operation of the proposed Development may therefore include, but are not restricted to, the following:

- Changes to landscape elements: the addition / revision of new elements and other characteristic elements of the landscape character type;
- Changes to landscape qualities: degradation, erosion, or reinforcement of landscape elements and patterns, and perceptual characteristics, particularly those that form key characteristic elements of landscape character types;
- Changes to landscape character: landscape character may be affected through the effect on characteristic elements (including perceptual characteristics), landscape patterns and attributes and the cumulative addition of new features, the magnitude and presence of which is sufficient to alter a notable part of the overall landscape character type of a particular area; and
- Cumulative landscape effects: where more than one project may lead to a potential landscape effect.

Visual effects are concerned wholly with the effect of proposed Development on visual receptors and general visual amenity. Visual effects are identified for different receptors (people) who would experience the view such as at their places of residence, during recreational activities, at work, or when travelling through the area. Visual effects may include the following:

- Visual effect: change in the appearance of the landscape as a result of the proposed Development. This may include changes to the quality of the view, ability of the visual receptor to appreciate the view, or changes to the characteristic elements within the view. These changes can be positive (i.e. beneficial or an improvement) or negative (i.e. adverse or a detraction); and
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

Particular attention will be dedicated to the proposed Development’s impact on local residents as they would experience the proposed Development from different locations, at different times of the day, usually for longer periods of time, and in different seasons.

8.4.10. Level of Effect Criteria

Essentially, the level of landscape and visual effect is determined through consideration of the ‘sensitivity’ of:

- The landscape element, assemblage of elements, key characteristics or character type or area under consideration bearing in mind quality and value; or
- The visual receptor; and
- The ‘magnitude of change’ posed by the proposed Development, in this case the decommissioning of the existing turbines and the repowering construction phase of the wind farm and associated infrastructure, the operational life of the wind farm and its associated infrastructure, and subsequent decommissioning phase.

The process involves design and re-assessment of any remaining, residual significant adverse effects that could not otherwise be mitigated or ‘designed out’. Landscape or visual sensitivity is ranked from high, medium, low to negligible and the magnitude of change is similarly ranked from large, medium, small to negligible as indicated in **Table 8.3**.

The type of effect is also considered and may be direct or indirect, temporary or permanent, cumulative, and positive, neutral or negative. The landscape and visual assessment involve a combination of both quantitative and subjective assessment and wherever possible will seek to gain a consensus of professional opinion through consultation, peer review and the adoption of a systematic, impartial, and professional approach.

In accordance with EIA Regulations, it is essential to determine whether the predicted effects are likely to be ‘significant’. Significant landscape and visual effects, in the assessor’s opinion, resulting from the proposed Development would be all those effects that normally result in a ‘major’, a ‘moderate to major’, or ‘moderate’ effect with any exceptions being clearly explained (refer to **Table 3.2**). Effects predicted to be of major or moderate significance are considered to be ‘significant’ in the context of the EIA Regulations and are shaded in light green in **Table 3.2**.

8.4.11. Cumulative Assessment

In accordance with the EIA Regulations, the LVIA will consider ‘cumulative effects’. An assessment of the cumulative effects of existing or ‘reasonably foreseeable’ renewable energy developments together with the proposed Development will be undertaken in line with NatureScot guidance and GLVIA3, and according to the following definitions:

- Cumulative effects are defined as the additional changes caused by the proposed Development in conjunction with other similar developments or as the combined effect of a set of developments, taken together;
- Cumulative landscape effects are defined as effects that ‘can impact on either the physical fabric or character of the landscape or any special values attached to it’; and
- Cumulative visual effects are defined as effects that can be caused by combined visibility, which ‘occurs where the observer is able to see two or more developments from one viewpoint’ and/or sequential effects which ‘occur when the observer has to move to another viewpoint to see different developments’ (Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments, NatureScot, 2021).

8.5. Summary

A summary of the scoping assessment findings is provided in **Table 8.3**.

Table 8.3– Landscape and Visual Amenity Scoping Assessment Summary

Potential Effect	Proposed Development Phase	Rationale	Further Assessment
Scoped In			
Landscape character & Landscape Designations within 30 km radius	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	There is a potential for significant effects on the landscape character and landscape designations. A preliminary assessment will accompany the LVIA to ascertain which landscape	A desktop review of landscape character assessment and landscape designation descriptions to identify potential receptors and inform appropriate mitigation measures. Augment and

		character receptors will be assessed in detail to prepare a proportional landscape assessment.	verify the published descriptions of landscape character with fieldwork observations. Undertake an assessment of the quality or condition of baseline landscape and visual resources in the field.
Visual effects on representative viewpoints selected to illustrate the view from recreational routes, recreational locations, the road network and settlements	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	Visual effects on the views of the wind farm within the landscape. This includes visual effects on representative viewpoints selected to illustrate the view from recreational routes / locations and the road network, to prepare a proportional visual assessment.	A desktop review of the ZTV and aerial mapping to determine the proposed viewpoints to confirm they are representative of all potential visual receptors. These are then verified in the field.
Visual effects on Residential receptors within 2 km of the Proposed Development	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	A RVAA will address the potential for significant visual effects on the views from residential properties, and the visual amenity of those living in close proximity to the proposed Development	A desktop review of the ZTV and aerial mapping to determine the locations of the nearest residential properties. The site assessment will ground truth the location, orientation, garden, driveway and primary elevations of the properties and views from the properties
Static, and sequential, cumulative visual effects on views from the local & main road network	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	Visual effects on the views of the wind farm within the landscape will be assessed and presented in the LVIA. This includes sequential visual effects on views from the local & main road network, to prepare a proportionate cumulative visual assessment.	A desk top review of the cumulative ZTVs, which is then verified in the field by site assessment using wireline visualisation to illustrate potential sequential cumulative visual effects on roads within the local landscape from the road network.
Transboundary Visual Effects	Preparation of photomontages or verified views from locations within the RoI (RoI) to illustrate the turbines at Development phase, (unless specifically requested at scoping or consultation stage by statutory consultees or regulatory authorities).	Significant visual effects could be experienced from the RoI given the proximity of the proposed Development to the Northern Ireland / RoI border at 5 km distance at it's closest point.	A desktop review of the ZTV and aerial mapping to determine the proposed viewpoints to confirm they are representative of all potential visual receptors. These are then verified in the field. Any viewpoints within the RoI would be discussed by statutory consultees to agree any proposed viewpoints within the RoI.
Transboundary Effects	Detailed field survey work within the RoI.	Significant indirect landscape and visual effects could be experienced from the RoI given the proximity of the proposed Development to the Northern Ireland / RoI border	A desk top review of the landscape character, landscape designations, visual receptors and potential cumulative effects would be considered, then verified in

		at 5 km distance at it's closest point.	the field. This includes locations within the RoI.
Scoped Out			
Landscape character & landscape/ heritage designations outwith the 30 km Wider Study Area	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	Those LCTs and designated landscapes, or heritage locations, outwith the study area where the distance from the proposed Development which would result in non-significant indirect landscape effects on the landscape character and the designated landscapes.	N/A
Those LCTs outwith the ZTV and within 30 km of the proposed Development	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	Those landscape designations which have limited / fragmented visibility of the proposed Development, which would result in non-significant indirect landscape effects on the landscape character.	N/A
Those landscape designations which have no visibility of the Proposed Development	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	Those landscape designations which have limited / fragmented visibility of the proposed Development, which would result in non-significant indirect landscape effects on the designated landscape.	N/A
Visual receptors outwith the ZTV and within 30km of the proposed Development	Decommissioning of existing turbines, Construction, and Operation of proposed new turbines	Effects on visual receptors with limited or no visibility of the Development. A preliminary assessment will accompany the LVIA to ascertain which visual receptors are assessed in detail.	N/A
Transboundary Effects – Direct Landscape Effects	Detailed assessment of landscape character effects within the RoI. Preparation of photomontages or verified views from locations within the RoI (unless specifically requested at scoping or consultation stage).	Direct landscape effects on the landscape character areas within the RoI would not be experienced.	N/A
Transboundary Effects	Preparation of photomontages or verified views from locations within the RoI (unless specifically requested at scoping or consultation stage).	Significant visual effects	N/A

8.6. Questions for Consultees

- Do you have any comments on the proposed LVIA methodology?
- Are you aware of any relevant policies or guidance documents not specifically mentioned in this section of the Scoping Report?
- Are you in agreement with the proposed Wider and Cumulative LVIA Study Area within a 30 km radius, a Detailed LVIA Study Area of 10 – 15 km radius and a 2 km radius Study Area for the assessment of predicted views from residential properties?
- Are you in agreement with the proposed Viewpoint Locations shown in **Table 8.2** and illustrated on **Figure 8.1**? Are there any additional viewpoints we could consider?
- Do consultees agree with the proposed use of both a comparative (existing wind farm) and reparative (restored site) baseline in the LVIA?
- Do you have any comment on the proposed baseline of existing operational wind farm, landscape character, landscape designations and proposed visual receptors, and the proposed data sources, are there any information or receptor gaps?
- Do you have any comments or suggestions on the approach to cumulative landscape and visual assessment?

9. Archaeology and Cultural Heritage

9.1. Introduction

This chapter outlines the potential effects of the proposed Development with respect to archaeology and cultural heritage visual receptors within the existing comparative baseline conditions and the future reparative baseline conditions and sets out the methodology to be undertaken to further assess the likely significant effects during the EIA. This chapter considers the Site, although it is noted that the future potential HMA south of Cornahaltie Road which forms part of the Site will not contain any proposed Development infrastructure.

9.2. Baseline and Key Sensitivities

9.2.1. Cultural Heritage Assets within the Site

A desktop survey of the publicly available material within the Department for the Communities Northern Ireland Sites and Monuments Record (NISMR) datasets including: Scheduled Historic Monument Areas, Areas of Special Archaeological Interest, Defence Heritage, Historic Parks and Gardens, Industrial Heritage Record, Listed Buildings, Northern Ireland Sites and Monuments Records, and Areas of Archaeological Potential, has identified nine recorded cultural heritage asset within the Site (**Figure 9.1**):

- FER171:050 is recorded as a prehistoric occupation Site and was identified during an archaeological evaluation carried out in advance of the existing Callagheen Windfarm. The monitored excavation of a series of engineering test pits revealed three charcoal spreads beneath the peat bog and a large, worked timber.

- Sites FER190:001 and FER190:003 are recorded as wedge tombs known as the Giant’s Graves and are afforded scheduled protection. FER190:001 is formed by nine limestone slabs and FER190:003 consists of 13 limestone slabs and boulders. Of similar site type is FER190:002, which is recorded as a megalithic tomb consisting of eight limestone boulders, 0.14-0.48m in height. These boulders are disposed in a shallow arc west-north-southeast.
- Two limestone uprights and a small boulder, measuring 0.57m, 0.7m and 0.15m in height, respectively, are set in an east-west line and are recorded under FER190:004. The small boulder is known locally as “Finn MacCumhall’s Finger Stone”. Site FER190:005 also consists of two large limestone uprights. These uprights are 2.8m apart and measure 1.25m and 1.4m in height, respectively. Both sites are afforded scheduled protection.
- FER190:025 has been recorded as a non-antiquity site and is not of archaeological significance.
- FER190:032 and FER190:033 are scheduled monuments recorded as cup and ring marked stones. No further information is available for these sites.

An inspection of the 1st and 2nd edition Ordnance Survey maps shows evidence for historical features within the Site (**Figure 9.2 and Figure 9.3**). Both maps show multiple structures located in the southern extent of the Site boundary and the 2nd edition marks the location of the Giant’s Graves and the standing stones recorded in the NISMR.

9.2.2. Cultural Heritage Assets Beyond the Site

For the purposes of this assessment, the desktop survey was extended out to a 5 km search radius from the Site boundary. The desk top survey identified the cultural heritage assets summarised in **Table 9.1** and illustrated on **Figures 9.4 to 9.7**.

Table 9.1 - Cultural Heritage Assets Within 5 km

Data Source	Identified assets within 5 km search radius
Northern Ireland Sites and monuments Records (NISMR)	93
Scheduled monuments	14
State care monuments	No
Area of Archaeological Potential (AAP)	No
Area of significant archaeological interest (ASAI)	No
Industrial Heritage Records (IHR)	46
Historic Buildings Records (HBR)	19
Historic Gardens Register	1
Defence Heritage Register	5
Battle sites	1
Excavations database	2

9.2.3. Key Sensitivities

The initial desk-based assessments indicate that there are nine heritage assets, within the Site. The identified sites are recorded as an occupation site, megalithic monuments and cup and ring marked stones. The occupation site FER171:050 has no above ground remains but indicates the potential for additional archaeological deposits to exist within the Site boundary. Of the remaining eight sites identified within the Site boundary, seven are archaeologically significant (FER190:001, FER190:002, FER190:003, FER190:004, FER190:005, FER190:032)

and FER190:033) and six are afforded scheduled protection. These assets have the potential to be subject to effect on their setting within the existing baseline conditions as they have upstanding remains. Comparatively, reparative baseline conditions would result in no impact on their setting.

Looking beyond the Site, there are 14 Scheduled Monuments, 17 Listed Buildings and 1 Historic Garden within a 5km search radius. These are detailed in **Tables 9.2 to 9.4**. Due to their proximity to the Site boundary, these assets have the potential to be subject to effect on their setting within the existing baseline conditions. This impact will be based on the nature and scale of the intervisibility between the assets and the proposed Development. Of particular note is asset FER171:008, which is recorded as a well-preserved rath and located adjacent to the north-western corner of the Site. Other assets of note are the scheduled monuments FER190:006 and FER190:015 which are located immediately southwest of the Site. They are recorded as two Megalithic tombs, one of which is known as the Giant’s Grave. The scheduled monuments, listed buildings and historic garden will be subject to further assessment through the EIA process.

Table 9.2 - Scheduled Monuments within the 5 km Study Area

Scheduled Monument Number	Name and Description
FER170:009	Possible megalithic tomb: graveyard
FER170:015	Sweat house
FER170:016	Crannog
FER170:038	Mound
FER171:002	Ruined church and graveyard: stone HEAD
FER171:003	Castle Caldwell
FER171:016	Round cairn: Black Fort
FER189:002	Rath
FER190:006	Megalithic tombs: “The Giant’s Graves”
FER190:009	Court tomb: Skaglea cairn
FER190:015	Megalithic tombs: “The Giant’s Graves”
FER190:017	Possible wedge tomb: Giant’s Grave
FER190:019	Standing stones (3): possible megalithic tomb
FER190:022	Sweat house

Table 9.3 - Listed Buildings within the 5 km Study Area

Historic Building	Address	Use	Grade
12/12/004	St John the Baptist Roman Catholic Church Carran Beg Belleek Enniskillen	Church	B
12/12/011	Meenacloyabane Garrison Enniskillen	Bridge	B2
12/12/012	Conagher/Meenagheragh Garrison Enniskillen	Bridge	B2
12/12/014	Bridge over Roogagh River garrison Enniskillen	Bridge	B1
12/12/023	Knockarevan Primary School Garrison Enniskillen	School	Not listed

12/12/026	146 Brollagh Road Drumlisaleen Garrison Enniskillen	House	B2
12/12/031	30 Glennasheever Road Knockarevan garrison Enniskillen	House	B2
12/12/035	Carranbeg House Rosscor Road Belleek Enniskillen	House	B1
12/12/036	Farrancassidy House Farrancassidy Belleek Enniskillen	House	B+
12/12/042	Gortnalee Bridge Garrison Enniskillen	Bridge	B1
12/12/043	Bridge B at Gortnalee Garrison Enniskillen	Bridge	B1
12/13/003	8 Derrynacrannog Road Belleek	House	B1
12/13/004	7 Derrynacrannog Road Ballaghgee Roscor Belleek	House	B1
12/13/005	Loughlan's, 154 Boa Island Road Keenaghan Belleek	House	B1
12/13/021	Thatched Cottage Mulleek Ballymagaghan townland Leggs Enniskillen	House	B1
12/13/023	Tewrynoren House (old Rectory) 4Mulleek Road Tawnynoran Belleek Enniskillen	House	B1
12/13/040	Lodge to former Magherameenagh Castle Belleek Enniskillen	Gates/Lodges	B2

Table 9.4 - Historic Gardens within the 5 km Study Area

Park and Garden Reference	Name
F-005	Castle Caldwell

9.3. Potential Effects Assessment

9.3.1. Scoped In Effects

The scoped in effects for the proposed Development relate to the construction and operational phases of the project. The construction stage effects will be those direct physical impacts upon previously unknown, sub-surface archaeological deposits within the Site. The operational stage effects will be those that have direct impact upon the setting of regionally important monuments, historic gardens and listed buildings identified within the wider search radius.

9.3.2. Scoped Out Effects

Due to the temporary nature of the construction phase, the potential for impacts on the setting of identified cultural heritage assets has been scoped out of further assessment.

The decommissioning stage of the existing Callagheen Windfarm has been scoped out of further assessment. The decommissioning of the existing infrastructure will have no impact upon cultural heritage assets within the Site boundary.

The decommissioning stage of the repower of Callagheen Windfarm, which has an expected lifespan of 40 years, has been scoped out of further assessment. The decommissioning of this infrastructure will have no impact upon cultural heritage assets within the Site boundary.

Reparative baseline conditions will see the Site restored to pre-development conditions and as such the potential for impacts on the setting of identified cultural heritage assets has been scoped out of further assessment.

9.3.3. Transboundary Effects

The 5km study area extends into County Donegal, and no cultural heritage assets have been identified within RoI within the study area. There are a number of cultural heritage assets located along the RoI border which, despite being outside of the 5km study area, have the potential to be subject to effect on their setting. This impact will be based on the nature and scale of the intervisibility between the assets and the proposed Development. All transboundary impacts will be assessed as part of the EIA process.

9.4. Proposed Methodology for Further Assessment

Further assessment of likely significant effects during the EIA will involve a basic four step approach:

- Consultation with F&ODC and the Historic Environment Division;
- Detailed desktop study;
- Field survey; and
- Assessment of the likely significant effects for both construction and operational phases of the proposed Development.

9.4.1. Desktop Study

A detailed desktop study will be undertaken of the Site and an area extending out to a 5 km search radius from the Site boundary. This will be achieved using published data available online from the Department for Communities: Historic Environment Division Sites and Monuments Record (DfC:HED NISMR) as well as cartographic material available from the Public Records Office Northern Ireland (PRONI). The desktop study will identify the various types and details of the cultural heritage assets within the study area.

9.4.2. Field Surveys

A detailed walkover survey of the Site will be undertaken. The purpose of the walkover survey will be to identify potential archaeological features within the Site which are not recorded within any of the available databases utilised to form the desktop study. Particular attention will be paid to those areas of the Site where new development may occur.

9.4.3. Effects Assessment

All identified archaeological deposits associated with the single heritage asset FER171:050 identified on the developable area of the Site have been removed. As such, there will be no physical impact on this cultural heritage asset during the construction stage of the Proposed Development. The existence of this single heritage asset does however, indicate the potential for additional archaeological deposits to exist within the Site boundary. The effects assessment will look at the potential construction effects on the previously unknown, sub-surface archaeological deposits identified within the developable area of the Site (if any).

Seven sites of archaeological significance were identified in the southern portion of the Site and are recorded as having upstanding remains. This area of the Site will be assessed for habitat management suitability and will not host any infrastructure. As such, there will be no physical impact on these cultural heritage assets during the construction stage of the proposed Development. Six of the seven sites,

FER190:001, FER190:003, FER190:004, FER190:005, FER190:032 and FER190:033, are scheduled and the impact assessment will examine the potential operational (including cumulative) effects on the setting of these monuments.

The impact assessment will also examine the potential operational (including cumulative) effects on the setting of the regionally important monuments, historic gardens and listed buildings identified within the wider search radius. Of particular relevance here will be the impact on the setting of the scheduled monuments FER190:006 and FER190:015 which are located immediately south-west of the Site.

For the purposes of the assessment of cumulative effects, only wind farm developments (operational, under construction, consented or application stage wind farms) within c.10 km of the Site will be considered.

The impact on assets identified within the Fermanagh and Omagh District Council area will be assessed using the planning guidelines as set out in the Fermanagh & Omagh District Council Local Development Plan 2030.

The operational effects will be assessed utilising the guidance set out in the Department for Communities: Historic Environment Division publication: ‘Guidance on Setting and the Historic Environment’. This document includes a definition of setting, identifies those key aspects of setting which can contribute to the significance of a heritage asset, and outlines a three-stage process for assessing the impacts of change upon setting. This assessment will entail input from ZTV analysis with those assets of regional importance (Scheduled Monuments, Listed Buildings and Historic Gardens) which are intervisible with the proposed Development requiring further assessment at EIA stage. This will include field inspection of the monuments and the generation of wireframes and/or photomontages where appropriate.

9.5. Summary

A summary of the scoping assessment findings is provided in **Table 9.5**.

Table 9.5– Archaeology and Cultural Heritage Scoping Assessment Summary

Potential Effect	proposed Development Phase	Rationale	Further Assessment
Scoped In			
Impact upon previously unknown, sub-surface archaeological deposits within the Site	Construction stage	Potential for new construction works to identify sub-surface archaeological deposits within the Site, outside of the existing footprint	Desktop survey and site inspection to establish the baseline potential for archaeological discoveries within the Site.
Impact upon the setting of regionally important monuments, historic gardens and listed buildings identified within 5 km of the Site	Operational stage	Potential for the operational phase to impact on the setting of the identified cultural heritage assets	Desktop survey to identify relevant cultural heritage assets for potential assessment. ZTV analysis and field inspection of monuments to establish potential for impact on setting. Assessment on impact on setting using photomontages where applicable.

Transboundary impact upon the setting of historic monuments located in Counties Donegal and Leitrim, Ireland	Operational stage	Potential for the operational phase to impact on the setting of the identified cultural heritage assets	Desktop survey to identify relevant cultural heritage assets for potential assessment.
Scoped Out			
Impact upon the setting of identified cultural heritage assets within the Site	Construction stage	The temporary nature of the construction phase will not have a lasting impact on the setting of identified cultural heritage assets	N/A
Impact upon previously unknown, sub-surface archaeological deposits within the Site	Decommissioning Stage of the existing wind farm	The decommissioning works will have no impact on archaeological deposits within the Site.	N/A
Impact upon previously unknown, sub-surface archaeological deposits within the Site	Decommissioning Stage of the Repower of Callagheen windfarm	The decommissioning works will have no impact on archaeological deposits within the Site.	N/A
Impact upon the setting of identified cultural heritage assets within the Site.	Reparative baseline conditions	The Site will be restored to pre-development conditions and there will be no lasting impact on the setting of identified cultural heritage assets.	N/A

9.6. Questions for Consultees

Key questions for the Council and Consultees are:

- Do the Consultees agree with the proposed methodology and scope of assessment?
- Do the Consultees have any information regarding current or recent archaeological work or projects being undertaken within the 5km Study Area, particularly those whose results may not yet be recorded in the Northern Sites and Monuments Records?
- Are the Consultees aware of any further sites with statutory protection within the wider landscape whose settings may be affected by the proposed Development?
- Do the Consultees have details of any cultural heritage sites in the vicinity of the proposed Development which it considers may require further consideration within the EIA process?

10. Noise

10.1. Introduction

This chapter outlines the approach to assessing potential effects of noise and vibration from the proposed Development on nearby noise-sensitive receptors (NSRs).

During their operation, wind farms have the potential to create noise effects through both aerodynamic noise and mechanical noise. Aerodynamic noise would be caused by the interaction of the turbine blades with the air. Mechanically generated noise would be caused by the operation of internal components, such as the gearbox and generator which are housed within the nacelle of the turbine. However, the level of mechanical noise radiated from current technology wind turbines is generally engineered to a low level.

During construction and decommissioning, noise and vibration could arise from both onsite activities, such as the construction or upgrade works of onsite access tracks, turbine foundations, and from the movement of decommissioning and construction related traffic both on the Site and travelling on public roads to and from the Site.

10.2. Baseline and Key Sensitivities

10.2.1. Site Setting

The Site is located in an area of low population density, with scattered residential & agriculture properties surrounding the Site. The noise environment in the surrounding area is expected to be characterised in many cases by 'natural' sources, such as wind disturbed vegetation, birds and farm animals. Some anthropological sources are expected from agriculture activities and road traffic noise, which will have influence in areas, in particular at residents located to the west along the Cornahaltie Road, although this will tend to reduce at night. Noise from the existing Callagheen Windfarm will also be audible at some of the nearest properties in some conditions.

10.2.2. Baseline

The applicable ETSU-R-97 guidance for the assessment of operational noise, described later in this chapter, requires consideration of a baseline background noise environment which is not substantially influenced by existing operational turbines. Similarly, the assessment of construction noise will not take into consideration the presence of existing turbines. Therefore, the assessment of noise for the proposed Development will not require consideration of different baseline scenarios (comparative or reparative), however the assessment of operational noise will consider the change in operational noise levels associated with the repowering for contextual purposes.

Baseline noise measurements have been previously undertaken as part of the application for an extension of Callagheen Windfarm (which was since withdrawn). Specifically, baseline measurements were undertaken to the south of the existing Callagheen Windfarm as reported in the 2007 Callagheen Windfarm extension application ES (Renewable Energy Systems Ltd, 2007). Although some time has elapsed since the survey, an initial review of historical satellite imagery and planning history show no substantial change in developments or infrastructure in the area that is likely to materially change the background noise characteristics since the time of the survey (with the exception of wind turbine noise, which is excluded in any case).

The survey locations and measured data were used in the Callagheen Windfarm extension noise assessment; therefore, the data is considered likely to still be representative of the properties to the south of Callagheen Windfarm. The historical survey data will require some corrections for wind shear effects

to account for the difference in hub heights of the proposed Development, in line with current good practice, and the potential influence from the operational wind turbines will require detailed review. The robustness of the data will be reviewed in further detail, and its use will be agreed in consultation with the F&ODC.

This existing baseline data represents most of the properties in the area south of the site, however, some properties to the north and south-east may not be represented by this historical baseline data. It is anticipated that a supplementary background survey may therefore be required at potentially two locations to supplement the historical data and establish the background environment at the nearest NSRs to the site.

The use of historical data, exact measurement locations, and survey methodology will be discussed and agreed in consultation with the F&ODC.

Given the rural nature of the site, it is anticipated that the acoustic environment will be quiet, and therefore, the lowest category criterion in BS 5228-1:2009+A:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise', based on absolute levels can be used for the construction noise assessment. Baseline measurements will therefore not be required for the construction (and decommissioning) assessment which can be assessed as a desktop study with conservative assumptions for the criteria, as outlined in **Table 10.1**.

10.2.3. Key Sensitivities

Key receptors in terms of noise are the highly sensitive residential receptors in proximity to the Proposed Development. There are some properties surrounding the Site to the west, north, and south-east, which will require careful consideration and assessment in terms of operational noise from the repowering turbines.

Some of these noise-sensitive residential locations will also be potentially affected by noise or vibration effects from the decommissioning or construction activities of the proposed Development. In addition, dwellings located along Site access tracks or transport routes will also be considered in relation to existing windfarm decommissioning and construction traffic.

10.3. Potential Effects Assessment

10.3.1. Scoped In Effects

The following effects will be included within the scope of the assessment:

- Construction noise and vibration of proposed Development and associated infrastructure (including Decommissioning of existing Callagheen Windfarm);
- Construction traffic noise; and
- Operational noise from wind turbines.

Initial decommissioning activities of the existing wind turbines and infrastructure will be included as part of the construction phase of the proposed Development and will be assessed. Other effects such as noise and vibration from blasting at borrow pits will be considered in the assessment if applicable.

10.3.2. Scoped Out Effects

It is recognised that vibration resulting from the operation of wind farms is imperceptible even at short distances of 25 metres (m) or more from a turbine, and separation distances from all receptors to the

proposed turbines are well in excess of this. It is therefore proposed to scope out the assessment of vibration produced during the operation of the proposed Development.

The life expectancy of the repowered Callagheen windfarm would be 40 years. Future decommissioning of the repowered wind farm would be broadly similar to the decommissioning of the existing turbines (included as part of the construction assessment). Furthermore, due to the reduced number of repower turbines (nine) compared to the existing turbines (thirteen), the noise and vibration effects from future decommissioning are expected to be less significant than the combined decommissioning and construction effects of the existing Callagheen turbines and the repower development. Therefore, the combined effects included within the scope of the assessment are considered to represent the worst-case scenario for the purpose of the EIA and so future decommissioning effects are scoped out of the assessment.

The Design Manual for Roads and Bridges (DMRB) (The Highways Agency, Transport Scotland, Transport Wales and The Department for Regional Development (Northern Ireland), 2020) advises that significant vibration impacts from traffic using the road network is unlikely and references BS 5228-2 (British Standards Institute, 2014) which does not consider vibration from vehicle movements as a notable source. Whilst occasional momentary vibration can arise when heavy vehicles pass dwellings at very short separation distances (i.e. 10 m or less), this is not sufficient to constitute a risk of significant effects and therefore vibration impacts associated with road traffic during all phases of the proposed Development are proposed to be scoped out.

With regards to infrasound and low frequency noise, the PPS18 (2009) guidance referenced at 10.4.1 refers to a study by Department of Environment, Food & Rural Affairs (DEFRA, 2003) entitled *'The measurement of low frequency noise at three UK Wind Farms, W/45/00656/00/00'*, which states "... the principal finding were that infrasound associated with modern wind turbines is not a source which will result in noise levels which may be injurious to the health of a wind farm neighbour". This was since confirmed by several other studies. The current recommendation is that ETSU-R-97 (Department of Trade & Industry, 1996) should continue to be used for the assessment and rating of operational noise from wind farms. It is therefore not proposed to undertake specific assessments of infrasound and low frequency noise. The noise assessment will, however, consider the latest supporting information on these subjects and the topic of wind turbine blade swish or Amplitude Modulation (AM).

Traffic during the operational phase of the proposed Development is likely to be very low and is considered unlikely to have any adverse noise effects and is also proposed to be scoped out.

10.3.3. Transboundary Effects

Given the localised nature of most construction and operational noise impacts, which would only affect the closest residential receptors and are likely to be negligible beyond a distance of approximately 1 or 2 km from the Site, no impact beyond the boundary of F&ODC are anticipated. The only potential transboundary effects would be construction traffic noise which will be considered along the construction traffic transport route to the Site, and which may therefore potentially affect some receptors outside of Northern Ireland.

10.4. Proposed Methodology for Further Assessment

Further assessment of likely significant effects during the EIA will involve detailed assessment based on desktop study of decommissioning and construction phases, including traffic noise effects, collection of data from field baseline surveys and historical data will be used to inform the assessment of operational noise from wind turbines.

10.4.1. Legislation and Guidance

The noise assessment will be undertaken with reference to the following guidance:

- Planning Policy Statement 18: Renewable Energy, and associated Best Practice Guide (PPS18), Department of the Environment, August 2009;
- The Control of Noise (Codes of Practice for Construction and open Sites) Order (Northern Ireland) (CNO), The Department of Environment, November 2002;
- The Working Group on Noise from Wind Turbines (1996) ETSU-R-97, the Assessment and Rating of Noise from Windfarms, Final Report for the Department of Trade & Industry;
- M. Cand, R. Davis, C. Jordan, M. Hayes, R. Perkins (2013). A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, Institute of Acoustics;
- Bowdler et al (2016) Wind farms cumulative impact assessment, Institute of Acoustics Noise Bulletin Vol. 41 No. 1, Jan/Feb 2016;
- British Standards Institute (2019) BS 4142:2014+A:2019 'Method for rating and assessing industrial and commercial sound.';
- British Standards Institute (2014) BS 5228-1:2009+A:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise.';
- British Standards Institute (2014) BS 5228-2:2009+A:2014 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.';
- Fermanagh & Omagh District Council Local Development Plan (LDP) 2030, March 2023;
- British Standards Institute (2008) BS 6472 2:2008: 'Guide to evaluation of human exposure to vibration in buildings - Part 2: Blast-induced vibration.';
- Her Majesty's Stationery Office (HMSO) Department of Transport (1988) 'Calculation of Road Traffic Noise' (CRTN); and
- The Highways Agency, Transport Scotland, Transport Wales and The Department for Regional Development (Northern Ireland) (2020) Design Manual for Roads and Bridges, LA 111 Noise and vibration, revision 2 (DMRB).

PPS18 (2009) and associated Best Practice Guide refers to ETSU-R-97 for the assessment of noise from wind farms, stating that: "*The assessment and Rating of Noise from Wind Farms (ETSU-R-97), describes a framework for the measurement of wind farm noise and gives indicative noise levels calculated to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development.*" The use of ETSU-R-97 as assessment criterion is therefore considered to be in line with the PPS18.

Although the UK Government published a draft for consultation of a revision of the ETSU-R-97 guidelines in July 2025, it noted that this draft guidance should not be used until a response to this consultation is published. Any update to the status of this consultation will be taken into account in the assessment.

Good practice in the application of the ETSU-R-97 methodology will be referenced, as set out in Institute of Acoustics Good Practice Guide (M. Cand, R. Davis, C. Jordan, M. Hayes, R. Perkins, 2013) to the Application of ETSU-R-97 (IOA GPG). This includes guidance on the assessment of cumulative operational noise impacts from wind farms, and on this point, further guidance set out in a 2016 article in the Institute of Acoustics Noise Bulletin will also be considered.

Construction noise assessment is referred to in the CNO (Department of Environment, November 2002) which advise the use of BS 5228-1 & 2 as being suitable guidance on appropriate methods for controlling noise & vibration from construction and open sites in Northern Ireland.

F&ODC LDP 2030 outlines the strategic approach for renewable energy developments including wind farms, in Policy RE01. With regards to wind energy developments, it states that all proposal for wind energy development including single turbines, wind farms, extensions and repowering will be required to comply with the Fermanagh and Omagh Landscape wind Energy Strategy (outlined in Appendix 6 of the document) and demonstrate that the development does not results in unacceptable impacts on residential amenity including noise.

10.4.2. Study Area

The assessment will consider noise sensitive residential locations in the vicinity of the proposed Development. Specifically, ETSU-R-97 states that noise levels will be considered acceptable, even in the absence of measured baseline data, if predicted noise levels (including cumulative contributions from all wind farms) do not exceed 35 dB LA90. This is often referred to as the simplified ETSU-R-97 noise assessment methodology.

The Study Area will encompass dwellings where cumulative operational wind turbine predicted levels, exceed, approach or are likely to approach this 35 dB LA90 threshold, provided that specific contribution of the proposed Development is not acoustically negligible relative to that of the other wind developments considered. The latter will be relevant wind turbine schemes proposed or operational within the planning system within 10km of the proposed Development by the time of submission.

Cumulative effects from other proposed non-windfarm developments likely to affect receptors in the study area will also be considered where relevant.

Some of these noise-sensitive residential locations will also be potentially affected by noise or vibration effects from the construction activities of the proposed Development. In addition, dwellings located along site access tracks or transport routes will also be considered in relation to construction traffic.

10.5. Desktop Studies

10.5.1. Operation

The methodology for the assessment of operational noise from wind farms is documented in ETSU-R-97. In summary, the assessment shall:

- Identify the nearest NSRs;
- Determine the quiet daytime and night-time noise limits from the background noise levels at the nearest neighbours;
- Specify the type and noise emission characteristics of the turbines for the proposed Development;
- Calculate noise emission levels which would be due to the operation of the wind turbines as a function of site wind speed at the nearest neighbours, including the cumulative effect of all turbines from other wind farms where relevant;
- Compare the calculated wind farm noise emission levels with the derived noise limits; and
- The good practice guidance referenced above (IOA GPG) will be taken into account, including advice on baseline survey, wind shear calculations, and noise prediction methodology.

The calculated wind farm noise emission levels will be compared with the noise limits derived in accordance with ETSU-R-97. The noise limits derived according to the ETSU-R-97 guidance, for each NSR, apply to the total noise produced by all wind farms. Therefore, potential cumulative operational noise levels, including existing, consented and proposed wind turbines in the area, must be assessed relative to these limits.

When considering neighbouring cumulative wind farm noise, the potential noise emissions from the adjacent wind farm sites will be considered by examining the potential level of noise emission allowed under the respective consent for each of the sites, in line with the IOA GPG current best practice. The assessment methodology, in particular with regards to cumulative impacts, will also be discussed with F&ODC.

For contextual purposes, the predicted operational noise levels from the proposed turbines will also be compared to predictions for the existing turbines.

10.5.2. Construction (& Decommissioning)

In assessing the impact of noise and vibration from the initial decommissioning of existing infrastructure and subsequent construction activities, it is usual to accept that the associated works are of a temporary nature. The assessment of potential impacts due to noise emissions during construction will be undertaken in accordance with the BS 5228 British Standard guidance 'Code of practice for noise and vibration control on construction and open sites.' Predictions of construction noise will be made referencing typical activity emission levels and likely variations in noise levels at surrounding receiver locations, using the methodology set out in BS 5228 Part-1. Part 2 of the BS 5228 standard considers construction vibration, and this will also be referenced.

Any blasting, if used for rock extraction at borrow pits, may also create vibration and air overpressure which will be considered in the assessment if applicable.

Consideration will also be given to the potential impact of construction traffic noise on sensitive receptors in the area. The impact of traffic noise along the Site access routes will be assessed on the basis of the methodology within BS 5228-1, and the CRTN publication, where appropriate.

10.5.3. Field Surveys

The baseline environment will be assessed by measuring background noise levels as a function of wind speed at the nearest neighbours (or at a representative sample of the nearest neighbours), as required under ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms'. ETSU-R-97 also requires that any such measurements are not significantly influenced by existing operational turbines, to prevent unreasonable cumulative increases.

It is anticipated that a baseline survey will be required at potentially two locations representative of the residential receptor surrounding the site, to supplement historical background noise measurements. The baseline survey will consist of measuring background noise levels as a function of wind speed in accordance with the methodology outlined in ETSU-R-97 and the IOA GPG.

An initial site survey of the area is recommended to be undertaken to identify the surrounding residential properties and verify their up-to-date status i.e., occupied, in construction, unoccupied but habitable, consented in planning, derelict etc. to accurately inform the noise assessment.

10.6. Effects Assessment

10.6.1. Sensitivity of Receptors

All residential properties will be considered to be of high sensitivity to noise. Other receptors such as commercial, industrial, or agriculture properties are of low sensitivity and are located further away and as such will not have significant effects even with high impact magnitude, as such these are not considered further in the assessment.

10.6.2. Magnitude of Impact

The assessment of construction noise and vibration will identify if and when predicted noise levels may be above standard guideline limits, taking into account the rural character of the area. The assessment of the temporary effects of construction noise is primarily aimed at understanding the need for dedicated management measures and, if so, the types of measures that are required. In this respect, relevant working practices, traffic routes, and proposed working hours will be considered in the assessment. **Table 10.1** presents the criteria that will be used.

Table 10.1 - Impact Criteria for Construction Noise

Impact Magnitude	Definition
High	Construction noise is generally greater than 75 dB $L_{Aeq,T}$ during the construction period, or with periods of more than 85 dB $L_{Aeq,T}$ lasting not more than 4 weeks in any 12-month period.
Medium	Construction noise is generally less than or equal to 75 dB $L_{Aeq,T}$ during the construction period, with periods of up to 85 dB $L_{Aeq,T}$ lasting not more than 4 weeks in any 12-month period.
Low	Construction noise is generally less than or equal to 65 dB $L_{Aeq,T}$ during the construction period, with periods of up to 75 dB $L_{Aeq,T}$ lasting not more than 4 weeks in any 12-month period.
Negligible	Construction noise is generally less than or equal to 55 dB $L_{Aeq,T}$, with periods of up to 65 dB $L_{Aeq,T}$ lasting not more than 4 weeks in any 12-month period.

For construction traffic, the criteria set out in the DMRB will also be referenced. Construction noise management procedures will also be determined.

For operational noise from the turbines, the calculated wind farm noise emission levels will be compared with the noise limits derived in accordance with ETSU-R-97 (as set out above), including consideration of cumulative noise levels.

10.6.3. Significance of Effect

For construction noise and operational noise from the substation the magnitude of impacts translates directly to effect significance, given that all receptors would be of high sensitivity, with a scale of significance from negligible, through minor to moderate and major. Major or moderate construction impacts are considered 'significant' in the context of the EIA Regulations.

With regards to operational noise from wind turbines, if predicted (cumulative) noise levels from wind turbines are within the ETSU-R-97 derived noise limits, operational noise would be considered acceptable, and therefore not significant in EIA terms. If the predicted wind turbine noise levels are above the ETSU-R-97 noise limits, operational noise would be considered unacceptable and significant in EIA terms.

10.6.4. Cumulative Impacts

Other planned and operational wind farms within 10 km of the proposed Development will be considered within the cumulative operational wind turbine noise assessment (although it may be possible to scope out some developments within that area if predicted noise contributions at the nearest NSRs are negligible).

Three single turbine applications are known to have been consented in proximity to the Site (Ref: LA/2013/0179/F, L/2011/0743/F, and L/2019/1354/F). Other wind farm applications within 10 km are the Callagheen Windfarm extension (withdrawn) and Derrykillev Wind farm located 6 km north-west (appeal consented in 2016, L/2014/0588/TBA) with Derrykillev Wind Farm extension (LA11/2018/0166/TBA) in open consultation. Derrykillev Wind Farm (consisting of five turbines) is located at around 6 km distance to the proposed Development and will likely have negligible noise contribution at this distance, based on professional judgement, and as such this can be scoped out of the cumulative noise assessment. No other consented, in planning, or operational, wind farm development is known to be within 10 km of the Site and therefore cumulative assessment will likely only include the above two single turbines, but this will be kept under review during the course of the assessment.

As the existing Callagheen Windfarm turbines would be decommissioned as part of the proposed Development, they do not form part of the cumulative assessment.

Cumulative effects from other proposed non-windfarm developments likely to affect noise-sensitive receptors in the study area will also be considered where relevant.

No cumulative effects for construction and decommissioning as well as traffic noise are anticipated based on the above considerations, therefore this is scoped out and will not be assessed in the EIA.

10.7. Summary

A summary of the scoping assessment findings is provided in **Table 10.2**.

Table 10.2- Noise Scoping Assessment Summary

Potential Effect	proposed Development Phase	Rationale	Further Assessment
Scoped In			
Noise & vibration, Traffic Noise (including transboundary)	Construction (including decommissioning of existing infrastructure), Decommissioning (of proposed infrastructure)	Decommissioning of existing infrastructure may have some noise and vibration impacts at nearby NSRs and will be included with the assessment of the construction phase of the proposed Development. Decommissioning of the proposed Development will be assessed qualitatively.	Desktop assessment to BS 5228-1 & 2 for noise and vibration effects, and DMRB for traffic noise.
Noise	Operation	Turbine noise will likely have some impact on surrounding NSRs and requires detailed assessment.	Review of historical baseline noise data. Field survey to inform ETSU-R-97 assessment of wind turbines.
Cumulative	Operation	Cumulative operational noise levels, particularly from existing single turbines within 2 km, are	Cumulative assessment against agreed cumulative

		unlikely to represent negligible effects.	operational noise limits and criteria.
Scoped Out			
Vibration	Operation	Vibration from wind turbines is imperceptible at typical separation distances.	N/A
Noise and Vibration	Future Decommissioning	Future decommissioning of repower turbines is coped out of the assessment as the combined construction and decommissioning of the existing turbines represent worst-case scenario (scoped in).	N/A
Traffic Noise	Operation	Traffic movement during the operation of the proposed Development will be low and do not require assessment.	N/A
Infrasound	Operation	Infrasound levels from modern wind turbines are not perceptible.	N/A
Traffic Vibration	Construction, Operation, Decommissioning	DMRB advises that vibration from traffic on main roads does not require specific consideration.	N/A
Cumulative	Construction, Decommissioning	No wind development currently proposed in proximity so likely to have negligible cumulative effects for construction and decommissioning.	N/A
Transboundary	Construction (except traffic noise), Operation, Future Decommissioning	Negligible effects expected outside of F&ODC boundary given separation distances involved.	N/A

10.8. Questions for Consultees

- Do the consultees agree with the suggested approach for the noise assessment, including elements scoped in and out?
- Do the consultees have any concerns regarding the use of historical noise data associated with the Callagheen Windfarm project?
- Do the consultees have any specific requirements or comments regarding the proposed background noise survey?

11. Material Assets

11.1. Introduction

This chapter outlines the proposed scope for assessing potential impacts on material assets as part of the EIA. Material assets in the vicinity of the Site included are transportation infrastructure (i.e. public roads including site access and traffic) and utilities (electricity and telecommunications).

11.2. Access, Traffic and Movement

Access, traffic and movement will be assessed to quantify the impact of the proposed Development on the public road network, and to assess the significance of any effects resulting from this.

The access, traffic and movement EIA (scoping and further assessment) is undertaken in accordance with Institute of Environmental Management and Assessment Guidelines, Environmental Assessment of Traffic and Movement (IEMA, July 2023), hereafter referred to as the 'IEMA Guidance'.

11.2.1. Baseline & Key Sensitivities

Sensitive receptors are defined as locations which are sensitive to changes in traffic conditions as a result of the proposed Development.

The area surrounding the proposed Development is predominantly rural in character, comprising agricultural land interspersed with small clusters of residential properties and isolated dwellings. The local road network consists primarily of narrow, single-carriageway rural roads, with access to the Site provided via minor local routes. Wider regional connectivity is achieved through nearby A-class roads, such as the A32, which links the area to Enniskillen and the surrounding settlements.

Any proposed haul roads in the area will consider the existing road infrastructure limitations, the potential impact on local traffic, and the sensitivity of the surrounding rural environment, particularly where these routes pass through settlements and close to residential properties.

Consideration will be given to affected parties or population groups such as non-motorised users, public right of way users and emergency services. Consideration is also given to special interests which includes locations with a concentration of vulnerable users such as hospitals and schools.

Sensitive receptors are assigned to the nearest road links (being public roads within the vicinity of the Site), and their relationship with the highway network is assessed to determine their sensitivity to changes arising from the proposed Development.

11.2.2. Potential Effects Assessment - Scoped In

The following potential effects will be considered further during the EIA:

- Severance of communities;
- Road vehicle driver and passenger delays;
- Non-motorised user delay;
- Non-motorised amenity;
- Fear and intimidation on and by road users;
- Road user and pedestrian safety; and
- Hazardous/large loads.

Effects of noise associated with increased traffic for the proposed Development will also be considered within the EIA. Further discussion on potential noise effects and their assessment is included in Chapter 10.

11.2.3. Potential Effects Assessment - Scoped Out

- *Operational Phase Traffic*

The vehicles servicing the operational Callagheen Windfarm have been doing so since operations commenced in 2006, as such, they form part of the existing baseline. Following construction of the proposed Development, it is not anticipated that vehicle volume to the Site would significantly change. It is therefore proposed to scope out potential traffic effects during operations.

- *Future Decommissioning*

Future decommissioning of the repowered wind farm (in c.40 years time) could give rise to potential impacts on material assets similar to those identified herein for the decommissioning of the existing Callagheen Windfarm, for example, through increased traffic volumes and use of the local road network. However, it is proposed that future decommissioning impacts are scoped out of detailed assessment in the EIA. Predicting the environmental baseline, legislative standards, and recycling technology 40 years in the future would require substantial speculation. We would expect that a separate, legally binding Decommissioning Plan would be agreed as part of a planning condition, to be implemented prior to site restoration commencing.

- *Hazardous Loads – Catastrophe Analysis*

Section 3 of the ISEP (Formally IEMA) Guidance includes assessment of hazardous loads / large loads. In the context of the proposed Development this would refer to turbine components and transformers, the movement of which would be subject to agreement with the relevant highway authorities and police through relevant permit applications.

Turbine components and transformers are transported under controlled conditions such as police escort, permit systems and timed deliveries, following significant planning. Due to the control measures in place and the nature of the material being transported, it is considered not to be hazardous, and a ‘catastrophe analysis’ (ISEP Guidance) is scoped out of the EIA.

- *Road User and Pedestrian Safety – Safe System Approach*

For road safety, the ISEP Guidance calls for use of a ‘safe system’ approach. Due to the temporary increase in traffic, which will result from the proposed Development over a short duration, it is considered disproportionate to undertake safety modelling of historical established links for such a temporary traffic increase. A ‘collision cluster’ approach is considered more appropriate in these circumstances and will therefore be used as the road traffic collision (RTC) assessment methodology.

The ‘collision cluster’ approach will identify any trends or ‘clusters’ in RTC data on the links in the Study Area and will consider the potential for adverse effects on safety as a result of the proposed Development. Additionally, engineering judgement will be used to assess the suitability of existing road geometry for HGVs and abnormal indivisible loads (AILs) and this will inform the assessment in relation to safety. RTC data will be acquired through consultation with

- *DfI Roads and/or Police Service of Northern Ireland (PSNI).*

Road Vehicle Driver and Passenger Delays – Quantitative Assessment Driver delay on rural roads will primarily be affected by AILs. A review of the likely delay to drivers will be presented, however, due to the temporary duration of any delay no traffic modelling or simulation is proposed to be undertaken, and it is proposed that the assessment undertaken during the EIA will not quantify junction delays.

- *Air Quality*

Given the nature and scale of the decommissioning/construction and operational phases, it is not anticipated that there would be significant levels of vehicular traffic. As such, potential impacts on local air quality are expected to be minimal. No major sources of air pollution are associated with the Proposed

Development, and background air quality in the area is considered to be within acceptable limits. It is therefore proposed to scope out a detailed air quality assessment from the EIA.

11.2.4. Proposed Methodology for Further Assessment

- *Study Area*

The origin of each type of construction material is unlikely to be known at the time of undertaking the assessment, therefore it is reasonable to limit the extent of the assessment to the nearest major roads, which is most likely to be the A46 and A4, north and south-east of the proposed Development, respectively. The entrance to the Site would most likely be from Cornahaltie Road and will be confirmed through ongoing design, consultation and the EIA.

- *Baseline Traffic Flows*

The baseline traffic flows will be established for the Study Area. Where available, traffic count information will be taken from publicly available sources such as from DfI transport statistics data. Where unavailable, new traffic surveys will be commissioned.

If required, the traffic flow surveys would be undertaken on each link identified in the Study Area from one-week automatic traffic counts. The surveys would be undertaken during a neutral month (April, May, June, September or October) if possible, to provide a representative picture of traffic flows on each link.

Traffic growth factors can be applied to the baseline traffic flow data. DfI Roads should advise if traffic growth factors should be applied between the year of collection to the proposed year of construction.

Other baseline conditions within the Study Area will be established, including the following:

- Baseline road geometry from online mapping and Ordnance Survey Northern Ireland (OSNI) mapping, where required to inform the assessment of the capacity and suitability of the road for anticipated construction traffic;
- Road traffic collision (RTC) data collected from publicly available records. This data will be reviewed for RTCs which occurred within the Study Area within the last five full years of data; and
- Qualitative assessments of route(s) including identification of major junctions, crossing points and road width/classification.

- *Proposed Development Traffic Volume*

An estimation of the construction traffic expected for each decommissioning/construction activity will be established. It is likely that there will be two decommissioning phases as part of the Repower. This estimate will be developed by quantifying the number of vehicle deliveries for each activity during the decommissioning/construction phase. This traffic will be distributed across the predicted decommissioning/construction programme to establish the peak increase in traffic.

As per ISEP Guidance, the volume of construction traffic assessed will be reflective of the 'realistic worst-case' traffic and movement demand. Embedded mitigation will be considered in determining the traffic volume.

- *Access Assessment & Abnormal Indivisible Loads*

The initial feasibility assessment (ERM, 2025) identified several suitable ports of entry that could be used for delivering abnormal loads to the repowered wind farm. Access to the proposed Development is expected to consider these routes which will be confirmed through the EIA access assessment. The

impacts associated with abnormal indivisible load (AIL) deliveries will also be evaluated through a dedicated AIL assessment, the findings of which will be presented in an Abnormal Load Access Assessment report.

- *Receptor Sensitivity*

Following the establishment of the baseline conditions, sensitivity will be assigned to each link (high, medium, low, negligible). The sensitivity criteria will include:

- Severance of communities;
- Vehicle delay;
- Non-motorised user delay;
- Non-motorised user amenity;
- Fear and intimidation; and
- Safety.

Sensitivity will not be assigned to hazardous or large loads. The impact of AIL deliveries will be subject to a standalone assessment during the EIA and reported in an Abnormal Load Access Assessment.

- *Traffic Impact Assessment*

An initial screening exercise will be undertaken to evaluate which links within the traffic Study Area will be carried forward for further assessment. Links will be carried forward if:

- Traffic is predicted to increase by more than 30%, or heavy goods vehicles (HGVs) by more than 30%; or
- On routes identified as high sensitivity, where traffic is predicted to increase by more than 10% or HGVs by more than 10%.

For links which exceed these thresholds, further assessment will then be undertaken to establish the significance of the effect at each link. The effects considered for each link will be:

- Severance of communities;
- Non-motorised user delay;
- Non-motorised amenity; and
- Fear and intimidation on and by road users.

Irrespective of the initial screening assessment, road vehicle driver and passenger delays and road user and pedestrian safety will also be included in the assessment. The 'collision cluster' approach to assessing road safety will identify any trends or 'clusters' in RTC data on the links in the Study Area and will consider the potential for adverse effects on safety as a result of the proposed Development. Additionally, engineering judgement will be used to assess the suitability of existing road geometry for HGVs and AILs and this will inform the assessment in relation to safety.

The criteria adopted and assumptions made will be defined in the assessment but will broadly be a function:

- The value of the resource (i.e. its international, national, regional and local importance);
- The magnitude of the impact;

- The duration of impact;
- The reversibility of effects; and
- The number and sensitivity of receptors.

The determination of the magnitude of the impacts is undertaken by reviewing the proposed Development, establishing the parameters of the additional road traffic that may cause an impact, and quantifying these impacts. In establishing the magnitude of impact there is a need for interpretation and judgement on the part of the assessing engineer.

The assessment will consider embedded mitigation and propose additional mitigation measures where considered necessary to reduce potential impacts identified. Finally, once additional mitigation measures have been considered, an assessment of residual effects will be undertaken and a statement of residual significance made.

11.2.5. Cumulative Traffic

A cumulative assessment will be undertaken which seeks to establish the possible traffic flow increase as a result of other developments which share the same links as the proposed Development during the decommissioning/construction phase. Where possible, traffic data for the cumulative developments will be established from publicly available information.

Following the above steps, an assessment of the significance of predicted cumulative traffic will be made. Where significant effects have been identified, mitigation measures in relation to those effects will be proposed.

The AIL assessment will consider the full AIL route from the assumed port of delivery to the Site entrance for the transportation of wind turbine components and large electrical infrastructure.

11.2.6. Questions for Consultees

- Do the consultees agree that the ISEP (2023) Guidance (formerly IEMA) is appropriate to adopt for the traffic impact assessment?
- Do the consultees agree that the study area and methodology is appropriate?
- Can F&ODC advise if traffic growth factor should be applied to baseline traffic flow data between the year of collection and the year of commencement of construction, and if so how such factors should be derived?
- Do the consultees agree that it is appropriate to scope out the operational and future decommissioning phases of the proposed Development?
- Do the consultees agree with the adoption of ‘collision cluster’ approach to the assessment of road safety?
- Do the consultees agree that quantification of junction delays is not required?

11.3. Telecommunications and Utilities

Wind farms have the potential to interfere with electro-magnetic signals passing above ground and physically with infrastructure below ground. This can therefore potentially affect television reception, fixed telecommunication links and other utilities.

During the feasibility study (ERM, 2025), several telecommunications towers were identified in the vicinity of the Site, with their locations detailed in **Table 11.1**. Given the presence of the operational Callagheen Windfarm within the Site, it is likely that existing telecommunications links have been routed to maintain appropriate setbacks from the current turbines. However, as the proposed Development includes turbines in different locations within the site, there is potential for these to encroach upon the required setback distances (Fresnel zones) associated with these links.

Table 11.1: Telecommunication Tower Locations (in the vicinity of the Site)

Reference	Easting	Northing
Lergan Lane Tower	197385	356252
Cornahaltie Road No. 1	196401	355272
Cornahaltie Road No. 1	195583	355481
Lough Navar Forest Drive	206649	357119
Gurteen Road	196569	349404
L6121, Ballaghameehan	193618	346465
R281, Buckode	186551	352385
L6196, Kiltyclogher	197316	343936
Creamery Road, Derrygonnelly	211797	352188
Knockmore Road, Drumary, Derrygonnelly	211716	351434

As part of the EIA process, consultation will be undertaken with telecommunications and utility providers operating within the vicinity of the site. The EIA scoping opinion will establish the scope and level of assessment required, if any, in relation to telecommunications infrastructure.

The assessment of potential impacts arising from the proposed wind turbines on telecommunications links and infrastructure will be informed primarily through consultation with relevant network operators. This will include identifying existing links, their operational parameters (e.g. frequency, path geometry), and any constraints to ensure appropriate mitigation of potential interference.

12. Other Considerations

This chapter outlines a number of other considerations that need to be taken into account during the EIA, either to inform potential constraints to design evolution or the impact assessments. The considerations outlined are: shadow flicker, climate change, socio-economics and tourism, and aviation and radar.

The proposed Development would be assessed against the comparative and reparative baseline in the environmental assessment of each of the considerations discussed in this chapter.

12.1. Shadow Flicker

Shadow flicker is a visual effect that occurs when sunlight passes through the rotating blades of a wind turbine, creating a flickering or strobe-like pattern of light and shadow. Careful consideration of shadow flicker is therefore essential during the layout design and is scoped into the EIA.

During feasibility (ERM, 2025), a preliminary shadow flicker assessment was undertaken using a study area of 10 rotor diameters (approximately 1,490 m). This identified 31 residential receptors, a number of which are located within distances and orientations where shadow flicker effects may theoretically arise. The assessment, based on a worst-case scenario, indicated the potential for exceedances of recognised significance thresholds at a number of receptors.

Given the proximity of certain receptors and the number of properties potentially affected, shadow flicker will be scoped into the EIA.

Shadow flicker will be calculated using WindFarmer software for a single given turbine layout and set turbine dimensions. Shadow flicker will be calculated assuming:

- There are clear skies every day of the year;
- The turbines are always rotating;
- The sun can be represented as a single point;
- The blades of the turbines are always perpendicular to the direction of the line of sight from the specified location to the sun.

The assessment will be proportionate and will confirm predicted effects from the EIA design and identify appropriate mitigation measures to ensure compliance with relevant guidance.

12.1.1. Question for Consultees

- Do consultees agree with the proposed scope for shadow flicker?
- Do consultees agree with the outlined methodology to assess Shadow Flicker?

12.2. Climate Change

12.2.1. Climate Change and Extreme Weather

Repowering the existing operational Callagheen Windfarm will enable further support to Northern Ireland in meeting its targets for carbon reduction, through the production of low carbon renewable energy and a corresponding net reduction in carbon emissions in comparison to more carbon intensive generation sources. The vulnerability of the proposed Development to climate change and extreme climate events will be considered within the engineering design. UK Climate Projections, which is a set of tools and data that shows how the UK climate may change in the future, will be used to ensure that appropriate mitigation measures are embedded within the design. The layout design evolution and alternatives considered will be reported within the introductory chapters of the ES.

12.2.2. Carbon Balance

A carbon balance assessment employs the Scottish Government's Carbon Calculator Tool (Scottish Government, 2022) and quantifies the CO₂ emissions savings over the life of the proposed Development against the release of CO₂ from other energy generation methods. It also reports on the time it takes to pay back any carbon debt and the potential effects of the proposed Development on climate change in terms of carbon savings produced.

A carbon balance assessment will be produced to give an indication of the proposed Development's impact on the existing peat onsite and to assess the potential effects in terms of carbon dioxide (CO₂) emissions against the total potential carbon savings attributed to the proposed Development. The assessment will quantify the gains over the life of the project against the release of CO₂ during decommissioning/construction, including loss of any peat bog and construction of roads/tracks and other infrastructure. The latest version of the Carbon Calculator Tool that is available before the ES is submitted will be used.

12.2.3. Questions for Consultees

- Do the consultees agree with the approach that climate change and extreme weather would be integral to the design evolution of the proposed Development and detailed impact assessment not required?
- Do the consultees agree with the approach to considering carbon balance during the EIA?

12.3. Socio-Economic and Tourism

12.3.1. Introduction

Socio-economic and tourism assessment of onshore wind farms over the last decade have found no adverse effects assessed as significant in terms of the EIA Regulations and there is no reason to expect significant effects for the proposed Development. It is also not expected that any beneficial socio-economic effects identified would be considered significant in EIA terms. It is therefore proposed to scope socio-economics and tourism out of the ES.

Nevertheless, it is recognised that socio-economic and tourism issues will be of interest to stakeholders and local authorities and so a separate study and report on socio-economics and tourism will be undertaken and submitted with the planning application. The separate report will highlight the process through which the socio-economic benefits of the proposed Development will be maximised, rather than an assessment based on the worst-case scenario. As socio-economic and tourism effects are planning policy considerations, they will also be used to inform the planning application assessment. This section describes what will be considered in the socio-economic and tourism report and the approach that will be taken.

The proposed Development would be able to contribute to the local area and in line with good practice the future repowered wind farm could provide community benefits of around £2/MWh.

12.3.2. Baseline and Key Sensitivities

The study areas of the assessment will be selected to meet the interests of the key stakeholders and will be made of pre-defined administrative geographies. The proposed Development boundary lies exclusively within the F&ODC area.

The baseline assessment will include a description of the current socio-economic and tourism baseline within the local area. This will include a summary of the economic performance data and a description of the relevant tourism assets that will be covered in the assessment.

The baseline description and economic impacts will cover and compare the following study areas:

- Fermanagh and Omagh; and
- Northern Ireland.

Tourism and recreation receptors will be identified within 15 km of the proposed Development.

The socio-economic and tourism impact report will consider in detail the baseline characteristics that will inform the assessment of any impacts of the proposed Development. This will inform the scale of any impacts that are likely to occur within the local area and any actions that are designed to maximise the socio-economic benefits of the project proposed Development to the local area. Some of the economic indicators include:

- The median earnings of those who live in the county Fermanagh and Omagh is £30,135 per annum, which is equivalent to 96% of the average for Northern Ireland.
- 59.4% of Fermanagh and Omagh population is of working age (aged 16-64), compared to 61.9% for Northern Ireland.
- The construction sector accounts for 7.2% of the workforce in Fermanagh and Omagh, whereas across Northern Ireland it accounts for 4.8%.
- The F&ODC area has a total population of approximately 117,700, which accounts for 6% of the total population in Northern Ireland.

12.3.3. Potential Effects Assessment

It is anticipated that the contents of the report will include:

- Introduction;
- Economic development and tourism strategic context;
- Baseline socio-economic context;
- Baseline tourism and recreation context;
- Maximising socio-economic benefits;
- Socio-economic assessment;
- Tourism and recreation impact assessment; and
- Summary of findings and conclusion.

This will primarily be a desk-based study with consultation undertaken with the local community to further inform the baseline and inform any opportunities from the proposed Development which arise therein.

The assessment of socio-economic impacts will focus on the level of activity/employment supported during the decommissioning/construction and operation phases. Government and industry reports will be used to determine the expected capital and operational expenditure associated with the proposed Development, as well as the breakdown of expenditure by different contracts (e.g. turbine, balance of plant). An assumption will then be made based on the share of each type of contract that can be secured regionally and nationally. This increase in turnover will then be used to estimate the economic impact associated with the proposed Development.

In order to assess effects on tourism and recreation, the features that make the local area distinctive and attractive will be identified and the potential impact of the proposed Development on those key features will then be assessed.

12.3.4. Questions for consultees

- Do the consultees agree with the approach of scoping socio-economics out of the ES and into a standalone report?
- Do the consultees agree that the scope of the proposed socio-economic assessment is appropriate?
- Are there specific socio-economic effects that should be considered in the standalone report?

12.4. Aviation & Radar

The operation of wind turbines has the potential to cause a variety of adverse effects on aviation. These include: physical obstructions, the generation of unwanted returns on primary surveillance radar (PSR) and adverse effects on the overall performance of communications, navigation and surveillance (CNS) equipment.

The Site Feasibility Assessment (ERM, 2025) identified that the proposed Development lies outside the operational airspace of all relevant radar installations, including those at Belfast, Donegal, Enniskillen/St Angelo, Casement, Londonderry, Sligo, Galway, Dublin Meteorological and Shannon Meteorological. The assessment concluded that the proposed Development presents a low risk to all identified radar systems, as line-of-sight analysis demonstrated that the turbines would remain screened from radar detection. Distances between the proposed turbines and the radar assets range from approximately 23.5 km to 201.2 km

Although aviation is not formally classified as an environmental topic under the EIA Regulations, engagement with relevant consultees will determine whether any technical assessments are required to appropriately consider potential effects on aviation infrastructure and radar systems during the design evolution of the proposed Development.

Any aviation and radar considerations, together with outcomes from consultation, will be documented in the design evolution/consideration of alternatives chapter of the ES. Should any technical assessments be required, these will be provided either as an ES appendix or as a standalone document within the planning application pack.

It is likely that the proposed Development would include aviation warning lighting in accordance with regulatory requirements and the aviation authorities. Potential effects of aviation lighting on nearby receptors is considered within the landscape and visual Chapter (Chapter 8) of this Scoping Report.

12.4.1. Questions to consultees

- Do the consultees agree with the approach to considering aviation and radar during the EIA?

12.5. Major Accidents & Disasters

The proposed Development is not located in an area with a history of natural disasters. The decommissioning of the existing wind farm and construction and operation of the repower would be managed within the requirements of a number of health and safety related regulations. Peat slide risk would be considered to inform the engineering design (Chapter 7) and environmental management plans would be in place, therefore no likely significant effects in terms of major accidents or disasters are identified and detailed assessment scoped out for further assessment.

12.5.1. Questions to consultees

- Do the consultees agree to scope out major accidents and disasters?

12.6. Human Health

The topics addressed in this scoping report inherently include an evaluation of potential significant risks to human health arising from the Proposed Development. For example: water quality, hydrogeology, erosion and sediment transport (Chapter 7); visual effects (Chapter 8); noise (Chapter 10); traffic (Chapter 11); air quality (Chapter 11) shadow flicker, radar, tourism (Chapter 12). Furthermore, all phases of the proposed Development (decommissioning, construction, operation) would follow prevailing health and safety at work requirements, emergency procedures and best practice. The repowering wind farm design would also include avoidance measures to shadow flicker effects (Chapter 12), ice throw and lightning strike. A standalone human health impact assessment is therefore scoped out of the future ES.

12.6.1. Questions to consultees

- Do the consultees agree to scope out a standalone detailed human health impact assessment in the ES?

13. Environmental Statement Structure

The overall approach and findings of the assessments to be undertaken of the proposed Development, as set out in this report and in the Council's resulting scoping opinion, will be reported in an ES. The ES will accompany the planning application for the proposed Development to the Planning Authority to aid their decision-making process. It will also be shared with stakeholders and the public as part of the planning process.

Regulation 11 of the EIA Regulations state that:

“(2) An environmental statement is a statement which includes at least—

(a) a description of the Proposed development comprising information on the site, design, size and other relevant features of the development;

(b) a description of the likely significant effects of the Proposed development on the environment;

(c) a description of any features of the Proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

(d) a description of the reasonable alternatives studied by the applicant, which are relevant to the Proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the significant effects of the development on the environment;

(e) a non-technical summary (NTS) of the information referred to in sub-paragraphs (a) to (d); and

(f) any information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected”

The outline structure of the ES will likely be:

- Non-Technical Summary;
- Chapter 1: Introduction;

- Chapter 2: Design Evolution and Alternatives;
- Chapter 3: Proposed Development;
- Chapter 4: Ecology (excluding ornithology);
- Chapter 5: Ornithology;
- Chapter 6: Geology, Hydrology, Hydrogeology and Peat;
- Chapter 7: Landscape and Visual Amenity;
- Chapter 8: Cultural Heritage and Archaeology;
- Chapter 9: Access, Traffic & Transport;
- Chapter 10: Noise and Vibration;
- Chapter 11: Other Issues
- Chapter 12: Schedule of Mitigation;
- Supporting Figures; and
- Appendices.

It is proposed to keep the content of the main ES technical chapters concise while the associated methods, baseline data, technical assessments are included as appendices.

14. Summary

This report has been prepared on behalf of the Applicant by Natural Power, with specialist input from JUNO Planning and Environmental (policy); APEM (ornithology); Hoare Lea (acoustics); Gahan and Long (archaeology and cultural heritage); and BiGGAR Economics (socio-economics and tourism). It sets out the details of initial scoping undertaken as part of the EIA for repowering the Applicant's existing operational Callagheen Windfarm in County Fermanagh.

The Applicant seeks to use this report to request a Scoping Opinion from the Planning Authority. For each environmental discipline or topic area, questions have been provided to aid the Planning Authority and consultees in their review and response. The questions focus on the methodologies, baseline data and likely impacts caused by the development. Information has been provided on the proposed Development and the known environmental receptors. Where features or receptors are deemed to have a possible significant effect the methodologies to further assess potentials effects have been provided for comment. Responses on these would help ensure that the detailed methodology, survey and assessments are carried out with consideration to all statutory consultees and key stakeholders.

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